21st International Leprosy Congress 2022

08th - 11th NOVEMBER 2022

Theme : Better Knowledge - Early Diagnosis - Improved Care

A combined Physical and Web-based Hybrid Conference

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MESSAGE FROM THE ORGANISING SECRETARY

Dear Delegates

On behalf of the organizing committee, we are very happy to bring you the abstract book with all the details of the Scientific Programme. I must congratulate our scientific team for meticulously planning all the details of the Scientific Programme, which is the main focus and basis of any successful congress. This congress being Hybrid in nature, has both physical and virtual sessions with a large number of symposia, lead talks, paper presentations, poster and short video presentations. Care has been taken to include abstracts of all of them in this book, unless they were not sent in time for inclusion.

In addition, these abstracts are going to be available for citing with ISSN (ISSN - International Standard Serial Number, an eight-digit number which identifies periodical publications, including electronic serials). The Abstracts will also be published on a website. We are also registering with CrossRef for a Digital Object Identifier (DOI) for this publication. The DOI uniquely identifies the abstract book and helps other authors cite these published abstracts in their own works. Individual abstracts can be cited via unique identifiers and page numbers of the published abstract book. Registering DOI for the Abstract book provides greater visibility not only to the authors and their academic research but also to the ILC conference as a whole. It also promotes the ILA and partner associations as these premier organizations bring out world-class research to practitioners and other researchers.

We thank team Mediknit, our partner in organising this congress, for providing the e-platform for receiving, collating and organising the scientific content of the congress and supporting the compilation of this abstract book. The organising committee extends its gratefulness to all the presenters and speakers and participants of this congress for their support, benevolence and contribution.

Best regards

P Narasimha Rao

On behalf of Organising team -ILC 2022

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MESSAGE FROM THE DESK OF THE SCIENTIFIC TEAM

Welcome to the 21st International Leprosy Congress (ILC) being hosted in the historic city of Hyderabad, India. Here we are again, ready to further our understanding of the millenary disease that still afflicts human beings and challenges our curiosity. There is no doubt that the global picture of leprosy is different now than it was 40 years ago. It is true that the widespread use of MDT and improvements in patient care have led to a major reduction in case numbers worldwide and also to changes in the epidemiologic features of the disease. However, it is clear that leprosy continues to be a major problem in many countries not only due to the continued transmission of the disease but also because of the potential risk of developing disabilities and deformities, with devastating social and economic consequences. On one hand, mechanisms of disease transmission and the understanding of nerve damage are still obscure areas of our knowledge. On the other hand, figures for new case detection rates and the number of new cases with grade 2 disability are still concerning in some parts of the world apart from difficulties in accessing MDT services. We are once again at a critical point in the history of leprosy. It is time again to augment efforts and commitments from all stakeholders for '*Better Knowledge - Early Diagnosis - Improved Care*' which is the theme for the congress. The 21st International Leprosy Congress is a privileged occasion for such interaction and partnership.

The Scientific Program, under the experienced guidance of Dr. V M Katoch, has been carefully prepared to fulfil all expectations from different perspectives within a multidisciplinary approach to leprosy as a disease, as a research model, and as a social concern. Thanks to enthusiastic participation from leprosy workers, researchers and leading figures in the field from around the globe - we are going to have an enriching academic program. The 21st ILC is unique in that it is planned as a HYBRID congress with physical and virtual sessions. The scientific team has arranged an academic feast in the form of 5 plenary sessions; 7 symposia on important topics; more than 250 oral free papers in the physical mode; and 150 papers in the virtual mode. In keeping with the times, we have moved to the electronic poster mode and about 300 e-posters will be on display at the congress and an additional 150 e-posters virtually. One of the breakout halls has been dedicated to sessions focusing on the theme of the congress. We wish to sincerely thank all the invited faculty, presenters, and chairpersons for their rich contribution to the scientific program which will be a key element to the success of the conference We are sure that these abstracts published here in this abstract book will be thought-provoking and stimulate rich academic discourse and provide leads for future research ideas.

The Scientific Team of ILC 2022 takes this opportunity to warmly welcome you to this flagship event at Hyderabad.

Best Regards

The Scientific Team of ILC 2022

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PHYSICAL CONGRESS OVERVIEW
SCIENTIFIC PROGRAMME

Wednesday, 9th November 2022

ILC Physical Congress Session – Day 1

TIME	TOPIC
8:30 - 10:00 am (90 min)	Plenary Session I • Inauguration function- Protocol – 1.5 hours • Govt. of India Representatives & Central & State, Hon Health Ministers
10:00 - 10:30 am	TEA BREAK
10:30 - 12:30 pm (120 min)	Plenary Session • Invited Plenary Speakers
12:30 - 2:00 pm	LUNCH BREAK

Wednesday, 9th November 2022
ILC Breakout Scientific Sessions – Day 1

TOPIC			
HITEX		**HICC NOVOTEL**	
SESSION 1: 2:00 - 3:00 pm (60 min)			
HALL A	SHF Sponsored Session on Rapid diagnosis of drug resistance in leprosy (30 min)	**HALL 1**	Thematic Session – Better Knowledge
HALL B	Clinical I Clinical Variants in Leprosy – Session 1	**HALL 2**	Epidemiology I Epidemiology – Session 1
		HALL 3	Clinical II Adverse Drug Reactions/Events in Leprosy
HALL C	Disability I Disabilities & POD in Leprosy	**HALL 4**	Lab Aspects I Diagnostics (Conventional & Newer Technologies/ Markers)
		HALL 5	Social Aspects I Psychosocial & Mental Health – Session 1

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Wednesday, 9th November 2022
ILC Breakout Scientific Sessions – Day 1 contd.

TOPIC			
HITEX		**HICC NOVOTEL**	
SESSION 2: 3:00 - 4:00 pm (60 min)			
HALL A	Novartis Symposium on Leprosy & AI Screening (30 min)	**HALL 1**	Thematic Session – Better Knowledge
		HALL 2	Epidemiology II Epidemiology – Session 2
		HALL 3	Special Session – Brazilian Society of Hanseniasis (English Session)
HALL B	Innovation Session & Hub	**HALL 4**	Lab Aspects II Immunology & Molecular Biology
HALL C	WHO Sponsored Session I on LPEP	**HALL 5**	Social Aspects II Psychosocial & Mental Health – Session 2
4:00 - 4:30 pm TEA BREAK			
SESSION 3: 4:30 - 5:30 pm			
HALL A	(Starts at 3:30 pm) Perspectives & Presentations by Persons Affected by Leprosy	**HALL 1**	Thematic Session – Better Knowledge
HALL B	Innovation Session & Hub (Cont.)	**HALL 2**	Epidemiology III Programmatic Management – Session 1
		HALL 3	Clinical III Clinical Variants – Histoid & Others
HALL C	Student & Trainees Quiz Preliminaries	**HALL 4**	Disability II Disability & Plantar Ulcers – Session 1
		HALL 5	Social Aspects III Stigma & Discrimination – Session 1

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Thursday, 10th November 2022
ILC Breakout Scientific Sessions – Day 2

TIME	TOPIC
9:30 - 10:30 am (90 min)	Plenary Session II • Plenary Sessions: Day 2
10:30 - 11:00 am	TEA BREAK
11:00 - 12:30 pm (120 min)	Plenary Session III • Invited Speakers • Sponsored Sessions
12:30 - 2:00 pm (90 min)	LUNCH BREAK

Thursday, 10th November 2022
ILC Breakout Scientific Sessions – Day 2

TOPIC			
HITEX		HICC NOVOTEL	
Session 1: 8:00 - 9:00 am (60 Min)			
HALL A	ILC Special Session	HALL 1	Thematic Session Early Diagnosis
HALL B	Special Session on Antimicrobial Resistance (AMR) in Leprosy	HALL 2	Epidemiology IV Programmatic Management – Session 2
		HALL 3	Clinical III Leprosy in Covid 19 – Session 1
HALL C	Disability III Disability & Plantar Ulcers – Session 2	HALL 4	Lab Aspects III Genetics & Genomics
		HALL 5	Social IV Addressing Issues of Persons Affected by Leprosy
SESSION 2: 2:00 - 3:00 pm (60 min)			
HALL A	GLP-SHF Session (Bangkok Declaration) (45 min)	HALL 1	Thematic Session Early Diagnosis
		HALL 2	Disability IV Nursing & Self Care
		HALL 3	Clinical IV Leprosy in Children & Elderly

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Thursday, 10th November 2022
ILC Breakout Scientific Sessions - Day 2 contd.

TOPIC			
HITEX		**HICC NOVOTEL**	
HALL B	Social V: Capacity Building Panel Discussion: (45 min)	HALL 4	Therapy I MDT & Treatment Outcomes
HALL C	IAL Academy Sessions Symposium on 'Role of MIP Vaccine in Leprosy'	HALL 5	Epidemiology V Modelling for leprosy Control – Session 1
SESSION 3: 3:00 - 4:00 pm (60 min)			
HALL A	Therapy II Symposium on Post Exposure Prophylaxis (PEP)	HALL 1	Thematic Sessions Early Diagnosis
		HALL 2	Meet the Editors
		HALL 3	Clinical IV: Reactions, Neuropathy & NFI
HALL B	WHO Sponsored Session 2	HALL 4	Disability V: Physical & Surgical Rehabilitation Panel Discussion: (45 min)
HALL C	Laboratory IV: Pathology & Microbiology	HALL 5	Epidemiology VI: Modelling for Leprosy Control – Session 2 Panel Discussion: (45 min)
4:00 - 4:30 pm TEA BREAK			
SESSION 4: 4:30 - 5:30 pm			
HALL A	Award Paper Session – Physical	HALL 1	Thematic Sessions Early Diagnosis
HALL B	Social VI: Social Aspects – Other topics Panel Discussion: (45 min)	HALL 2	Disability VI Reconstructive Surgery (RCS)
		HALL 3	Clinical V: Post RFT Issues & Relapse
HALL C	ILC Special Session Leprosy as a Skin NTD – Strengths & Challenges	HALL 4	ILC Special Session IADVL – SIG Leprosy Session
		HALL 5	Epidemiology VII Epidemiological Mapping

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Friday, 11th November 2022
ILC Breakout Scientific Sessions – Day 3

TOPIC			
HITEX		**HICC NOVOTEL**	
SESSION 1: TIME: 8:00 - 9:00 am (60 Min)			
HALL A	Student & Trainee Quiz	HALL 1	ILC Special Session
HALL B	ILC Special Session	HALL 2	ILC Special Session
		HALL 3	ILC Special Session
HALL C	ILC Special Session	HALL 4	Epidemiology VII: Monitoring & Evaluation
		HALL 5	ILC Special Session
SESSION 2: 9:00 - 10:00 am (60 min)			
HALL A	ILC Sponsored Session	HALL 1	Thematic Session Improved Care
		HALL 2	IAL & BSH Special Session
HALL B	Disability VII POD, Physiotherapy & Orthotics	HALL 3	Epidemiology VIII WHO & National Programmes
		HALL 4	Social Aspects VII Social Rehabilitation
HALL C	Leprosy Session in French	HALL 5	Therapeutics Chemoprophylaxis
10:00 - 10:30 am TEA BREAK			

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Friday, 11th November 2022
ILC Breakout Scientific Sessions – Day 3 contd.

TOPIC			
HITEX		HICC NOVOTEL	
SESSION 3: 10:30 - 11:30 am (60 min)			
HALL A	ILC Special Session	HALL 1	Thematic Session Improved Care
		HALL 2	Social VI Social Aspects – Others
		HALL 3	Clinical VIII Eye in Leprosy
HALL B	Clinical VII Reactions – Session 2	HALL 4	Epidemiology IX Migration & Networking
HALL C	Epidemiology IX Transmission	HALL 5	Disability VI Disability, Rehabilitation & Late Papers
SESSION 4: 11:30 - 12:30 pm (60 min)			
HALL A	ILC Special Session	HALL 1	Thematic Session Improved Care
HALL B	Epidemiology VII Monitoring & Evaluation	HALL 2	Therapeutics VI Leprosy Care in Covid 19 – Session 2
		HALL 3	Clinical IX Dermoscopy in Leprosy & Management of High BI Patients
HALL C	Laboratory VI Lab Aspects – Others	HALL 4	Stigma & Discrimination – Session 2
		HALL 5	Social Aspects: Psychological Aspects & Mental Health
12:30 - 2:00 pm LUNCH BREAK			

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Friday, 11th November 2022

ILC Breakout Scientific Sessions – Day 3 contd.

TIME	TOPIC
2:00 - 3:00 pm (60 min)	Plenary Session IV • Synopsis of Congress and Perspectives
3:00 - 3:30 pm	**TEA BREAK**
3:30 - 5:30 pm (120 min)	Plenary Session V Closing Plenary Session – ILA General Assembly • General Assembly of ILA • Closing Plenary • Vote of Thanks
7:00 - 8:00 pm	Cultural Program
8:00 - 10:00 pm	Fellowship Dinner & Farewell

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VIRTUAL CONGRESS OVERVIEW
SCIENTIFIC PROGRAMME

Tuesday, 8th November 2022
ILC Virtual Congress – Day 1

TIME	TOPIC	
5:30 - 6:45 pm	E-Inaugural Session of Virtual Congress Inauguration Function- Protocol – 75 Min	
7:00 - 10:20 pm	Web-based Scientific Sessions (in 5 Virtual Halls)	
7:00 - 8:00 pm (60 min)	**Session 1**	
	HALL 1	Epidemiology & Control I Epidemiology – Session 1
	HALL 2	Portuguese Session I Session Coordinator: Claudio Salgado
	HALL 3	Clinical Aspects I Clinical Variants in Leprosy – Session 1
	HALL 4	Laboratory Aspects I Lab Diagnostics
	HALL 5	ILC Special Session
8:00 - 8:10 pm	BREAK - 10 Min	
8:10 - 9:10 pm (60 min)	**Session 2**	
	HALL 1	Therapeutic Aspects I Management in Special Situations
	HALL 2	Disability & Rehabilitation I Deformities & Plantar Ulcers – Session 1
	HALL 3	Clinical Aspects II Clinical Variants in Leprosy – Session 1
	HALL 4	Topic – History of leprosy SHF Thematic Session: Preservation of Leprosy History in the World (in Asia, South America, etc.) (30min)
	HALL 5	Laboratory Aspects II Immunology & Molecular Biology – Session 1
9:10 - 9:20 pm	BREAK - 10 Min	

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Tuesday, 8th November 2022
ILC Virtual Congress – Day 1 contd.

TIME	TOPIC	
9:20 - 10:20 pm (60 min)	**Session 3**	
	HALL 1	ILC Special Session Symposium on Migration in Leprosy
	HALL 2	Social Aspects I Stigma & Discrimination
	HALL 3	Therapeutic Aspects II MDT & Treatment Outcomes
	HALL 4	(Starts at 8:45 pm) Laboratory Aspects II Pathology & Microbiology – Session 1
	HALL 5	ILC Special Session

Wednesday, 9th November 2022
ILC Virtual Congress – Day 2

TIME	TOPIC	
6:30 - 10:00 pm	ILC Virtual Congress Sessions	
6::30 - 7:30 pm (60 min)	**Session 1**	
	HALL 1	Clinical Session III Leprosy Care in Covid 19
	HALL 2	Portuguese Session II Coordinator: Henk Eggens
	HALL 3	Social Aspects II Psychosocial & Mental Health
	HALL 4	Disability & Rehabilitation II Deformities & Plantar Ulcers – Session 2
	HALL 5	Epidemiology & Control II: Epidemiology Session 2
7:30 - 7:40 pm	BREAK - 10 Min	

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Wednesday, 9th November 2022
ILC Virtual Congress – Day 2 contd.

TIME	TOPIC	
7:40 - 8:40 pm (60 min)	**Session 2**	
	HALL 1	Epidemiology & Control III Epidemiology – Session 3
	HALL 2	Laboratory Aspects III Pathology & Microbiology – Session 2
	HALL 3	Social Aspects III Capacity Building & Others
	HALL 4	Disability & Rehabilitation III Physical & Surgical Rehabilitation
	HALL 5	ILC Special Session
8:40 - 8:50 pm	BREAK - 10 Min	
8:50 - 9:50 pm (60 min)	Session 3	
	HALL 1	Epidemiology & Control IV Epidemiology – Session 4
	HALL 2	Clinical Aspects IV Leprosy in Children & Elderly
	HALL 3	Laboratory Aspects IV Immunology & Mol. Biol.
	HALL 4	Social Aspects IV Social Aspects – Others
	HALL 5	Miscellaneous & Others

Thursday, 10th November 2022
ILC Virtual Congress – Day 3

TIME	TOPIC	
6:30 - 10:00 pm	ILC Virtual Congress Sessions	
6:30 - 7:30 pm (60 min)	Session 1	
	HALL 1	Award Paper Session (Virtual) (12 papers)
	HALL 2	Clinical Aspects V Neuropathy & NFI
	HALL 3	Epidemiology & Control IV Migration, Modelling & Others
	HALL 4	Therapeutic Aspects III Newer Drugs & Regimens
	HALL 5	ILC Special Session NLEP Session – NLEP Worker's Quiz
7:30 - 7:40 pm	BREAK - 10 Min	

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Thursday, 10th November 2022
ILC Virtual Congress – Day 3 contd.

TIME	TOPIC	
7:40 - 8:40 pm (60 min)	Session 2	
	HALL 1	Award paper session (Cont.)
	HALL 2	Clinical Aspects VI Reactions
	HALL 3	Laboratory Aspects V USG & Others
	HALL 4	Epidemiology & Control V Epidemiology – Others
	HALL 5	Epidemiology & Control VI: Epidemiology & Control – Others
8:40 - 8:50 pm	BREAK - 10 Min	
8:50 - 9:50 pm (60 min)	Session 3	
	HALL 1	Lab Aspects – VI Lab Aspects – Others
	HALL 2	SHF Thematic session: Lessons learned on stigma and discrimination (30 min)
	HALL 3	Laboratory Aspects VII Lab Aspects – Others
	HALL 4	Clinical Aspects VI Dermoscopy & Others
	HALL 5	ILC Special Session

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21st International Leprosy Congress 2022

Plenary Abstracts

PLENARY ABSTRACTS

#P-01

GOING THE LAST MILE TO ELIMINATE LEPROSY

Lutz Hegemann

President Global Health and Sustainability, Novartis

The fight against leprosy is Advancing toward leprosy elimination requires actions on three interconnected fronts. First, we need to keep leprosy in focus and maintain awareness of the disease as a global health issue – especially in the face of the unprecedented disruption to monitoring caused by COVID-19. Eliminating leprosy demands effective case detection models for hard-to-reach communities, where untreated patients continue to spread the infection without knowing it. Second, we need to continue to bring technical and scientific innovation to the field of leprosy. Artificial Intelligence and digital technologies offer an immense opportunity to significantly improve early detection and diagnosis. Innovative strategies that interrupt transmission, such as leprosy post-exposure prophylaxis, are also key. Third, we need to continue to develop new ways for all stakeholders – companies, state actors and civil society – to partner efficiently. Only by maintaining an extraordinary level of collaboration will we be able to address a global health challenge of this magnitude.

Together with partners, Novartis has been fighting leprosy for more than 40 years, and its Multi- Drug Therapy donation has helped treat more than 7 million patients since 2000. Yet, along our journey, we have learned that medicines are not enough to have scalable impact. We need to continue to innovate and work with national leprosy programs, the World Health Organization and all our partners to ensure holistic end-to-end solutions.

Our vision is nothing less than to eradicate leprosy. With a comprehensive and committed plan of action, we can do just that.

#P-02

HISTORY PRESERVATION AS A THIRD PILLAR TO FIGHT AGAINST LEPROSY

Takahiro Nanri

Executive Director, Sasakawa Health Foundation

In recent years, in addition to the focus on eliminating leprosy as a disease, increasing attention is being paid to the stigma and discrimination associated with it, especially after the United Nations General Assembly adopted Resolution 65/215 on Elimination of discrimination against persons affected by leprosy and their family members in 2010. By comparison, far less effort has gone into the preservation of leprosy history, and it is not even mentioned in the WHO Global Leprosy Strategy.

Sasakawa Health Foundation (SHF) has been working on the preservation of leprosy history since the 2000s, mainly in three areas: 1) building foundations of history preservation at selected locations, 2) creating a network, and 3) establishing an information platform. With regard to 1), the foundation supported the collection and preservation of relevant documents and records, testimonies of persons affected, and other conservation efforts in the Philippines, Malaysia, Spain, Portugal, and elsewhere. As for 2), the foundation held five international conferences over the past decade in order to build a network among persons affected, NGOs, researchers, government officials, to foster history preservation. In relation to 3), the foundation has developed a portal site on the history of leprosy in cooperation with the International Leprosy Association.

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We believe that preserving leprosy history, especially the stories and memories of people who have experienced the disease, will not only contribute to reduce stigma and discrimination, but also provide pointers on how to realize a society where no one is left behind. Based on the foundation's achievements to date and lessons learned, this presentation will examine why history preservation should be considered as a third pillar to fight against leprosy.

#P-03

REMAINING CHALLENGES REGARDING STIGMA AND DISCRIMINATION IN LEPROSY

Alice Cruz

United Nations Special Rapporteur on the elimination of discrimination against persons affected by leprosy and their family members

On this presentation, the United Nations Special Rapporteur for the elimination of discrimination against persons affected by leprosy and their family members, Alice Cruz, discusses progress and remaining challenges with regard to the elimination of discrimination on the grounds of leprosy /Hansen's disease, based on her experience as the mandate holder of a human rights mechanism specifically created by the Human Rights Council to monitor the human rights situation of persons who experience Hansen's disease and their families and to provide guidance to United Nations Members States on that regard. Discriminatory laws, harmful customs, practices and stereotypes, as well as the status of the enforcement of civil, political, economic, social and cultural rights (including the right to the highest attainable standard of physical and mental health) for persons affected by Hansen's disease and their family members, but also of standards that were created to protect specific groups, such as persons with disabilities, women and children, will be thoroughly examined, based on data gathered during the last five years for the thematic and country reports of the Special Rapporteur. The setback brought on by the Covid-19 pandemic will be also examined. Lastly, pragmatic and constructive recommendations for eliminating ongoing institutionalized, structural and interpersonal discrimination on the grounds of Hansen's disease and for fostering the much-needed paradigmatic shift, from traditional medical and charity-based approaches to the enforcement of de facto equality for persons affected by Hansen's disease and their family members together with their right to self-determination, will be presented.

#P-04

NEED FOR NEW MDT FOR LEPROSY: WHY AND HOW

Diana N. J. Lockwood

Emeritus Professor of Tropical Medicine, London School of Hygiene and Tropical Medicine, London, UK

We have high cure rates for treatment of leprosy patients with the WHO multi-drug combination for treating leprosy. However under-recognized adverse effects mean we should be testing different regimens for treating leprosy. The three drug regimen comprising monthly Rifampicin and daily Dapsone and clofazimine is currently given to multibacillary patients for 12 months. The bacteriological cure rates are 99% and relapse rates of about 5%. Dapsone treatment causes anemia in 45-90% of patients, potentially problematic for women. Dapsone hypersensitivity (DH) syndrome occurs in 0.5–3.6% of individuals treated with dapsone, with a fatality rate of 9.9%.

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Clofazimine causes significant skin discoloration in active skin lesions and ichthyosis on the shins. This visible sign of leprosy may lead to treatment disclosure and increase stigma. Clofazimine treatment is associated with adverse effects in gastro- intestinal, hepatic, systems and the eyes.

We should be testing new drug regimens that do not include dapsone and clofazimine.

Monthly single dose ROM (rifampicin, ofloxacin and minocycline) given for 12 months has been tested in a few studies.

A large multi-centre randomized controlled trial using an equivalence study design comparing twelve months MDT and twelve-monthly doses of ROM (ROM-12) for individuals with MB leprosy should be done. The primary outcomes of the trial would be cure and relapse rates and frequency of adverse events and acceptability of treatment. We predict the clinical improvement and relapse rate would be similar in the two groups but that those receiving ROM would experience fewer adverse effects and may have higher rates of treatment completion. This new treatment could improve many patients lives.

Reference:

1. Diana N. J. Lockwood et al. Safer and newer antimicrobial drugs for leprosy – time to test monthly ROM. Lepr Rev (2022) 93, 96–101 DOI: 10.47276/lr.93.2.96

#P-05

STRUCTURE-GUIDED DRUG DISCOVERY IN MYCOBACTERIA - APPLICATIONS TO LEPROSY

Tom L Blundell

Cambridge University, Department of Biochemistry, Tennis Court Road, Cambridge, CB21GA, UK

The genome sequences of pathogens can give clues about the choice of protein targets including those of existing drugs, repurposing of others, and the design of new ones to combat the increasing occurrence of drug resistance. I will discuss progress in using structure-guided approaches for targets in mycobacteria, first in M. tuberculosis and M abscessus, and in recent years in *M. leprae*. I will describe fragment-based techniques, pioneered in 1999 for cancer in structure-guided lead discovery by Astex, a company I cofounded.

The genome of *M. leprae* has reductively evolved to have 1615 protein coding genes; this contrasts with M. tuberculosis, the phylogenetically closest species, which has approximately 4300 coding sequences. Owing to the obligate characteristics of the bacillus *M. leprae* and challenges using in-vivo propagation due to slow doubling time (14 days), limited experimental evidence is available on either the functional annotation of the genome or structural features of the encoded proteome in the public databases for *M. leprae*.

In our laboratory, Dr Sundeep Chaitanya, Dr Asma Munir and Modestas Matusevicius are structurally characterising protein targets in *M. leprae* that are essential for cell wall synthesis, replication and transcription. They have modelled the protein structures using homology-based methods such as Modeller – developed in our laboratory - from the structures of orthologues in other cultivable mycobacterial species as well as more distantly related homologues. We are using structure-guided fragment-based approaches to design drug-like molecules to inhibit their function and check for functional inhibition.

I will also review our computational approaches, using both statistical (SDM) and machine learning (mCSM) methods to understanding the impacts of mutations on ligand binding in drug resistance. These have led to new ideas about repurposing and redesigning drugs.

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#P-06

MONEY MATTERS: PRIORITIES IN LEPROSY RESEARCH FUNDING

Research Priorities in Leprosy (by LRI & GPZL) Session Abstract

The Leprosy Research Initiative and the Global Partnership for Zero Leprosy will host a plenary session at the 21st International Leprosy Congress to promote understanding of the leprosy funding landscape. We aim to encourage and facilitate a transparent conversation about research and research funding. Leaders from organizations supporting leprosy research will join us to offer a transparent look at how they have allocated money for research over the past five years. After each speaker, we will share the organizational data collected in preparation for the meeting, to demonstrate the actual direction and amount of funding. At points during the presentation, audience members will be invited to participate in real-time polling of their own experience in obtaining support for their research. This session is intended to be the beginning of a continuing discussion about research priorities and funding, to foster the collaboration that will help us reach zero leprosy together.

#P-07

ISSUES & CHALLENGES IN HIGH LEPROSY LOAD COUNTRIES: PERSPECTIVE OF INDIAN SUB-CONTINENT.

P Narasimha Rao [1], Sujai Suneetha [2]

[1] Prof. of Dermatology, Bhaskar Medical College, Hyderabad; [2] Institute for Specialized Services in Leprosy (INSSIL), Nireekshana ACET, Hyderabad 29

The Indian subcontinent has over 1.7 billion people and 22% of world population. Indian sub continents contributed 61 % of global new cases and 86% of South east Asian region cases. For leprosy, 4 countries, India, Nepal, Bangladesh and Sri Lanka are of relevance. They are part of 13 countries of the world who have reported >1000 cases in year 2019. India alone reported more than 114,451 new cases (57% of global cases). Bangladesh, Nepal and Sri Lanka reported between 1500 to 4000 new cases each. Dermatologists play a pivotal role in coordinating and delivering leprosy services in Sri Lanka.

Common challenges in leprosy faced by these four countries are: Slow reduction in New Case detection Rate over last decade, Increasing proportion of MB cases, up to 58%; Persistent high proportion of child cases (ranging from 7 to 10%) and high proportion of Grade 2 disability in new patients. In addition, Sub-national foci of high endemic districts and blocks, in difficult to reach areas and tribal populations is observed in a number of states of India.

There are many smear positive leprosy cases in the community, some of them post RFT as well as the present programme does not treat patients till smear negativity, The important risk factor for household contacts developing leprosy is having a smear positive case in the household and small number of these cases can maintain leprosy transmission in the community. Moreover, from a programmatic outlook, there are inadequate/ absent laboratory facilities for skin smears and PCR testing. This being the case there is an urgent need to look afresh as to how programmatic activities can decrease the case load and prevent transmission in the community. This calls for not just improved chemotherapy but also broad based changes in lab support for early diagnosis, identification and management of smear positive cases and importantly their follow-up for attaining the Global leprosy targets set for year 2030.

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#P-08

ISSUES & CHALLENGES IN HIGH LEPROSY LOAD COUNTRIES – PERSPECTIVES FROM AFRICA

Roch Christian Johnson

President of the International Leprosy Association

Hansen's disease, an infectious disease favored by promiscuity and poverty, is endemic among poor populations, which it further impoverishes. In 2022, 21,201 new cases of leprosy were reported by WHO in the African region, i.e. 15.1% of new cases reported worldwide. Among these new cases, 2110 paediatric cases and 3246 patients detected with grade 2 disability were reported. According to the WHO AFRO, more than 5 million people (patients and families) in the African Region are victims of the social and economic consequences of leprosy.

Thanks to Multi Drug Therapy (MDT) and the fact that this treatment is free, millions of patients have been cured. However, it is clear that some countries continue to report a high number of new cases. Several countries in the African region still notify more than 1000 cases of leprosy including Nigeria, Madagascar, the Democratic Republic of Congo to name a few. The number of paediatric cases raises questions about the still active transmission of the disease. The proportion of patients screened with visible infirmities reflects still late detection of cases. This late detection of cases is due to multifactorial causes, among which we can cite the problems of geographical, economic and cultural accessibility to the health system, but also conflict situations which slow down the deployment of control interventions. To break this vicious circle, it is necessary to develop community-based activities in line with the recent global strategy defined by the Global Leprosy Program of the World Health Organization. Interventions must therefore primarily aim to break transmission through active screening and PCT treatment and scaling up of PEP SDR, to put an end to disabilities due to leprosy but also to break down the barriers of exclusion to which patients and their families are exposed. These interventions must be deployed in an integrated approach, for example with Skin NTDs for better effectiveness and efficiency.

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21st International Leprosy Congress 2022

Faculty Abstracts

FACULTY ABSTRACTS

#F-01

LEPROSY: ERADICATION, ELIMINATION OR CONTROL

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Global leprosy situation today is facing some immediate obstacles and some long-term issues. Covid-19 pandemic from Dec 2019 onwards has forced countries to utilize all the health manpower diverting them to the management and containment of the pandemic. This has certainly affected leprosy elimination activities as can be seen for some spurts in case detection after the pandemic is now easing out and also the rise in the disabilities in the new cases.

The perpetual problem of stagnation of case detection levels calls for a careful review of the entire situation. Several factors are considered to be responsible, viz. operational factors, disease epidemiology, pressure of target achievements, missing millions etc. Of the approved interventions such as Post Exposure Prophylaxis and Uniform therapy for leprosy cases, 6 months for PB and 12 months for MB are not getting implemented.

There are some newer opportunities like vaccine trials and clinical trials that could be planned as multi-centric studies.

There is a need to look at this overall situation in a disparate manner. The emerging observations will have to be disseminated amongst all the stakeholders for a brainstorming. We have to own the errors in our judgment of the situation and the actions that have been taken up so far. Leprosy control program has learnt the importance of coalitions and also the need to activate them again. We have to put in place the mechanisms for mid term evaluations and corrective actions and thus for the flexibility for appropriate interventions.

Leprosy Elimination activities are now at a crucial stage. There is a need to act promptly and avoid development of fatigue creeping up in the program. Political will is still strong, but this time window may not continue over infinite time.

#F-02

LEPROSY IN PREGNANCY: MANAGEMENT ISSUES

Cynthia Ruth Butlin

The Leprosy Mission England & Wales

Introduction: Whilst pregnancy is common in leprosy- affected women of child-bearing age, leprosy is uncommon amongst pregnant women, so obstetricians or midwives need guidance on managing leprosy-affected women during pregnancy. With little evidence-based guidance available, expert opinion determines "best practice". Community-based epidemiological studies on risk of reactions during pregnancy are needed, as well as clinical trials on treatment and expected outcomes for pregnant women who experience leprosy reaction.

Major issues: Three potentially-overlapping groups will be considered in the light of current knowledge and need for further research: 1. uncomplicated "leprosy cases" (those who need MDT) who are already, or become, pregnant; 2. pregnant women at high risk of leprosy reaction; 3. women already disabled by leprosy before pregnancy.

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Safely controlling infection in Leprosy cases: Generally, MDT is not contra-indicated during pregnancy but folic acid supplementation is desirable with dapsone. There is no need for other intervention to prevent congenital leprosy in neonates.

Safely controlling immunological inflammation in Reaction cases: Standard courses of steroid therapy are probably as effective for reducing symptoms & preventing new impairments as in non-pregnant women, however pregnancy is associated with higher risk of adverse effects of steroids. Some immunosuppressive drugs are teratogenic. For ENL, high dose clofazimine can be considered. Young women diagnosed with leprosy should be warned about risks of reaction during/after pregnancy.

Whole-person care for Disability cases: Women with pre-existing physical impairments need a review, including consideration of pregnancy-related weight & gait changes affecting risk of trophic ulceration in sensory-impaired feet. Those with visual or manual impairment likely to hinder childcare, will need advice on mitigation (eg surgery, aids & appliances or personal assistance)

Conclusion: Complications of leprosy during pregnancy present a complex situation which requires shared care involving obstetrician/midwife, leprosy staff, and the patient's family. More research is needed to inform management guidelines.

#F-03

IS STIGMA DECREASING IN PROPORTION TO THE DECLINE IN LEPROSY?

Patrícia D. Deps

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Stigmatization can damage the well-being of persons affected by Hansen's disease (HD), yet formal recognition of stigmatization as a violation of human rights is a relatively recent development. Unlike epidemiological indicators for HD, societal levels of stigma cannot be quantified and therefore, reduction in the number of new cases of HD maybe cannot be correlated with a reduction in HD-related stigma. Stigma was identified by WHO as an obstacle to the elimination of HD, and it can negatively affect early diagnosis, particularly if people are reluctant to present for assessment.

Stigma is classified into four domains: individual stigma, stigmatization by healthcare workers, institutional stigma, and structural stigma. Factors that have reduced HD-related stigma include access to treatment and cure, a decrease in the number of people with HD-related disabilities, changing the name of the disease (in some countries), the fight against discriminatory laws, and better health education. These have brought about a change in behaviour towards the disease.

HD-related stigma carries a potential for harm that is sometimes underestimated by public health policy makers. In 2010, the United Nations General Assembly endorsed principles and guidelines for the elimination of discrimination against persons affected by Hansen's disease and their family members. Adopting a human rights-based approach is necessary to motivate public and private interventions in Hansen's disease stigmatization beyond the predominant medical and charitable models.

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#F-04

NEW FACE FOR LEPROSY "A POSITIVE IMAGE"

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The New Face for Leprosy project aims to reduce the stigma associated with leprosy by showing people affected by leprosy leading normal lives with jobs, families and interests. We interviewed affected people in Ethiopia. The people have a message of hope "do not despair, leprosy is curable". They had positive stories to challenge the negative notions of having leprosy. People affected by leprosy often have their photos published without their stories. The photographs and stories of people in Ethiopia and India have been published, we have given lectures and exhibited photos in London. We set up a website to promote the idea and for patients to have better places to go for images and Information. https://newfaceleprosy.com/.

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#F-05

DAPSONE HYPERSENSITIVITY SYNDROME - APPROACH TO DIAGNOSIS AND PREVENTION

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Although leprosy has been controlled as a severe public health problem in China since the year 2000, the life threating side effect-the dapsone hypersensitivity syndrome (DHS)-secondary to leprosy treatment has never been eliminated. According to a survey, the incidence of DHS was 1.0% and the mortality was 11.1% among leprosy patients with DHS between 2006 and 2009.Therefore, the management of DHS was prioritized as a national schedule. Firstly, we developed Elispot and LTT assay in vitro to confirmed the culprit drug and then we carried out an international collaboration research, discovering HLA-B*13:01 to be a genetic marker of DHS in 2013. The finding has been verified in Thai, Indian, Korean, and Indonesian population subsequently. In order to examine the preventive efficacy of prescreening test for HLA-B*13:01, we conducted a prospective cohort study from 2015 to 2018 in 21 provinces throughout China. A total of 1,539 patients with newly diagnosed leprosy were enrolled who had not received dapsone previously. After excluding patients who had a history of allergy to sulfones or glucose-6-phosphate dehydrogenase deficiency, 1,512 individuals underwent HLA-B*13:01 genotyping. Among these patients, 261 were identified as carriers of the HLA-B*13:01 allele who will not take dapsone according to research schedule. All the patients who receive dapsone were followed up weekly for the first 8 weeks to monitor adverse events. DHS did not develop in any of the 1251 patients with HLA-B*13:01 negative who received dapsone. Conclusion: Prospective HLA-B*13:01 screening and use alternative drug of dapsone for patients with HLA-B*13:01 positive can eliminate the onset of DHS in Chinese population.

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#F-06

RISING AMR IN LEPROSY: A MATTER OF CONCERN FOR INDIA!

Rashmi Jindal

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WHO Global Leprosy strategy 2021-2030 "towards zero leprosy" aims for a leprosy-free world with an emphasis on early and adequate treatment. Number of new cases reported from 118 countries in 2019 was 202256. India, Brazil and Indonesia collectively contributed 79% of this total burden. Indian figures for the year 2019-20 state an annual case detection rate of 8.13 per 100000 population with 1,14,451 new cases detected. At the national level, substantial work is done to detect cases early and treat them in time to decrease disease transmission. However, an additional problem that appears to emerge is anti-microbial drug resistance (AMR) to anti-leprosy drugs especially rifampicin.

Emergence of drug resistance in infectious diseases poses a grave threat especially when secondary prevention or treatment is the mainstay of therapy. Dapsone was used as mono-therapy before 1980's and its resistance was reported as early as in 1960. A landmark step that helped control the global burden of leprosy was institution of multi drug therapy (MDT) by World Health Organization (WHO) in 1981. Rifampicin forms the backbone of MDT therapy and thus surveillance for its resistance is essential and should be done periodically. There have been reports of development of AMR to rifampicin from various parts of the world including India. In the event of such resistance, fluoroquinolones (FQ) are used as the second line drugs. Unfortunately, FQ resistance also appears on the rise. Clofazimine resistance is rare, however it cannot be used as a mono-therapy.

Identifying and treating the leprosy cases having resistance to anti-leprosy drugs effectively is the need of the hour to break the chain of transmission of resistant bacteria in the community. The talk will focus on the data available from India regarding AMR to leprosy drugs.

#F-07

LEPROSY - LESSONS FROM TUBERCULOSIS

Warwick Britton

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Leprosy and Tuberculosis have much in common besides being caused by mycobacteria. Both cause chronic infections, often with a long preclinical phase, provoke a cellular immune responses, the balance of which contributes to either protective immunity or immunopathogenesis, and both require prolonged courses of antimicrobials to eradicate the infection. Importantly both diseases have profound social and economic impacts, both on the individual and communities affected by leprosy and tuberculosis. There have been a number of developments in the management and control of tuberculosis that have implications for leprosy. These include the development of rapid, sensitive and specific diagnostic tools to detect drug sensitive and resistant Mycobacterium tuberculosis and the application of genomic sequencing to understand the

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transmission of TB. There is increasing recognition of the importance of active case finding, including enhanced contact investigation in high risk groups, for controlling tuberculosis in high-burden settings. In prevalence surveys, up to 50% of subjects with microbiologically confirmed active TB are asymptomatic but infectious, contributing to community transmission. After a long period of without any new anti-mycobacterial drugs, three new anti-TB drugs have recently been registered, and combinations of these with repurposed drugs developed to treat multi-drug resistant tuberculosis. The potential for shortening the length of drug therapy is being explored. Finally the efficacy of the M72 subunit TB vaccine and BCG revaccination in clinical trials has encouraged the development of more effective vaccines to contribute to the control of tuberculosis.

#F-08

AUTOCHTHONOUS LEPROSY - EPIDEMIOLOGICAL IMPLICATIONS

Paul Fine

London School of Hygiene and Tropical Medicine

Autochthonous leprosy, properly defined as clinical leprosy attributable to locally acquired infection, raises a variety of important issues.

Though easily defined in theory, it may be difficult to confirm in practice, because of the long incubation period of the disease and the difficulty of recalling exposures in the distant past. WHO now equates "non-autochthonous leprosy" with leprosy in the foreign born; but this is problematic, as an individual may be infected after travelling to another country, and become a foreign-born autochthonous case!

The latest Global Leprosy Strategy includes a target that the number of countries reporting "zero new autochthonous cases" should increase from 50 to 120 by the year 2030. Let us hope that this does not raise definition problems, as surveillance quality is likely to decline, and there may be political pressures to achieve such a target.

These issues distract attention from the important question of why autochthonous disease apparently no longer occurs in some countries, eg in northern Europe. The fact that there have not been any secondary cases recognised in the UK since 1954, despite the presence of numerous multibacillary immigrant cases, exemplifies this. It is not known whether this absence is because infection transmission does not occur in some environments, or whether some contacts do become infected but for some reason do not progress to clinical disease. These are fundamental questions with implications for control. This presentation will propose a multicentre study comparing contact relationships, immunological status and disease risks among contacts of multibacillary cases in endemic and non-endemic countries. If rigorously performed, with standardised protocols, such a study would contribute importantly to our understanding, and ability to control, this infection and disease.

#F-09

LEPROSY IN AFRICA: CHALLENGES IN THE LAST MILE

H Joseph Kawuma

ILA (current VP for Africa), WHO (member of Expert Committee on Leprosy), DAHW Uganda Country Office (part-time Medical Advisor)

The African Region (AFR) accounts for at least 10% of all new leprosy cases reported globally over the last 10 years. I will define the last mile as the period beginning now to 2030 and beyond. The challenges anticipated,

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many of which are not peculiar to Africa, are aligned to the issues addressed by the Zero Leprosy Strategy whose goal is elimination of leprosy.

Political commitment that should, among others, translate into increased domestic funding for the remaining core interventions, will be harder to attain.

Leprosy Programme management in the integrated health system will be more challenging in the context with few remaining cases.

Diagnostic and patient care services have to be re-oriented to embrace up-coming molecular biological (laboratory) tools for confirming diagnoses and guiding decisions on appropriate treatment regimens. The foreseeable challenges in connection with the reawakening of contact management lie in the quality of its implementation in terms of, among others, ethical considerations and inculcating into community health workers the sensitivity to stigma.

While there is no immediate threat to availability of free-of-cost medicines, the problem in Africa may be of managing supply chains.

There may be concerns about anti- microbial resistance and the potential challenges with effectiveness of current regimens for treatment and prophylaxis.

The global challenge of efficient use of existing knowledge to deal effectively with leprosy reactions and other complications coupled with the current paucity of leprosy related surgical skills will spill over into the last mile.

There are many emerging human rights initiatives in Africa, but few focus on persons affected by leprosy.

Additional resources will be required for research to guide the selection of interventions for addressing the many challenges and to hasten the journey towards attaining the zero leprosy status.

#F-10

ROLE OF HISTOPATHOLOGY IN EARLY DIAGNOSIS AND IMPROVED CARE IN LEPROSY

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Leprosy is chronic infectious disease caused by Mycobacterium leprae. Leprosy patients especially those in lepromatous leprosy spectrum are the main source of infection. Early diagnosis and treatment is essential to prevent further spread of the disease.

Histopathology plays an important role in the diagnosis of early lesions of indeterminate leprosy and some tuberculoid leprosy cases. Vague ill defined hypopigmented patches with no or very minimal sensory loss and without any clinical complaint are difficult to diagnose without the help of histopathology.

Tissue changes due to *M.leprae* starts in deep dermal nerves. Histopathology of skin biopsy shows disorganised way of Schwann cell proliferation with peri and intraneural lymphocytic infiltration and presence of *M.leprae* in Schwann cells in occasional cases. Epitheloid cell granulomas are not yet formed. In some cases the tissue response to *M.leprae* is very minimal. In such cases the diagnosis is made in association with clinical findings.

M.leprae is the only bacteria which can enter and destroy the peripheral nerves producing sensory loss. Plantar ulcer is the common complication of anaesthetic feet. Prolonged walk, field work or accidental

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injuries produce ulcers. When they are secondarily infected by other bacteria results in acute inflammation, which when not treated, destroy tendons and bones. Many patients live with chronic ulcers for long time.

Chronic ulcers can transform into malignant ulcers due to prolonged local tissue irritation. Malignant transformation can be suspected when the ulcer is growing fast and bleeds on touch. Ulcer biopsy and histopathological examination can confirm the diagnosis. If malignancy is diagnosed early local excision and grafting or excision of only part of the foot can be done without amputation and the foot can be saved.

#F-11

ESTRATÉGIAS INOVADORAS PARA ENFRENTAMENTO DA HANSENÍASE NO BRASIL (INNOVATIVE STRATEGIES TO FACE HANSEN'S DISEASE IN BRAZIL)

Gerson Fernando Mendes Pereira

Ministério da Saúde – Brasil (Ministry of Health, Brazil)

O Ministério da Saúde do Brasil tem envidado esforços para o diagnóstico precoce da hanseníase, objetivando interromper a cadeia de transmissão. Em 2022, o país inovou ao implantar três testes: um imunocromatográfico para deteção rápida de IgM, outro para deteção de *M. leprae* por biologia molecular, ambos para apoio ao diagnóstico, e o terceiro teste para deteção de genes associados à resistência antimicrobiana. Todos já integram a diretriz clínica aprovada pela comissão de avaliação de tecnologias em saúde do país. Além disso, iniciativas como: inquérito nacional sobre incapacidades físicas pós-alta, vigilâncias da resistência e incapacidades físicas, modelo matemático para predição de casos e por fim, o Brasil está se preparando para ser autossuficiente na produção dos medicamentos para a PQT.

English Version:

The Brazilian Ministry of Health has made efforts for the early diagnosis of Hansen's disease, aiming to interrupt the transmission chain. In 2022, the country innovated by implementing three tests: an immunochromatographic test for the rapid detection of IgM, another for the detection of *M. leprae* by molecular biology, both to support diagnosis, and the third test for the detection of genes associated with antimicrobial resistance. All are already part of the clinical guidelines approved by the country's health technology assessment committee. In addition, initiatives such as: a national survey on post-discharge physical disabilities, surveillance of resistance and physical disabilities, a mathematical model for predicting cases and, finally, Brazil is preparing to be self-sufficient in the production of drugs for MDT.

#F-12

DESENVOLVIMENTO DAS CAPACIDADES PARA O CONTROLO DE LEPRA E MOÇAMBIQUE (CAPACITY BUILDING FOR LEPROSY CONTROL IN MOZAMBIQUE)

Francisco Guilengue

Ministério da Saúde, Moçambique (Ministry of Health, Mozambique)

Introdução: Moçambique é um país Africano endémico da lepra. Em 2008 declarou a eliminação quando atingiu a prevalência de <1/10.000 habitantes e desde então, a busca ativa de casos reduziu. Consequentemente, novas infecções e deformidades de grau 2 aumentaram, incluindo em crianças.

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Para melhorar as actividades comunitárias, estão a ser capacitados Agentes Polivalentes Elementares (APEs), pessoas afectadas pela lepra organizadas em grupos de auto-cuidados (Self-care group) e Activistas (voluntários), para participarem nas actividades de busca ativa principalmente nas zonas endémicas.

Resultados: Em 2015, o país reiniciou a busca ativa dos casos com apoio das comunidades, assim como os grupos de autocuidado e voluntários, o que tem resultado na identificação de mais zonas endémicas anualmente, tendo passado de 23 distritos endémicos identificados em 2015 para 64 em 2021.

A taxa de detecção aumentou de 1.200 casos novos registrados por ano até 2015, para mais de 3.000 casos em 2021.

Infelizmente ainda continua a se diagnosticar uma média de 18% anualmente de casos com DG2 nos últimos 5 anos e uma média de 9 à 10 % dos casos novos são em crianças e alguns também com algum grau de deformidade grave, o que agrava ainda mais o futuro destas que crescerão com extrema dificuldade e perpetuará a sua pobreza.

Conclusão: Para o controlo da Lepra em Moçambique, a busca ativa de casos, a formação de técnicos para rastreio, diagnóstico e tratamento precoce dos casos, devem ser mantido, bem como uma maior disponibilidade de medicamentos (MDT), assim como a mobilização de apoios técnicos e financeiros nacionais e internacionais, o apoio na reintegração dos pacientes nas suas comunidades e comprometimento político a todos os níveis.

English Version:

Introduction: Mozambique is a leprosy endemic African country. In 2008 it declared elimination when it reached a prevalence of <1/10,000 population and since then, the active case finding has reduced. Consequently, new infections and grade 2 deformities increased, including in children.

To improve community activities, Elementary Polyvalent Agents (APEs), people affected by leprosy organized in self-care groups and Activists (volunteers) are being trained to participate in active search activities mainly in the areas endemic.

Results: In 2015, the country restarted the active search for cases with the support of communities, as well as self-care and volunteer groups, which has resulted in the identification of more endemic areas annually, having increased from 23 endemic districts identified in 2015 to 64. in 2021.

The detection rate has increased from 1,200 new cases reported per year until 2015, to over 3,000 cases in 2021.

Unfortunately, an average of 18% of cases with G2D annually continues to be diagnosed in the last 5 years and an average of 9 to 10% of new cases are in children and some also have some degree of severe deformity, which further aggravates the condition in future of those who will grow up with extreme difficulty and will perpetuate their poverty.

Conclusion: For the control of leprosy in Mozambique, the active search for cases, the training of technicians for screening, diagnosis and early treatment of cases, must be maintained, as well as a greater availability of medicines (MDT), as well as the mobilization of technical support, national and international financial resources, support for the reintegration of patients into their communities and political commitment at all levels.

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#F-13

SUPERAR A EXPERIÊNCIA LIMITADA E CADA VEZ MAIS RESTRITA EM HANSENÍASE (OVERCOME LIMITED AND DWINDLING LEPROSY EXPERTISE)

Liesbeth Mieras

NLR, Holanda (NLR, Netherlands)

Introdução: A especialização cada vez mais restrita em hanseníase está listada na Estratégia Global para Hanseníase 2021-2030 da OMS como um dos principais desafios no caminho para a hanseníase zero. A Federação Internacional de Associações Anti Lepra (ILEP) tem também como seu objetivo primordial na Estratégia ILEP 2021-2025 na "Estratégia global para construir e sustentar a capacidade de hanseníase". A ILEP está desenvolvendo uma solução inovadora para aliviar o desaparecimento da expertise em hanseníase.

Projeto: Num projeto de três anos, uma abordagem abrangente para superar a limitação de perícia cada vez menor em hanseníase será desenvolvida e testada em colaboração com os principais interessados: Ministérios da Saúde, institutos de treinamento, pessoas afetadas pela hanseníase e membros da ILEP. O projeto terá os seguintes componentes principais: 1) Conhecimento e recursos combinados, disponíveis em todos os países para revigorar a capacitação em hanseníase; 2) Advocacia para uma abordagem coordenada contínua e recursos para abordar a capacitação (integrada) em hanseníase; 3) Materiais, métodos e ferramentas de novos treinamentos atualizados e facilmente acessíveis e adaptáveis a contextos específicos; 4) Pilotos para testar a abordagem modernizada em vários países.

O modelo 70:20:10, amplamente aceito, diz que 70% do aprendizado vem da experiência, experimento e reflexão, 20% do trabalho com outras pessoas e 10% do aprendizado formal ou planejado. Portanto, materiais, métodos e ferramentas não devem ser desenvolvidos apenas para treinamento formal, mas também devem apoiar o aprendizado no trabalho, intercâmbio entre pares e estudo individual. Novos materiais e métodos serão desenvolvidos e disponibilizados em vários idiomas, incluindo o português.

Os países lusófonos que demonstraram interesse em testar o quadro foram Brasil e Moçambique.

Resumo: O objetivo do projeto é demonstrar o valor agregado da abordagem abrangente para deter e reverter a diminuição da especialização em hanseníase e defender um compromisso de longo prazo.

English Version:

Introduction: Limited and dwindling leprosy expertise is listed in the WHO Global Leprosy Strategy 2021-2030 as one of the major challenges on the path towards zero leprosy. The International Federation of Anti-Leprosy Associations (ILEP) also has as its first strategic goal in the ILEP 2021-2025 Strategy a 'Global framework and strategy to build and sustain leprosy capacity'. ILEP is developing an innovative solution to alleviate the disappearing leprosy expertise.

Project: In a three year project a comprehensive approach to overcome limited and dwindling leprosy expertise will be developed and piloted in collaboration with main stakeholders: ministries of health, training institutes, persons affected by leprosy and ILEP members. The project will have the following main components 1) Pooled expertise and resources, available across countries to invigorate leprosy capacity building; 2) Advocacy for an ongoing coordinated approach and resources to address (integrated) leprosy capacity building; 3) Updated and new, modern training materials, methods and tools that are easily accessible and adaptable to specific contexts; 4) Pilots to test the modernized approach in multiple countries.

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The widely accepted 70:20:10 model says that 70% of learning comes from experience, experiment and reflection, 20% from working with others, and 10% from formal or planned learning. Therefore, materials, methods and tools should not only be developed for formal training but should also be in support of on the job learning, peer-to-peer exchange and self-study. New materials and methods will be developed and made available in multiple languages including Portuguese.

Countries that have shown interest in piloting the framework are: India, Brazil, DR Congo, Bangladesh, Nigeria, Nepal, Mozambique.

Summary: The aim of the project is to demonstrate the added value of the comprehensive approach to halt and reverse dwindling leprosy expertise and advocate for long-term commitment.

#F-14

A TRAJETÓRIA E CONQUISTAS DA HISTÓRIA DO MOVIMENTO DE REINTEGRAÇÃO DAS PESSOAS ATINGIDAS PELA HANSENÍASE NO BRASIL (THE TRAJECTORY AND ACHIEVEMENTS OF THE HISTORY OF THE MOVEMENT FOR THE REINTEGRATION OF PEOPLE AFFECTED BY HANSEN'S DISEASE IN BRAZIL)

Artur Custódio

Morhan, Brasil (Morhan, Brazil)

A palestra feita em caráter expositivo e participativo visa abordar a história do Movimento de Reintegração das Pessoas Atingidas Pela Hanseníase no Brasil e nessa trajetória o enfrentamento ao estigma e a conquista de direitos das pessoas atingidas pela hanseníase nas leis brasileiras.

Por outro lado, aborda o estigma estrutural e discorre sobre a hanseníase como uma doença midiaticamente negligenciada e as diversas abordagens de comunicação e estratégias criadas pelo movimento social para enfrentar essa situação.

Parte da análise no campo da comunicação e visibilidade se utiliza do Google Trends, comparativamente entre câncer de mama, hanseníase e o termo "Lepra".

English Version:

The lecture given in an expository and participatory nature aims to address the history of the Movement for the Reintegration of People Affected by Hansen's Disease in Brazil and in this trajectory the fight against stigma and the achievement of rights of people affected by Hansen's disease in Brazilian laws.

On the other hand, it addresses the structural stigma and discusses Hansen's disease as a media-neglected disease and the different communication approaches and strategies created by the social movement to face this situation.

Part of the analysis in the field of communication and visibility uses Google Trends, comparing breast cancer, Hansen's Disease and the term "Leprosy".

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#F-15

THE RIGHT TO THE HIGHEST ATTAINABLE STANDARD OF PHYSICAL AND MENTAL HEALTH FOR PERSONS AFFECTED BY HANSEN'S DISEASE AND THEIR FAMILY MEMBERS

Alice Cruz

United Nations

In the present oral communication, the Special Rapporteur on the elimination of discrimination against persons affected by Hansen's disease and their family members, Alice Cruz, discusses the right to the highest standard of physical and mental health for persons affected by Hansen's disease and their family members. Such right is examined in the context of the: a) commodification of global health; b) historical underfunding of basic, clinical and operational research on Hansen's disease (leaving key questions about Hansen's disease and how to mitigate the suffering it causes unanswered; c) increasing tendency for Hansen's disease to lose priority at the government level that has followed the decline of prevalence (even though incidence has proved to be much harder to reduce); d) dramatic loss of expertise to diagnose and treat Hansen's disease; d) setback brought on by the Covid-19 pandemic. Angola and Brazil will be taken as case studies for analyzing the bottlenecks and challenges in the enforcement of the right to health for persons affected by Hansen's disease within national healthcare systems and legal frameworks designed for protecting the rights of people living in vulnerable situations and discriminated against. Lastly, in order to surmount existing gaps, the detail of both the content and application of this right for persons affected by Hansen's disease and their family members, as well as for persons who experience neglected tropical diseases other than Hansen's disease, will be discussed based on people-centered and action-oriented elements.

#F-16

IMPROVED DIAGNOSTIC TOOLS IN LEPROSY

Cairns Smith

University of Aberdeen, UK

The current standard diagnostic tools for diagnosing leprosy are clearly presented in the WHO Global Strategy, 2021-2023. Diagnosis of leprosy is mainly based on a clinical diagnosis. The diagnosis can be assisted by Slit-skin smears where available for some cases. PCR is useful method for both diagnosis and for surveillance of drug resistance. Serology allows detection of infection but its utility to predict disease progression is limited (1).

The development of new diagnostic tools requires rigorous evaluation involving several stages with stringent requirements at each stage (2). The evaluation must include assessment of accuracy, sensitivity, specificity, positive and negative predictive values. Implementation of new diagnostic tools can have implications for the epidemiology of leprosy and for its clinical management through over and under diagnosis, and false positives. New diagnostic tools to not automatically provide improved health care (3).

The development, standardisation, and deployment of accurate diagnostic tests for the early detection of infection and disease is a top research priority (4). Potential new diagnostic tools under investigation include molecular-based and immunological tools, nerve function and imaging, digital photographic analysis and many others.

Development of new diagnostic tools for leprosy is a priority however it is essential that novel diagnostic methods are rigorously evaluated.

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#F-17

INNOVATIVE APPROACHES IN MANAGEMENT & PREVENTION OF IMPAIRMENTS IN A TERTIARY CARE LEPROSY HOSPITAL

Sathish Kumar Paul

Schieffelin Institute of Health Research & Leprosy Centre, Karigiri

Innovative approaches are and has to be indispensable in the management and prevention of impairments, deformities and plantar ulcers in leprosy. At a tertiary centre in India, innovative ways had been tried and used to prevent and manage impairments and disability. The innovative approaches adapted by the centre are elaborated in this abstract.

With self-care routine being a challenge for patients with anaesthetic feet and ulcers, mobile phones and toll free calls were used to improve adherence. Newer designs were tested using computer based simulation studies to test efficacy in offloading an ulcerated or anaesthetic foot. The simulation studies helped in developing an ideal prototype for offloading the foot.

The peak plantar pressure is one of the key factors causing ulcers in anaesthetic feet. Identifying the peak plantar pressures using tactile sensory insoles in real time has helped in reducing the plantar pressures and also in the providing a biofeedback for individual leprosy affected patients. The peak pressures that were identified were also helpful in developing customised insoles using a 3 dimensional computer aided designing and fabrication of insoles.

Virtual cloud based data management designed and developed by the institute has helped in the collection, storage and retrieval of patient data both by the health workers and patients from any geographical locations.

The innovative cost effective approaches designed and developed by the institute have helped in real time patient care. The approaches if further tested, adapted and tried would help in making the leprosy care more viable and cost effective.

#F-18

INCREASING THE SOCIAL CAPITAL OF PERSONS AFFECTED BY LEPROSY AND RELATED NTDS - A WEST AFRICAN PERSPECTIVE

Deborah Mensah

Program Director, American Leprosy Missions

Social capital has many definitions but it can be considered the " glue" that holds society together or "specific benefits that flow from the trust, reciprocity, information, and cooperation associated with social networks»(Sander and Lowney). Persons affected by leprosy and other Neglected Tropical Diseases (NTDs) often have limited access to the networks that contribute to increasing social capital due to the highly

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stigmatizing nature of these diseases and the associate exclusion from beneficial network platforms and relationships. More research is required to add to the evidence base on interventions that can lead to an increase in the access to social capital by persons affected by NTDs. American Leprosy Missions (ALM) is planning and already piloting several projects in Cote d'Ivoire and Ghana related to building social capital for persons affected by leprosy and other related NTDs. These projects focus on using faith leaders, peer mentorship and community-based platforms to increase awareness about NTDs, improve access to leprosy/NTD health services and provide critical linkages to community networks with a goal increasing social capital and improving health. These projects are in the early stages of planning and or implementation but are showing some promising preliminary outcomes.

#F-19

LEARNING FROM SUCCESSES, LOOKING BEYOND 12 MONTHS MDT

Joel Almeida

Public Health Consultancy

Declines of 16% to 40%/year in the incidence rate of MB (multibacillary) HD (leprosy) were achieved in some low income areas. Widespread stagnation prevailed elsewhere. Even the formerly successful areas lapsed into stagnation when critical actions were omitted.

About 30% of LL (lepromatous) HD patients show persistent genomically-linked anergy to *M. leprae* or lepromin. Ten million viable bacilli per day were reported in nasal discharges of patients with recurrent LL HD. A sub-district reported more than 300% increase in the incidence rate of HD within 3 years, apparently due to delayed diagnosis and inadequate treatment of LL HD. Children newly joining the household of a previously treated patient showed an increased risk of HD. Contacts of previously treated patients showed up to 32-times increased risk of HD compared to the general population. Recurrence rates of LL HD are associated with the local incidence rate of HD, more consistent with reinfection than endogenous relapse.

Successful projects were distinguished by use of both:

Expert skin camps for all conditions, backed by smear microscopy, enabling prompt diagnosis of LL HD patients who often lack skin patches or nerve enlargement, and

Prolonged anti-microbial protection for LL HD patients (eg., until smear negativity), protecting against reinfection.

These actions contributed importantly to the 16 to 20%/year decline observed in the incidence rate of MB or LL HD. 40%/year decline was enabled by the addition of mass multi-drug administration in high endemic zones, using rifampicin + ofloxacin + minocycline.

The WHO guidelines state: "it may be advisable to treat an MB patient with high BI for more than 12 months, taking careful consideration of the clinical and bacteriological evidence". This advice seems critical for >16%/yr decline in MB HD incidence rate. Adding mass multi-drug administration in high endemic zones enables 40%/year decline. Success could be widespread.

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#F-20

ATYPICAL PRESENTATIONS IN HANSEN'S DISEASE

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Hansen's disease is characterised by a spectrum of cutaneous lesions and peripheral nerve involvement which have been well delineated through the years. Clinical features along with immunological and pathological features form the basis of the widely used Ridley-Jopling classification. However, Hansen's disease can manifest in unusual forms as well. These include atypical morphology of cutaneous lesions, involvement of anatomical sites not known to be commonly affected and varied patterns of neural involvement. These varied forms can occur as presentations of the disease itself or may be evident during a lepra reaction. Awareness of such clinical forms is important in regions endemic for leprosy. Or else there may be undue delay in diagnosis and treatment which can amount to undesired complications especially when associated with neuropathy. This session will showcase patients of Hansen's disease with unusual manifestations and give a brief overview of cases reported in literature.

#F-21

HOST-RELATED LABORATORY PARAMETERS FOR LEPROSY REACTIONS

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Leprosy reactions are acute inflammatory episodes that complicate the course of a Mycobacterium leprae infection and are the major cause of leprosy-associated pathology. Two types of leprosy reactions with relatively distinct pathogenesis and clinical features can occur: type 1 reaction, also known as reversal reaction, and type 2 reaction, also known as erythema nodosum leprosum. These acute nerve-destructive immune exacerbations often cause irreversible disabilities and deformities, especially when diagnosis is delayed. However, there is no diagnostic test to detect or predict leprosy reactions before the onset of clinical symptoms. Identification of biomarkers for leprosy reactions, which impede the development of symptoms or correlate with early-onset, will allow precise diagnosis and timely interventions to greatly improve the patients' quality of life. Here, we review the progress of research aimed at identifying biomarkers for leprosy reactions, including its correlation with not only immunity but also genetics, transcripts, and metabolites, providing an understanding of the immune dysfunction and inflammation that underly the pathogenesis of leprosy reactions. Nevertheless, no biomarkers that can reliably predict the subsequent occurrence of leprosy reactions from non-reactional patients and distinguish type I reaction from type II have yet been found.

Keywords: leprosy, leprosy reactions, T1R, ENL, correlates.

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#F-22

MIGRATION & LEPROSY CONTROL - CHALLENGES & POSSIBLE APPROACHES

John Kurian George

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India has made significant strides in reducing the burden of leprosy. It has reduced the prevalence rate from 57.8/10,000 in 1983 to its "elimination as a public health problem" of less than 1/10,000 in 2005. Besides achieving the national elimination target, India, as per findings from a mid-term evaluation, achieved elimination at the state level in 34 states/Union Territories (UTs) out of the total 36 states/UTs. Despite this success, India continues to account for 60% of the new cases of leprosy reported globally each year. The annual reports of the last four years of the National Leprosy Eradication Programme (NLEP) have consistently observed that four states/UTs viz. Orissa, Chandigarh, Delhi, and Lakshadweep, which had achieved elimination earlier in 2011–2012, have shown a prevalence of >1 per 10,000 population. At the district level, by March 31, 2019, 588 districts out of 708 districts in India had achieved a prevalence rate of less than 1/10,000 with the balance districts being highly endemic.

This secondary research study has examined the linkages between migration and leprosy patients in India. It has examined the policy framework and paucity of disaggregated data pertaining to migration and the resurgence of leprosy cases in the erstwhile leprosy free areas and districts, which concerns the public health initiatives.

The study informs areas in which primary research need to be initiated to completely eradicate leprosy and prevent any recurrence. Practical policy responses that can be adapted from two successful health programme initiatives, viz., HIV/AIDS programme and tuberculosis initiatives have been examined and described in the study. Further, the trends of migration, especially seasonal and circular migration from the source states to destination states, needs to be examined.

#F-23

DECLINE OF LEPROSY IN JAPAN - LESSONS LEARNT

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In ancient Japan, many leprosy patients were wandered around and eventually lived in towns, rural area, and their colonies with other untouchables. In 1868, westernization and civilization were introduced. However, the most of leprosy patients gathered in Buddhism temples as beggars. In 1897, the first International Conference for Leprosy was held in Berlin, in which resolutions leprosy had just been recognized as an infectious disease and endorsed forced segregation as a means of prevention. Its report much influenced to policy-makers of the public health in Japan. In 1900, the first national surveillance of leprosy was performed by police officers in the Ministry of Internal Affairs and it reported that number of patients was 30,359 (6.92 per 10,000 population). In 1907, Act on Leprosy Prevention was passed. The Act stated that not all but floating patients without means of support by their family could admit to 5 public leprosaria, which have total 1,000 bed capacity. Subsequently, the government strengthened the policy toward leprosy elimination, including establishment of the national leprosarium, expansion of existing leprosaria. In 1931, Act on

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Leprosy Prevention was revised, which allowed all patients to be hospitalized without any financial burden levied on their families. The policy of leprosy control shifted from patient protection to social defense. In 1940, number of registered patents was 15,763 (2.16 per 10,000 population), and 9,190 patients were hospitalized. After WWII, promin became available in Japan. Then, Leprosy became a curable disease and cured patients were discharged. While lots of new patients admitted to leprosy hospitals because general hospitals did not accept leprosy patients by fierce opposition from local resident. In 1953, the Leprosy Prevention Law was revised, in which isolation policy to patients proven to have bacilli was maintained. In 1960s, implementation of the Law was relaxed and the policy had substantially changed into long-term care for disabled and/or aged cured patients in leprosy hospitals. New cases of leprosy began to decrease in accordance with progress of chemotherapy and improvement of hygiene. In 1975, number of registered patents was 10,199 (0.91 per 10,000 population) and new case was 83. In fact, isolation policy for leprosy in Japan is prolonged than scientific knowledge justified. However, in harsh public sentiment, the relationship between stakeholders and policy-makers is too complicate to address the possible best practice.

#F-24

ADVANCES IN MYCOBACTERIUM LEPRAE MOLECULAR VIABILITY ASSAYS (MVA)

Linda B. Adams

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Although being documented as the causative agent of leprosy nearly 150 years ago, Mycobacterium leprae has yet to be cultivated axenically in microbiological media. In cell culture systems, *M. leprae* viability can be maintained for a few weeks, but bacterial multiplication has not been definitively achieved. Thus far, *M. leprae* has only been experimentally cultured in animal models, particularly the mouse footpad and the nine-banded armadillo, and cultivation requires several months due to the slow growth rate of the organisms. Consequently, this inability to culture *M. leprae* ex vivo has impacted all aspects of leprosy research.

Numerous histological and biochemical assays have been developed over the years as alternate measures of *M. leprae* viability. More recently, molecular-based assays have proven to be effective viability indicators, having been validated by the mouse footpad assay. The advantages of molecular viability assays (MVA) include simple fixation and storage protocols, which make collection procedures inexpensive. Moreover, the fixed samples can be easily transported to the laboratory at ambient temperatures for processing. No isolation of the bacilli is required as DNA and RNA can be purified from tissue specimens, including leprosy biopsies. Molecular assays enable both enumeration of the bacilli as well as viability determination on the same specimen. MVA are highly specific, sensitive, and quite rapid. A disadvantage to molecular-based assays is the requirement for sophisticated and rather expensive reagents and equipment. However, the technology is becoming increasingly available in reference laboratories worldwide.

The expeditious assessment of *M. leprae* viability by molecular methods has great potential for many clinical and experimental applications. MVA could aid the monitoring of treatment efficacy, the surveillance for drug resistance, the detection of leprosy relapse cases, and the evaluation of experimental and clinical drug trials.

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#F-25

THE SEARCH FOR NEWER DRUGS FOR LEPROSY

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Abstract Leprosy treatment is a prolonged, at least 6-12 months, multidrug therapy, which complicates compliance in many patients for various reasons. Inadequate treatment can lead to relapse and selection of antibiotic resistance. Drug resistance in leprosy is not yet a public health crisis, but there appears to be an emerging risk, especially in endemic countries. Mycobacterium leprae being an extremely slow growing organism may take longer than usual to establish drug resistant strains. Prolonged treatment regimens can also increase the risk of adverse drug reactions, especially in patients with comorbidities. In addition, the nine-banded armadillo is now an established zoonotic reservoir in the USA, and recent reports of *M. leprae* infection in the Scottish red squirrel populations raise the possibility of occult environmental reservoirs, and consequently, modes of transmission other than human-to-human. Since many countries are abandoning active case finding, which helps in early detection, due to associated cost and low prevalence rates, blocking transmission is becoming largely dependent on effective therapeutic interventions. Therefore, from a leprosy control standpoint it is time to expand our anti-leprosy drug arsenal as there is a clear need to search for new sterilizing, rapidly-acting drugs that will be effective and shorten treatment duration. Using our unique resources at the NHDP, which include a regular supply of viable *M. leprae*, years of experience with various viability assays for *M. leprae*, and the mouse foot pad assay in both conventional and immunosuppressed mice, we have developed a drug evaluation pipeline to screen bactericidal compounds against *M. leprae*. We have successfully evaluated compounds from the global tuberculosis drug discovery program, identified promising new antileprosy drugs, and provided the needed evidence along with supporting data for determining effective dose and treatment duration for future clinical trials.

#F-26

ROLE OF DERMATOLOGIST IN LEPROSY CONTROL PROGRAM IN SRI LANKA

Chandani Udagedara

President Sri Lanka College of Dermatologists

The written history of Leprosy in Sri Lanka dates back to the Dutch era in the eighteenth century. During Dutch rule, Leper Asylum was constructed in Hendala. Segregation of leprosy patients was made compulsory in 1901 by the British Government. Anti -Leprosy Campaign was established with the assistance of WHO in 1954 under the Sri Lanka Health Department. It was established as a centrally controlled body to plan, implement, coordinate and evaluate leprosy control activities in Sri Lanka. Anti Leprosy Campaign consisted of the Director, Medical officers, and 25 designated PHI for each district. Under the administration of ALC, there were 2 leprosy Hospitals at Handela and Manthiv, Cental Leprosy Clinic and a few clinics in the main cities. Central clinic and other clinics collaborate with Dermatologists in carrying out the diagnosis and treatment while PHIS was assigned to conduct clinics at the village level, contact tracing and default tracing and rehabilitation.

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In 1983 Multi Drug Therapy was introduced on the advice of WHO. Compulsory admission to leprosy hospitals completely stopped after introducing MDT. Sri Lanka was able to achieve the WHO elimination target of one case per 10000 population by 1995. But the transmission of the disease had not been effectively interrupted as expected. So in 2001 leprosy control activities were integrated into General health services.

Since then, Dermatologists throughout the island play an active role in diagnosis, treatment, management of lepra reactions and drug reactions, arranging rehabilitation, and documentation. In all activities, we practice a multidisciplinary approach. Preventive measures are being taken through family screening and educational activities in collaboration with the Anti-Leprosy Campaign and the regional epidemiology unit.

#F-27

ESTABLISHMENT AND EVALUATION OF A SIMPLE DETECTION METHOD FOR RIFAMPICIN-RESISTANT MYCOBACTERIUM LEPRAE USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) METHOD TO USE IN SDR-PEP

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Introduction: Single dose rifampicin-post exposure prophylaxis (SDR-PEP) is considered one of the most effective approaches to achieve "Zero leprosy." However, SDR-PEP should not be applied to patients with rifampicin-resistant *M. leprae* that exist all over the world. This is because not only it is ineffective, but results in the active selection of resistant strains. Since conventional PCR and DNA sequencing are not suitable to be performed in the most endemic countries, we developed simple and cost-effective diagnostic method for rifampicin resistant *M. leprae* to achieve "Zero leprosy".

Objectives: To establish and evaluate a simple and user-friendly detection method for rifampicin-resistant *M. leprae* with LAMP and MinIONTM, a portable-type next generation sequencer, to be used in leprosy endemic countries.

Material and methods: LAMP primer sets were designed for drug resistance-determining regions (DRDR) of rpoB gene in *M. leprae*. DNA from Thai-53 strain of *M. leprae* and plasmids containing wild type and mutant rpoB gene were used to evaluate the method.

Results: Our LAMP method allowed successful amplification of rpoB DRDR, and MinIONTM sequencing of the amplicon confirmed the presence of known mutations causing rifampicin resistance.

Limitations: It is necessary to test the method using clinical samples in endemic countries. Conclusion: Our detection method for rifampicin-resistant *M. leprae* could be a simple and accurate tool for the detection of rifampicin-resistant *M. leprae* before administration of rifampicin. We are currently developing a much simpler method to detect all the drug resistant *M. leprae* strains. This study is supported by Sasakawa Health Foundation (SHF).

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#F-28

POTENTIAL UTILITY OF ARTIFICIAL INTELLIGENCE (AI) BASED APPROACHES FOR RAPID SCREENING AND DIAGNOSIS OF LEPROSY

Abstract of Session 'Novartis Symposium on Leprosy & AI Screening'

Despite the preventive measures to control the transmission of leprosy, around 127,558 new cases were reported across the globe in 2020, of which 14,893 were children below 14 years. (1) Detection of leprosy in early stages can prevent physical disability and permit short term therapy, as well as potentially stop transmission. However, screening of leprosy in resource poor settings is a big challenge due to the huge dependency on public health infrastructure and human resources. An artificial intelligence (AI) based screening tool can potentially reduce the financial and personnel burden for leprosy screening while increasing the penetration of screening efforts.

In this symposium, we want to call upon the experts to share their experience on:

a) The advancements made in use of AI based technology in the field of dermatology and the learnings which can be applied for building such technologies for leprosy screening and diagnosis.

b) Key learnings and findings from a study conducted in Brazil, where skin lesions captured based on leprosy diagnosis and the AI analysis conducted using the skin lesions, demographic and clinical data.

c) Key learnings and findings from diagnosing and capturing skin lesions of leprosy patients in India and the AI technique used for evaluation of the small clinical dataset

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#F-29

LUCIO LEPROSY AND IMMUNE REACTIONS

Maria T Ochoa

University of Southern California (USC) Dermatology

Patients with leprosy or Hansen's disease (HD) may develop severe immunologic reactions including reversal reaction (RR), erythema nodosum leprosum (ENL), and Lucio's phenomenon (LP). LP, the least common but potentially most severe reaction, is a necrotizing vasculopathy associated with significant morbidity/mortality risk. Previously, Mycobacterium leprae was thought to be the sole pathogen responsible for HD and all immunologic reactions. However, a novel pathogen, Mycobacterium lepromatosis, was found to cause HD mainly in Mexico, Central/South America, but also in USA, East and West Asia.

Given the significant morbidity and mortality associated with LP, early diagnosis and understanding of the clinical presentations between *M. leprae* and M. lepromatosis are necessary to provide adequate care to HD patients. Furthermore, it is important to understand whether M. lepromatosis is a risk factor for LP.

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#F-30

LEPROSY IMPAIRMENTS AND DISABILITY: HAND IN HAND, EYE TO EYE, AND STRIDE BY STRIDE APPROACHES

Robert Jerskey

Independent Practitioner

This presentation invites the attendee to a brief survey of select key facets of the dialectic of prevention and management of impairment and disability, given that prevention and management approaches can be considered inclusive of one another.

The objective of this talk, examining both through a lens directed at an accelerating 21st century narrative and that of the terrain of both affirming and cogently questioning narratives, is to stimulate the attendee to take back to their base freshly infused perspectives and pointers.

As such, this talk will touch on the following:

- Revisiting the conversation of WHO Disability Grades will be touched on towards obviating risks of further morbidities.
- Programs world-wide continue to implement their respective paradigms for sensory testing; the 2 primary tools being the ballpoint pen and graded nylon monofilaments. Further conversation here.
- The presenter will draw from his own contextual experience to share observations, strategies, and tools in prevention/management of impairments, disabilities.
- Insights into Lepra reactions - What is new?'
- Leprosy reactions are inflammatory episodes during a leprosy infection. Most of the damage is contributed to these episodes. Nerve damage seems to be correlated to Type 1 and Type 2 leprosy reactions (T1R and T2R). Lucio's phenomenon gives no nerve damage.
- In the 1970th most of the basic understanding of the immunology of T1R was elucidated at ALERT/AHRI. The treatment was established, both medical and surgical, and methods for follow-up. In the years thereafter only fine-tuning of the immunology occurred, in line with the increase in knowledge of general immunology, genetics, transcriptomics, and proteomics. The treatment had a setback after WHO and its advisors' shortened treatment. To date thanks to experienced clinicians the antigen load (classification) determines the duration again. The follow-up was enriched with improved serology (anti-PGL-1) but endangered again by the discouragement of skin smears. PCR was introduced. Clinical skills for follow-up disappeared, particularly nerve palpation, but Echo Doppler could replace it. Recently it was found that a transcriptomic signature consisting of 5 messengers RNA genes was present two weeks before the onset of T1R.
- The understanding of T2R took more time. It was understood that it was an immune-complex disease, not in the vessel wall but in the tissues and that the CMI was involved as well. The treatment with thalidomide was already introduced in the 1960Th. But soon ostracised. Only after 1998, did it become accepted again, still used in Brazil. At present, its use is allowed in more countries, because prednisolone treatment has had a disastrous effect. The use of clofazimine and methotrexate may improve the treatment further. The follow-up is the same as in T1R.

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- For Lucio's phenomenon, it was discovered that often *M. lepromatosis* was involved and that the obstruction by bacilli of postcapillary venules was the cause. The treatment is effective MDT.

#F-31

THE BIOLOGY OF NERVE INJURY IN LEPROSY

David Scollard

Pathologist and Former Director (Retired)

Nerve injury is the basis for disability in leprosy. But studying the mechanisms of nerve injury in leprosy is particularly challenging because most of the involved nerves cannot be biopsied. In skin biopsies, infection of small cutaneous nerves is regularly observed, and *M. leprae* is found within Schwann cells and intra- and peri-neural macrophages. Binding and entry of *M. leprae* into Schwann cells has been studied extensively in vitro. In vivo, the infection is accompanied by immuno-inflammatory responses that vary according to the cellular immune capability of the host, with additional immunologically-based injury during reactions. Even after *M. leprae* have been killed, intra- and peri-neural immune responses may be elicited by antigens of the dead bacilli that linger in tissues for years. High-definition ultrasound now enables more detailed assessment of thickening, edema, and blood flow in infected nerves, and hopefully applications of this tool will enhance our understanding of the underlying processes. Modelling of leprosy neuritis in the experimentally infected armadillo provides opportunities to study early events during the pathogenesis of nerve infection. This includes the assessment of functional (conduction) abnormalities as infection proceeds, as well as histological studies and the quantification of cytokine responses within infected nerves. Conduction studies of nerves during vaccine testing in armadillos has suggested that vaccination may delay and reduce *M. leprae* induced conduction abnormalities. Study of the biology of nerve injury in leprosy has lagged behind other advances in leprosy research. Now, with new and better tools, it is time to accelerate research in this field. A better understanding of the mechanisms of injury will identify new possibilities for better and earlier interventions that can limit nerve injury in leprosy and lessen the burden of disability in this disease.

#F-32

PRESENT EVIDENCE ON AMR IN LEPROSY

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Global prevalence of leprosy has been significantly reduced by the implementation of multidrug therapy (MDT). However, continued emergence of new cases between 1 to 2 million indicates that an active transmission of leprosy infection in the endemic community is still continuing. It has been noted that in spite of completion of full treatment, relapse of the disease occurs in a few leprosy patients after their release from treatment. Active leprosy cases often have been noted in defaulters (patients discontinuing full course of MDT). Hence, these relapse cases and defaulters could be sources of infection and consequently their role in transmission. Initially, it was observed that drug resistant strains are present in only relapse cases (3.6% rifampicin resistance, 8.1% dapsone and ofloxacin resistance) (Lavania et al, 2014). Soon after this, primary drug resistance for rifampicin was observed in 3 /16 patients (Lavania et al, 2015). Situation was worse when we observed resistance to all the three drugs in 2 patients out of 250 leprosy patients screened (Lavania

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et al, 2018). In addition, several reports have established the presence of *M. leprae* drug resistance strains to rifampicin in reactional cases who were refractory to routine MDT. Occurrence of drug resistance has been reported from other countries like Korea (2005), The Philippines (2007), Myanmar (2007), Indonesia (2007), Japan (2008), Mexico (2010), China (2015), Colombia (2016), France (2018) and Brazil (2020). Considering the above scenario and to fulfill the vision of "Zero" leprosy by 2030 a robust surveillance mechanism for detection of AMR has to be in place under the National Leprosy Control Programme.

#F-33

THE QUEST FOR ZERO LEPROSY: CHANCE OR CHOICE

P Krishna Murthy

Chairman, Damien Foundation India Trust, Chennai, India

Leprosy is a burden that continues to challenge the world. It is not acceptable. The case for aspiring its end is well founded.

Case detection is not the same as case occurrence. More number occur than are detected. We do not have a valid estimate, yet there is evidence for this gap provided by sample surveys, mass case detection campaign, and anecdotal evidence during field visits. Zero leprosy means zero transmission

We cannot fight the enemy without knowing it. What we know is less than what we like to but it provides some handle.

I would restrict myself to developments in India for the sake of simplicity. We could look at evolution of leprosy in four phases- pre and post elimination, Covid and post Covid (Covid as the hinge point). During pre-elimination phase even though it was full fledged the programme was subdued except for the mass case detection campaigns undertaken from 1998 to 200. Called MLEC (modified leprosy case detection campaigns) they helped bring out a total of 450000 new cases (at least 70% were cases). Elimination was achieved in 2005. With it the deceleration of the programme began. No active case detection, no dedicated staff, no smear examination, no sound bites. New case detection remained stagnant at 120000 cases a year. Active case detection was revived in 2016 which resulted in detection of 50000 new cases. Then Covid happened. In 2020, case detection fell by 43%, G2D came down by 43%, child cases by 16%. The fall is more likely to be collateral effect of measures implemented as part of Covid control. For the first time we have witnessed a drastic fall brought out not by our efforts!

What is the future? Epidemiology of Leprosy is not clear. Leprosy disappeared from countries in the Western Europe before the bacillus was discovered. This is believed to be due to socioeconomic change. We have some evidence for inverse relationship between socioeconomic status and leprosy. Several endemic countries have become low endemic in the last few years without a change in the control strategy. The common denominator is socioeconomic development.

Can we wait for this change? Yet, in the absence of an effective preventive tool (vaccine) we depend totally on case detection and treatment. This is not a potent tool. Can we reach zero leprosy with just case detection and treatment? We may not unless we are nudged by SE change.

But we should carry on, understanding and facing political, technical and operational challenges and address them to the extent possible so that we are able to make the right choices.

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#F-34

URBAN LEPROSY CONTROL: SPECIAL ISSUES

Antony Samy Amaladas

Chief Executive, Alert-India

India still has leprosy endemic geographies. Especially in the rural/tribal geographies, from where people migrate to cities in search of livelihood and better living; and mostly live in overcrowded urban slums /Juggi Jhopadies and low-income housing. This accentuates the continued urban leprosy problem.

In the past decades, the reduction was achievable through community engagement and a trained cadre of technicians. Whereas, today the urban inhabitants are no longer static and the population is in constant transition, with unique challenges with enhanced vulnerabilities due to Covid. Hence, the identification of factors hampering the success of the programme is vital. In the absence of predictability, leprosy continues to occur in unknown locations widening the knowledge gap.

Combating requires nuanced methods; use of technology for real-time data and analytics; type of disease, infectious, complications, disability, etc. Strengthening it with reliable reporting, validation, and referral systems. Which will enable us to ascertain leprosy patterns, layers, and marking clusters of transmission.

It is time to evolve a new urban leprosy control model within the public health system to guarantee affected people-centric referral facilities: for timely diagnosis, treatment, cure, and care; complications management; dependable disability prevention; dispelling social prejudice, and mental well-being.

A requisite is an urban task force with active participation and collaboration with civil society organizations, private practitioners, existing care facilities, and the public within the specific priority geographies (region / town / city, etc..). Importantly, allocation of funds for time-bound engagement ensures wherewithal for services and surveillance with a greater role for dermatologists and medical colleges – both private and public.

It is important to train and involve medical professionals, which is pivotal to ensuring clinical acumen for leprosy control in this decade. Which will prevent a TB control type of re-emergence that demands huge public resources to combat and the burden to the nation.

#F-35

ADVERSE EVENTS AND MDT: SRI LANKAN EXPERIENCE

Indira Kahawita

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MDT for leprosy has been considered fairly safe and adverse events had been a rare event in the past. But recently there is more interest on the occurrence of adverse events to MDT, especially to dapsone. Collection of data at a national level has not been routinely practiced in many countries, including Sri Lanka.

This talk is based on retrospective studies carried out at the Central Leprosy Clinic (CLC), the referral centre for leprosy in Sri Lanka over the past 3 decades.

In the 1990's only 2.33% reported adverse events in a cohort of 3333 patients at CLC. In 2009 - 11 out of 407 patients 18.5% developed adverse events and incriminating drug was discontinued in 10.5%. Both studies were carried out in the same setting. Haemolysis was the commonest and dapsone was the main

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culprit drug in both studies. Similar finding were reported from GH Polonnaruwa in 2008- 11 with 10.4 treatment changes.

During a five year period from 2016 to 2020, from a total number of 472 patients managed at the CLC dapsone related adverse events were reported in 10.38% with dapsone discontinued in 5.5%. Haemolysis (6.14%), Hepatitis (2.33%), 3. Dapsone hypersensitivity syndrome (1.27%), agranulocytosis, methaemoglobinaemia and cholestasis were the events reported. One case each of enteropathy and refusal to continue treatment due to pigmentation were reported with clofazimine.

In 2016 – 2019 period at BH Homagama treatment change was necessary in 25. 47% out of 107 patients. Serious adverse events like fatal agranulocytosis were reported frequently during this period.

2018/19 survey among 40 dermatology units revealed dapsone hypersensitivity (23), agranulocytosis (10), cholestasis (3) and methaemoglobinaemia (4) with 6 deaths.

Based on these findings a prospective pilot study in five high endemic districts for leprosy is being planned now. We aim to establish a pharmacovigilance programme for the entire country based on the findings of this study.

#F-36

HISTOID LEPROSY - IMPLICATIONS & MANAGEMENT

Vikram Mahajan

Prof & HOD (DVL), Dr. Radhakrishna Govt. Medical College, Hamirpur, HP

Histoid Leprosy is an uncommon variant of leprosy in the LL spectrum and has characteristic clinical and immunopathological features. It usually happens in patients treated with dapsone monotherapy (as in the past) or who show dapsone resistance but may occur de novo or after irregular and inadequate MDT and/or due to presence of mutant organisms. Clinically, the multiple, translucent, shiny globoid nodules are painless and firm and appear over apparently normal looking skin mimicking other fibromatous dermatoses that often hold up clinical suspicion. Histologically, it shows characteristic dense interlacing bundles of spindle shaped histiocytes arranged in storiform pattern and a high load of lepra bacilli. Delayed diagnosis, high bacterial load as reservoir of leprosy, and inconsistent therapeutic outcome remain cause of concern especially in the context of post leprosy elimination era. This makes important to know epidemiology, clinical, immunopathological and bacteriological characteristics, diagnosis, and management of this unusual variant.

#F-37

HOW CLOSE ARE WE TO FINDING AN EARLY DIAGNOSTIC TEST FOR LEPROSY?

Aparna Srikantam

Head, Research & Director – Lab, LEPRA

Leprosy elimination programme is at a juncture where each country setting has its own needs and challenges as guided by its leprosy burden. However, one thing that is common to all of them is their need for better diagnostics. Skin smear microscopy, histopathological examination and home brewed PCR are the only tests that are currently being practiced in most of the endemic countries while serological tests such as ELISAs, Lateral flow tests are still under research stage. The challenge in settings where the elimination is reaching the last mile

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is the dwindling clinical skills demanding the need for a quick to use laboratory test for early and accurate detection of leprosy. While many endemic countries are embracing for prophylactic interventions, there is no test available for diagnosing the leprosy infection. WHO NTD road map for 2021–2030 acknowledges the need for better diagnostics basing on which two target product profiles (TPP) for leprosy diagnostics, one each for diagnosis of active disease through detecting *M. leprae* and screening for leprosy infection were brought out by the WHO-NTD DTAG leprosy sub group. TPP has created a ground for developing new diagnostics and expected to support and guide for regulatory standards to make them accessible to the endemic countries. Given the most congenial environment that ever existed for new diagnostics for leprosy, researchers across the globe are developing new molecular and serological tests such as point of care RTPCR, nasal swab based tests and blood based tests. These tests have all the potential to be integrated into the leprosy control programme within the strategic timeline of the current NTD road map through coordinated efforts between the researchers, national programmes, industry and research funding agencies. Leveraging emerging technologies while developing the new diagnostics enable them to be more accessible and resource optimal.

#F-38

NEWER SURGICAL AND NON-SURGICAL APPROACHES TO MANAGEMENT OF TROPHIC ULCERS IN LEPROSY

Mannam Ebenezer

Director of Global Programs, TMTEL, Ireland

Trophic ulcers have been the bugbear of leprosy from the perspectives of non-healing as well as of social aspects of stigma. Persons affected, their families and health professionals are often at a loss on how to deal with this vexing problem. In recent times there seems to be a quiet resignation that trophic ulcers are part of lives of persons affected by leprosy.

Given the surgical and non-surgical methods available at hand presently to deal with trophic ulcers, a more positive and optimistic approach can be adopted in dealing with this problem. Success to management of a trophic ulcer lies in the twin strategy of unrelenting pursuit by person affected and health professionals towards healing of ulcer as an 'end point' and a behavior change in the life style of person affected towards its recurrence.

The preventive aspects of a trophic ulcer include an understanding of play of factors that are causative in the genesis of a trophic ulcer in one's life style – namely, sharps, pressure and temperature on insensitive hands and feet. This awareness is critical, so that needed tailor made modifications in one's life style can be adopted, to avoid above causative factors and thus prevent damage.

Interventions for treatment of complicated trophic ulcer, which by definition have infection of tendon, bone or joint, are implemented in two stages. In the first stage infected ulcer is dealt with by surgical methods and the ulcer is allowed to heal from deep within to a superficial level. Needless to say, that during post intervention period, person affected should not be weight bearing. In the second stage healing of the superficial, simple ulcer is brought about by the single most non-surgical method of 'offloading the foot' and thereby the ulcer.

Major surgical method used in healing of trophic ulcers is removing the infected parts of a trophic ulcer through drainage and debridement. Drainage should ensure that all pockets of infective collections are let out and are allowed to drain. Debridement involves removal of dead, infected tissues. Debridement should be thorough but with preservation of as much skin, soft tissue, bone and joint as possible so that foot architecture is preserved for weight bearing function. Where possible drainage and debridement can be through dorsal approach which will enable closure of plantar wound and allow its primary healing.

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Covering skin defects as a result of trophic ulcers with vascular sensate flaps or even simple flaps are essential in key areas such as heel and lateral border. The role of posterior tibial neurovascular decompression in both healing of ulcer as well as restoration of sensation is not fully established due to lack of randomized clinical trials and equivocal results even from single group studies. Outline of standard and new surgical procedures are detailed in the presentation.

There is a general perception that surgery for complicated trophic ulcers or 'ulcer septic surgery" is simple and can be done by any doctor. It has to be stressed that decision making, and surgical skills needed in dealing with trophic ulcers are very important and only doctors who are well trained persons should undertake such surgeries.

It has to be reiterated that the primary intervention in healing of a simple ulcer is 'offloading the ulcer". Ulcer dressings both chemical and biological at best keep the ulcer clean and may aid little in re-epithelialization. Offloading devices of earlier years such as plaster of Paris casts, though effective are not used commonly now. Offloading by modifications in the insole as well as undersole of footwear is being tried, but effectiveness of these has to be established. Of late, footwear with a customized insole using EVA is being tried in the healing of ulcers with results of these studies awaited.

The importance of type footwear provided after healing of trophic ulcer, life style modifications (behavior change) and self-care in prevention of recurrence of ulcer cannot be emphasized more.

#F-39

COMPARING 'QUALITY OF LIFE' IN LEPROSY WITH OTHER DERMATOLOGICAL CONDITIONS

Nilay Kanti Das

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Leprosy is a disease with tremendous social implications due to ostracization. Despite continuous efforts made so far to eliminate leprosy, stigma/misbeliefs/adverse attitude toward leprosy still prevails among common people. Community perceptions and attitudes towards leprosy patients are critical and unique indicator of how society stereotypes leprosy. Leprosy affects various aspects of life including marriage, employment and social interaction, especially with the presence of visible deformities. Stigma Scale of Explanatory Model Interview Catalogue (EMIC-SS) is being used to quantify the stigma and study in India and Indonesia have noted a score of 17.4 in leprosy. Since we are aiming for "Zero Stigma" with WHO Global Leprosy Strategy 2021–2030 is to uplift the quality-of-life (QoL) of leprosy affected individuals. It is also of paramount importance that stigma is alleviated from the society for not only leprosy but other diseases too.

Post Kala-azar Dermal Leishmaniasis (PKDL) is a common clinical mimicker of Lepromatous Leprosy and it has been documented that PKDL patients too feel the shame and embarrassment, face difficulty in arranging marriage, and they prefer stay away from social group. Median EMIC-SS was found to be 11 ranging from 2 to 25.

Vitiligo is another disease which is often referred to as "Shwet Kushtha" (white leprosy) share its own share of stigma and impaired QoL. Studies have shown that 17.3% of vitiligo patients participated minimally in domestic and social life.

Similar to Vitiligo, Psoriasis patients also face shame, embarrassment, helplessness, anger, and frustration. Studies have reported that their condition affected their careers in 35%, 14% had to discontinue careers and 20% reported substantial impairment in performing their work.

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Atopic dermatitis affects individual since their childhood to an extent that they and their parents spend many sleepless nights. It also interferes with school performance and social relationships impairing their QoL. Adult patients suffer substantial salary loss from missed work, as well as large expenditures for health-care need.

Acne is another condition which can affect the teenagers and cause significant Internalized stigma. Studies have reported that Acne Internalized Stigma Scale (AISS) was correlated their negative QoL, male gender, severity of the illness, and depression.

Thus, it is important that Information-education-communication (IEC) campaigns are required to abolish the stigma. The possibility of involving satisfied cured-patient as peer-educator to improve the attitude of society towards these diseases can be explored.

#F-40

ADDRESSING MENTAL HEALTH OF LEPROSY AFFECTED

Ashok Agarwal

Country Director, NLR India

What is mental health?

Mental health is "A state of wellbeing in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (WHO, 2014).

Prevalence of mental well-being issues among the leprosy affected

The leprosy affected are found to have a higher prevalence of mental well-being issues compared to the general community. Almost 50% of the persons affected by leprosy may suffer from depression.

Reasons of high prevalence of mental well-being issues among the leprosy affected

The life of the leprosy affected particularly with disability is full of miseries; often the living is worse than death. They are usually very poor with almost no voice. He may have ulcers in his feet which are oozing and smelling; limbs may be paralyzed; unable to move or even take his food without assistance/ assisted device; unable to work or not given a job; highly discriminated; the children often denied equal opportunities of education, employment, get married, and settling in life.

Potential solutions

- Acknowledgement of the problem We need to understand and acknowledge the problem. Tools like the Warwick-Edinburgh Mental Wellbeing, and Patient Health Questionnaire 9 items can help us identify and measure the problem.
- Address the causes of mental distress The situation of each person is different; there needs to a mechanism to understand the cause of mental distress. Often poverty with no or very limited means to survive besides the social rejection is the cause.
- Access to support Besides the access to psychiatric care; the person should have access to psychological and socioeconomic care. In fact; the latter may be more important.

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#F-41

WHO GUIDANCE ON DEFINITION, CRITERIA AND INDICATORS FOR INTERRUPTION OF TRANSMISSION AND ELIMINATION OF LEPROSY

Leprosy is one of the Neglected Tropical Diseases (NTDs) included in the group of diseases targeted for interruption of transmission. WHO constituted a Task Force on definitions, criteria and indicators for transmission and elimination of leprosy to define concepts definitions, epidemiological cut-offs, and identify programmatic criteria that need to be verified. In line with the generic framework for control, elimination and eradication phases a leprosy programme passes through to reach elimination of leprosy and continue surveillance after elimination were recommended by WHO.

After examining data sets from five countries milestones were defined for every phase of elimination of leprosy. Zero autochthonous child cases for consecutive five years is recommended as an epidemiological cut-off for a sub-national area or a country to reach the phase of 'Interruption of transmission'. After this milestone, if no autochthonous cases (all ages) are reported for three consecutive years the sub-national jurisdiction or country is considered to have reached elimination of leprosy. A period of ten years of post-elimination surveillance is suggested for countries because of long incubation period of leprosy.

Programmatic criteria are identified for verification to ensure leprosy services are in place while reviewing the epidemiological cut-off reached by a particular sub-national area or country. The criteria covered different aspects of leprosy care like early diagnosis, treatment adherence, disability care, stigma reduction, rehabilitation of persons and inclusion of persons affected by leprosy. Technical guidance will be disseminated through the proposed symposium.

The forty-five minute/one-hour symposium will cover five presentations on the WHO guidance, experience from countries and question and answer sessions. Remarks from chair and co-chair will be used for opening and concluding the sessions.

#F-42

DEHABILITATION IN LEPROSY – APPROACHES TO COUNTER IT!

Manisha Saxena

Deccan School of Management, Hyderabad

Disease or disability is a universal phenomenon which affects a number of people everywhere, but not always to the same extent or in the same manner.

Dehabilitation is a process spread over time. The disabled persons are at a disadvantage in society. They are gradually alienated from their family, society and work and may opt out or are compelled to leave their normal social milieu. They may enter an institution, a beggar colony or a self -settled leprosy colony.

Dehabilitation in terms of failure of social support, social acceptance is a continuum. Some diseased or disabiled continue to live in their original social environment with little or no alterations in their role on lifestyles representing non-dehabilitation. Whereas others may have to drastically change their role or alter their lifestyles to suit the changed conditions representing high degree of dehabilitation. In between these

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two extreme degrees of dehabilitation, there are some intermediate situations where the dehabilitation effect on diseased or disabled is to varying degrees on the continuum.

The following case illustration will give a clear picture of the dehabilitation process in leprosy patients. There was a young pretty girl. She had infiltration on the face. MDT was started for her. But she discontinued the treatment. She began to develop visible physical deformities. Once the disease became visible her brother threw her out of the house. She cut her feet with a broken beer bottle. She personified dehabilitation.

In a way, It does not matter how many people are dehabilitated. As MK Gandhi put it, "When there is ocean of poverty You do not need to measure its depth, before doing something about it". It is only in statistics that people are dehabilitated in millions, in real life each one is alone. (Moyes, Adrian, 1981)

#F-43

A MARVELLOUS VACCINE THAT CURES LEPROSY AND ALSO UGLY BLEMISHES OF LEPROSY OF PATIENTS BESIDES BETTER THERAPEUTIC ACTION ON CATEGORY II DIFFICULT TO TREAT TUBERCULOSIS; IDEAL FOR ELIMINATION/ ERADICATION OF LEPROSY AND TREATMENT OF TUBERCULOSIS.

G. P. Talwar

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We developed a Vaccine against Leprosy, which is approved by the Drugs Controller General of India and also the US FDA. It was passed on to Industry for ready availability to Public. It is based on a heat-killed non-pathogenic mycobacteria, whose genome sequence has been determined. It is named Mycobacterium indicus pranii (MIP).

MIP combined with the usual MDT cures Leprosy patients Faster and Patients become normal humans without ugly Blemishes of Leprosy. Many of them also become Lepromin positive, which Drugs alone seldom achieve. It can and SHOULD be employed for Eradication of Leprosy.

In many countries, where Leprosy is still prevalent, Tuberculosis is also a fairly prevalent infection. Interestingly MIP has also been tested in treatment of Category II Difficult to treat Tuberculosis patients with much higher cure rates, and far less Relapses.

MIP is a potent Invigorator of Immune Responses. It is being used at the All India Institute of Medical Sciences, New-Delhi by Prof. Somesh Gupta for dramatic clearance of ugly Ano-genital warts.

#F-44

EXPERIENCE IN THE USE OF MIP IN DIFFERENT CLINICAL SETTINGS

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Mycobacterium Indicus Pranii (MIP), previously called Mw vaccine is a one-of-a-kind immunomodulatory vaccine. It was indigenously developed in India and approved by the Food Drugs Administration (US FDA)

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and Drug Controller General of India (DCGI) for use in leprosy. Mycobacterium w is a non-pathogenic atypical mycobacterium that is easily cultivable and belongs to Class IV of Runyon classification. It shares epitopes with Mycobacterium leprae and Mycobacterium tuberculosis which forms the rationale behind its use in leprosy and tuberculosis. MIP activates both innate and acquired immunity. It induces a Th1 and Th17 immune response along with downregulation of Th2 pathway and activates macrophages and dendritic cells. The vaccine is administered intra-dermally with each 0.1 ml suspension containing 0.5 x 109 cells of heat-killed Mycobacterium w. Mw vaccine is fairly safe with adverse effects such as local site erythema, swelling, and rarely fever and other systemic reactions.

Apart from leprosy, MIP has been used in dermatological diseases such as warts and psoriasis. Clinical trials have evaluated the efficacy of MIP in a plenitude of non-dermatological conditions such as category II tuberculosis, gram-negative sepsis, non-small cell lung cancer, HIV, muscle-invasive bladder cancer, steroid-resistant optic neuritis, and the very recent, COVID-19. MIP is DCGI approved in non-small cell lung cancer. In-vitro and animal studies have also demonstrated its utility in leishmaniasis, melanoma, and as a vaccine for the prevention of pregnancy. In a resource-limited country such as India, this vaccine can be a boon by the virtue of the formation of memory T cells for long-term efficacy and its utility in a plethora of conditions mentioned earlier.

#F-45

VALUE OF MIP VACCINE IN PREVENTION OF LEPROSY IN CONTACTS OF LEPROSY PATIENTS

Hemant Kumar Kar

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In addition to early detection and treatment of leprosy, without introduction of immune-prophylaxis and chemoprophylaxis it is difficult to achieve zero leprosy in glove in near future. With financial assistance from DBT, Govt of India, Principal Investigator-Prof GP Talwar Director, NII (National institute of Immunology) and Co-Investigators at different periods of project initiated the immunotherapy and immunoprophylactic research project using Mw candidate vaccine for multi-bacillary (MB) leprosy patients as an immunotherapeutic agent in 1986 to 1995 in phase 2 and phase 3 clinical trials (hospital based) followed by as an immunoprophylactic agent from 1995-2005) for contacts of leprosy patients (field based).

Mycobacterium indicus pranii (MIP; formerly known as Mw) is a rapid growing, nonpathogenic, cultivable mycobacterium belonging to Runyon Group IV, shares several antigens with *M leprae* and M tuberculosis. A killed candidate vaccine prepared from this bacillus whose immunomodulatory effect tested in vitro and experimental animals. It was well tolerated and safe with only a blister/nodule formation at the local site of inoculation. Following intra dermal injection of this vaccine a blister/nodule appears in 3 - 4 weeks and heals of its own in another 6 to 8 weeks. In a double blind study in new MB leprosy patients under standard multidrug therapy for MB leprosy as per WHO recommendation with (trial group) and without Mw vaccine (control group) bacteriological clearances were significantly more rapid in vaccinated patients ($p<0.03$). 35 LL/BL patients with a high bacterial index (BI) of 6+ were completely cleared of acid-fast bacilli (AFB) after eight doses of vaccine (at 3monthly interval). Only 8 patients in the control group became bacteriologically negative in the same time period. They all had BI <4+. There was accelerated clinical regression of lesions after vaccination, lepromin conversion rates of 100% for BB (borderline leprosy), 71% for BL (borderline lepromatous leprosy) and 70% for LL (lepromatous leprosy). A significant number of immunized patients showed histological improvement ($p<0.004$). Thirty-six out of ninety-three showed a complete disappearance

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of dermal granulomas and a picture of non-specific infiltration. The vaccine did not precipitate neuritis or deformities

In our next study we observed induction of Lepromin positivity by Mw vaccine in Lepromin negative contacts of MB leprosy patients. 3O8 Contacts tested for Mitsuda lepromin test, 109 found negative (35.4%). 95/109 eligible administered Mw vaccine, two doses ID at 6 months' interval. Overall lepromin conversion was 98.5%. Follow up in 30 months showed no reversal of lepromin conversion. No untoward side effect except local site ulceration as in BCG vaccination.

The above finding prompted us for immunoprophylactic trial using this candidate among contacts of new index leprosy cases in the field. A total of 24,060 household contacts (HHC) could be vaccinated for vaccine or placebo under coding (20,194 administered two doses and 3866 received single dose). First dose:0.1ml, 1 x 109 heat killed bacilli (Mw) in normal saline) was given intradermal. Second dose: half of the first dose,108 bacilli was given after 6 months. The placebo consisted of 1/8th dose of the normal dose of tetanus toxoid. Both placebo and vaccine were given under double-blind code. Follow up done at 3, 6 and 9 years after the initial vaccination for new case detection among post-vaccination cases. Protective efficacy of contacts received Mw vaccine was 68.6% at the end of 3 years, 59% at the end of 6 years, 39.3% at the end of 9 years. Protective efficacy when both patients along with MDT and contacts received Mw vaccine. 68%, 60% and 28% at the end of 3 yrs., 6yrs, and 9yrs. respectively. Protective efficacy when patients only received Mw vaccine with MDT. 42.9% at 3rd yr., 31% at 6th yr. and 3% at 9th yr. Only vaccination to patient s does not help prevention of transmission of *M. leprae*. The vaccine effects were noted maximally in children as compared to adolescents and adults. The effect of vaccine is sustained for a period of about 7-8 years, following which there is a need to provide a booster vaccination for the sustained protection.

However, third booster is imperative in view of the sustainability of CME response against infection even after exposure till the source of infection is persisting in the community for transmission. Addition of chemoprophylaxis will definitely would be a boost to achieve zero leprosy by 2030.

Based on the evidences available within country research, project based research is undergoing in three states of India by ICMR (Title: To study the prevention and feasibility of taking these low cost yet e feasibility of MIP vaccine as an immunoprophylactic & immunotherapeutic under the National Leprosy Eradication Programme in high endemic settings.) with an objective of to implement these interventions under NLEP routine programme conditions. Thereafter, the interventions could be scaled up throughout the country. This ongoing project result will further clarify the feasibility of this immunoprophylaxis among contacts in NLEP in India.

#F-46

VALUE OF SKIN BIOPSY IN DIAGNOSIS & MANAGEMENT OF LEPROSY

I S Reddy

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There is no human disease in which the clinical picture is as varied as that of leprosy. Leprosy usually involves the peripheral nerves and skin. In addition, it may cause damage to the mucus membranes, eyes, testes, muscles, tendons, bones and joints. The diagnostic features of leprosy are 1 anaesthetic skin lesions in the form of macules, papules, nodules and plaques, 2 nerve enlargement, 3 demonstration of Mycobacterium leprae by skin smears and skin biopsy.

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In the great majority of patients, the diagnosis of leprosy can be made by through history, examination of the skin and peripheral nerves and skin smears. Biopsy and histopathology examination play an important role in certain exceptional situations such as pure neural leprosy (nerve biopsy), indeterminate leprosy and in certain rare presentations of lepromatous leprosy. Skin biopsies play a crucial role where the skin lesions are very subtle, sensory testing is equivocal, peripheral nerves are not enlarged and slit skin smears are negative.

This presentation depicts few case scenarios where the skin biopsy played an important role in establishing the diagnosis of leprosy.

#F-47

HRUS OF PERIPHERAL NERVES IN LEPROSY - VALUE & APPLICATION

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Leprosy is the most common treatable peripheral nerve disorder worldwide but is marked by periods of acute neuritis due to lepra reactions leading to functional impairment of limbs, ulcer formation and stigmatizing deformities. Early diagnosis and treatment of leprosy, reactions and neuritis are essential to prevent these complications.

In the last two decades we have been studying the diagnostic value of high-resolution ultrasonography (HRUS) in diagnosis of leprosy and have established it as a highly valuable tool in the early diagnosis of the disease. The basic parameter studied has been the Cross -Sectional Area (CSA) of the nerve; and an increase in CSA in the presence of sensorimotor changes has been a definite pointer to the diagnosis of leprosy.

Pure Neural Leprosy (PNL) is a form of disease where there are signs and symptoms of peripheral neuropathy but no skin lesions to alert a person to a diagnosis of leprosy. In the recent few years, we have received numerous referrals from Neurologists and Dermatologists who clinically suspect PNL but are looking for a more definitive confirmation of leprosy or otherwise. HRUS has been very useful in such cases to confirm the clinician's suspicion or to exclude a diagnosis of PNL. Some of that data relating to 54 such suspects of PNL will be presented in this talk.

The concomitant use of Colour Doppler (CD) of the nerve has also been studied to detect small changes in blood flow in the nerve and relating it to the hyperaemic state in lepra reactions and neuritis. This has enabled the treating physician to start corticosteroid therapy early and thus prevent nerve function impairment.

In a cohort of over 50 leprosy patients followed up over two years we were able to show how HRUS can be a useful prognostic tool to follow up patients and observe a reduction in the size of the nerve with treatment as well as detect late reactions/neuritis and treat them on time.

More recently, with improvements in the resolution available in updated USG machines we have been able to study the finer echotexture of the nerve to detect mild, moderate and severe echotexture changes and relate it to the degree of damage to nerve fascicles.

Additionally, hand held ultrasound machines connected to a phone or tablet can bring this versatile technology to a point-of-care, especially in countries like India.

Conclusions: Ultrasonography can be used as an additional tool for the diagnosis of leprosy especially in pure neural leprosy. When combined with colour Doppler studies it can identify reaction and neuritis in

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the nerve and can point to the need to initiate corticosteroid therapy. It has prognostic value in interpreting the effectiveness of the reaction treatment and to assess the extent of nerve damage by measuring CSA, endoneural blood flow and changes in echotexture.

#F-48

COMMUNITY BASED APPROACHES TO IDENTIFYING HIDDEN CASES OF LEPROSY

Annamma John

Early detection of leprosy has been recognized as a fundamental component of leprosy control since the implementation of leprosy control and elimination programmes globally. The chronic nature and usually mild initial symptoms of leprosy make early diagnosis challenging as the prevalence of the disease decreases, and fewer health workers have the capacity to diagnose leprosy clinically. At the same time, the devastating consequences of untreated leprosy make it imperative to employ innovative methods to ensure that 'hidden' cases in the community, whether in difficult-to-reach locations or underserved populations, are diagnosed early and have access to treatment.

Early detection involving community participation is an approach which has proved increasingly useful as the prevalence of the disease decreases. In recent years, varied methods involving communities have been proposed and implemented in the field. Involvement of nonformal practitioners, health education and skin camps conducted by local/village administrative committees, training of school children, as well as skin health camps at local fairs and on market days are some of these initiatives. However, in the case of a relatively rare disease like leprosy, cases may sometimes be missed or misdiagnosed. This contributes to ongoing transmission and is associated with a risk of progression to severe morbidity and disability. Therefore, diagnostics that are field friendly, sensitive and low cost could be used to complement community based approaches for timely detection. This type of a multifaceted approach may be the way forward for early diagnosis in the community as leprosy dwindles and clinical expertise becomes more confined to specialised centres.

#F-49

IS THERE MORE TO RECONSTRUCTIVE SURGERY IN LEPROSY THAN TENDON TRANSFERS?

Jerry Joshua

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Dr. Paul Brand introduced tendon transfers as a way of correcting muscle imbalance in people with nerve damage in leprosy in the 1950s and since then, reconstructive surgery in leprosy has been used to correct deformities in leprosy.

Until then, surgery in leprosy involved debridement and amputations and very little reconstruction. With the incorporation of tendon transfer surgeries in leprosy, many surgeons have been trained in correction of common deformities seen in leprosy. Others have improved on these procedures to correct the more complex deformities seen in hands and feet.

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Since then, many techniques have been introduced to correct deformities of the nose, to salvage disintegrating limbs, to salvage hands and feet with soft tissue loss and contractures, to salvage and retain some function in mitten hands and also to resurface the weight bearing sole and non-weight bearing foot and ankle. These have met with varying degrees of success. L-PRP (Leucocyte-Platelet Rich Plasma) has been introduced in wound healing. Soft tissue flaps have been used to replace scar tissue, in an attempt to prevent recurrence of wounds.

In India, around 3000 reconstructive surgical procedures are done each year. More than 2500 of these procedures are tendon transfers as most surgeons and administrators and physiotherapists think that "reconstructive surgery" or "RCS" in leprosy is "tendon transfers".

Ulcers are a more common problem in leprosy and many patients undergo debridement procedures, but very few undergo procedures that reconstruct lost tissue in the feet and hands. Many patients do not undergo procedures other than tendon transfers as surgeons trained in reconstructive surgery in leprosy do not undergo training in such "other" procedures. They are not trained to reconstruct lost tissue.

We need to incorporate these "other" procedures into the training of reconstructive surgeons.

#F-50

POST COVID RISE IN LEPROSY NUMBERS – IMPLICATIONS AND RESPONSE

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Background: Coronavirus disease (COVID-19) Pandemic has affected global health programme particularly infectious disease programme like leprosy, tuberculosis and other programmes. The interruption of case detection activities, mobility restrictions, reduced healthcare services and social distancing policies severely affected early new case detection of leprosy. Diversion of frontline healthcare workers in COVID-19 activities affected leprosy elimination and treatment strategies in endemic countries like India and Brazil.

WHO and SIG Leprosy (IADVL Academy) advocated special guidelines on management of Leprosy in context of COVID-19 Pandemic.1 Subsequently, few studies confirmed occurrence of COVID-19 in known leprosy cases. During 2020-21, Bombay Leprosy Project (BLP) reported 23 leprosy cases infected with Covid-19, of which 3 deaths due to COVID-19 confirmed among elderly and those with co-morbidities.

Implications: According to WHO update on Global leprosy for 2021, there was 37% reduction in detection of new leprosy cases with greatest decrease among children (by 42.3%). Overall, number of new leprosy cases in 2021 increased by 10.2% compared with 2020; however new G2D leprosy cases increased in both adults and children, by 17.6% and 19.5%, respectively.2

Likewise, 114,451 new cases reported from India in 2019 which decreased to 65,147 new cases in 2020, a fall of 62%; with marginal rise to 75,394 in 2021. Similar trend was also observed among the referral cases at Referral Centre of BLP in Mumbai with a drop of 30% in new cases and 45% in cases under follow up thus affecting early detection of new cases and services for prevention of nerve damage and disabilities. In Mumbai average new cases dropped by 50% during Covid-19 Pandemic which showed a rise in new case detection campaign in 2022 to pre covid level.

Response: Despite additional burden of COVID-19 activities, NLEP implemented ACDRS in 2021 and 2022 as a surveillance strategy throughout the year to detect 'backlog' cases undetected during COVID-19 Pandemic. In view of reducing the transmission and increased morbidity, we need to intensify active case

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detection activities and strengthen DPMR services in the integrated settings considering the assertive call given by WHO to achieve 'zero' leprosy by 2030.

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#F-51

CHILDHOOD LEPROSY - ISSUES IN THERAPY

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- Childhood leprosy-Strong indicator of disease transmission in the community & Performance indicator of the NLEP
- Children are most susceptible age group (youngest age reported 1 and half month)
- Issues in therapy, depends on the age –They are related to diagnosis, related to drugs &
- Related to adherence
- Single hypo pigmented patch on the face in children has high-risk of misdiagnosis (P alba, vitiligo, and TV etc.)
- Symptom, scaling, sensations on the skin lesions shall help to differentiate other lesions from Hansen's patch
- Issues in therapy related to drugs- Look for availability of syrups, Dispersible tablets specially in below 6 years of age children
- Issues related to Adverse reactions (Xerosis, hyperpigmentation)-Though tolerable, but not necessarily acceptable specially in teenage group (Adolescents)
- Issues related to lepra reactions-effect on growth, development, schooling and education of child
- Early diagnosis and treatment is the best way to prevent nerve function impairment (NFI) subsequently prevent Lepra reactions
- Issues related to adherence-Implement formula of M^2 (Medicine & Mother-In Preadolescent, Medicine & Mind –In Adolescent children)

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#F-52

MANAGEMENT OF STEROID DEPENDENT ERYTHEMA NODOSUM LEPROSUM

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Erythema nodosum leprosum (ENL) is an immunological event in the disease course of multibacillary leprosy. The dramatic occurrence with multi-system involvement and recurrent course of the disease adds significantly to the patient morbidity. The recurrence makes ENL a 'difficult to treat' condition. The mainstay of therapy in a case of recent-onset ENL is systemic steroids. However, often a critical dose of systemic steroid is required to keep the disease under control. These patients are designated as 'steroid dependent', either chronic or recurrent ENL. These patients are subjected to develop iatrogenic Cushing's syndrome and other side effects of long-term use of systemic steroids. Hence, steroid-sparing-agents play a definite role in the management of ENL.

Thalidomide, TNF alpha blocker is the first therapeutic agent of choice in steroid dependent ENL and has merited the position of 'first line therapy' in any 'difficult to treat' case of ENL. Due to teratogenicity, this drug cannot be used in women of child-bearing age. In these patients clofazimine in anti-inflammatory dosage for a minimum period of 3 months is a reasonable therapeutic option.

Other immunomodulators which are helpful in tapering the critical dose of steroid are methotrexate, ciclosporine and azathioprine.

There are anecdotal reports of several other therapeutic agents in the treatment of steroid dependent ENL. These include intravenous immunoglobulin, anti -TNF alpha monoclonal antibodies like etanercept and infliximab. Apremilast has been used successfully in limited number of patients. As high bacillary load is an important factor in contributing to chronicity or recurrence of ENL anti-leprosy vaccines may be adjunct to pharmacotherapy.

Management of steroid dependent ENL remains a therapeutic challenge. In most of the cases individualized therapy is required as per experience and decision of the clinician. Evidence based therapeutic regimen using safe, effective and affordable drug(s) is yet to be developed.

#F-53

DERMATOLOGISTS ROLE IN POST-RFT PATIENT CARE

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Background & description of problem: Most countries globally have achieved leprosy elimination status and with that integration of leprosy services with other health services have resulted. Also, number of health workers only assigned for leprosy work at field level has also declined. This has resulted into deficiency of skilled leprosy worker at all levels. Management of leprosy program at a national level requires specific input from actual physicians who manages leprosy and are aware of the problems of leprosy affected people and challenges of managing the disease.

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Role of Dermatologists: People affected with leprosy at some point in disease course have cutaneous involvement in most cases. At a tertiary level, leprosy oriented dermatologist is a go to person to either confirm or refute the diagnosis of leprosy. Program Managers seek opinion of experienced dermatologist in the policy making. Post graduate curriculum of dermatology is the only specialty which have a separate leprosy practical case in order to get post graduate degree.

Conclusion: All the facts suggests that dermatologist is the person most equipped to manage individual patient of leprosy, to take stand for the plight and range issues faced by leprosy affected people and to opine and advise on policy making decisions at a country level at large. It would be fair to say that dermatologist is the 'heart' of leprosy services in the post-RFT patient care.

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#F-54

INVOLVING PUBLIC REPRESENTATIVES IN AREA SPECIFIC PLANS FOR LEPROSY ACTIVITIES IN DIFFICULT/HARD TO REACH AREAS

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AIFO, India

During the start of Covid19 Pandemic (2019) most of the National Programmes came to a standstill and Health Staff were deputed to Pandemic as Emergency services Patients under treatment migrated, MDT delivery, Complication management and Case Detection activities had to be given attention and focus. The Central Leprosy Division passed – National Policy Covid+Leprosy, (with NLEP as essential Services.)

ILEP outsource their leprosy experts to CLD to operate as ILEP/ NLEP Consultants to operate at various States/ District NLEP. Which involves various job functions and travel which became a big challenge during the Pandemic. The experience presented is from the State of Assam NE India region, which has predominantly a large area of Tea Gardens – and the labourers are socially stratified as "Adivasi", who were brought to work in tea gardens by the British from Bihar, Jharkand, Odissa, Andhra Pradesh, Chattisgarh. Assam State NLEP had identified these Tea Estate/Garden areas as highly endemic, difficult to reach, underserved population.

NLEP advocated a three-pronged approach of (a) "leprosy case detection campaign (LCDC)" in highly endemic districts; (b) focused leprosy awareness campaign using ASHA and multipurpose health workers in "Hot Spots," where new cases with Grade 2 Disability (G2D) are detected; and (c) area-specific plans for case detection in hard-to-reach areas.

Keeping in view the three-pronged approach AIFO NLEP Consultant initiated a pilot study "Involving Public Representatives (District Administration/Collector/Magistrate – Dy Commissioner" a strategy to improve the operational aspects of NLEP in the districts of Dibrugarh, Udalguri and Silchar – mainly on (c) area-specific plans for case detection in hard-to-reach areas.

For the first time ever District NLEP Review was conducted and reviewed by the Administration The results was very much encouraging – which will be discussed during the presentation

#F-55

DISEASE MAPPING IN LEPROSY

Melissa Edmiston

American Leprosy Missions

There is increasing focus on the need for improved leprosy data management and mapping to achieve local and global elimination targets. This is seen in the ILEP Strategy 2021-2025 Goal 2, to have globally consistent leprosy data standards and data collection methodologies, in the GPZL research agenda, where mapping and spatial analysis are listed as key priorities, specifically the identification of clustering , and in the Global Leprosy Strategy 2021-2030 where one of the critical actions to achieve targets is to utilize mapping tools and surveillance systems to ensure the detection of hidden cases and to monitor progress. Mapping is also prioritized in the WHO Road Map for NTDs 2012-2030, calling for standardized mapping for a detailed view of disease epidemiology and progression.

This presentation will define mapping within the context of leprosy and describe how mapping activities are a critical tool to help countries accelerate progress towards zero leprosy and achieve goals associated with case detection, surveillance, and disability prevention as part of a comprehensive data management system.

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The speaker will share common challenges faced when considering digital mapping, examples of previous mapping work, tools and resources available, and mapping priorities in the years ahead, including the launch of the Global Leprosy Mapping Initiative. Attendees will be encouraged to consider how they can prioritize mapping activities and engage partners and colleagues in the process.

#F-56

CLOFAZIMINE IN ENL- A REAPPRAISAL

Marivic Felicio Balagon

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Erythema Nodosum Leprosum (ENL) is a complication occurring exclusively among multibacillary patients, particularly the BL- LL types. It often has a protracted course with recurring, usually debilitating episodes lasting for months or years. Thalidomide is the most effective treatment of ENL. However, since it is not available in some leprosy-endemic countries, alternative treatment modalities are used including Clofazimine, an anti-inflammatory drug component of WHO-MDT.

Since WHO-MDT for multibacillary leprosy was shortened from two years to one year, there have been increasing reports of the more severe type of ENL particularly among patients in the shortened regimen. Though it is believed that it's partly because of the shortened coverage with clofazimine, little has been published on these observations. This report aims to reappraise the prophylactic & therapeutic effect of Clofazimine in the incidence and severity of ENL.

A prospective study of 100 high-BI MB patients (one-year MDT with extended vs non-extended clofazimine) showed no significant difference in the incidence of ENL between treatment arms (P=0.62). However, although not statistically significant, ENL in the non-extended arm were more severe with higher steroid requirement. Furthermore, a retrospective study of 589 MB cases (2-year vs 1-year MDT) showed that incidence and severity of ENL were significantly higher in the one-year MDT group (P< 0.001; P<0.005). However, multivariate analysis showed that high BI was the only risk factor significantly associated with occurrence of ENL; while both high BI and shorter clofazimine coverage were risk factors significantly associated with severity in terms of clinical manifestations, duration and steroid requirement.

These findings demonstrate Clofazimine's role in ENL, also influenced by high BI being the most important key risk factor in the occurrence and severity of ENL. Large scale prospective studies are recommended to support these findings.

#F-57

MISE EN ŒUVRE DE L'APPROCHE DE LUTTE INTEGREE CONTRE LES MALADIES TROPICALES NEGLIGEES A MANIFESTATION CUTANEE EN COTE D'IVOIRE RÉSULTATS DES INTERVENTIONS DE 2018 À 2021 (FRENCH SESSION)

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Contexte: Les maladies tropicales négligées (MTN) sont un groupe de 20 maladies qui sévissent dans les communautés pauvres et éloignées ayant un accès limité au système de santé. Ces MTN sont classées

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en MTN à chimiothérapie préventive et en MTN à prise en charge des cas. Ce dernier groupe concerne principalement les MTN à manifestation cutanée co-endémiques en Côte d'Ivoire que sont la lèpre, l'ulcère de Buruli, la gale, les mycétomes et le pian.

En vue d'une lutte efficace et efficiente, l'OMS recommande aux pays touchés de mettre en œuvre des interventions intégrées qui prennent en compte les différentes MTN co-endémiques dans les mêmes communautés. Cependant, la mise en œuvre de telles interventions impliquant plusieurs maladies aux étiologies différentes, nécessitant des approches de lutte différentes menées par des programmes verticaux, reste un défi.

Les deux programmes de santé en charge de la gestion et la coordination de la lutte contre les MTN cutanée en Côte d'Ivoire ont expérimenté cette approche de 2016 à mars 2017 dans trois districts sanitaires. Ainsi les points forts et les insuffisances dans la mise en œuvre d'une telle approche ont été identifiés et ont permis d'étendre les activités dans plusieurs autres districts.

Nous rapportons ici les résultats et les acquis obtenus de 2019 à 2021 de cette approche intégrée basée sur plusieurs composantes en Côte d'Ivoire, un pays d'Afrique de l'Ouest endémique pour la lèpre, l'ulcère de Buruli, la gale, les mycétomes et le pian.

Méthode: Cette étude transversale s'est déroulée de 2018 à 2021 en Côte d'Ivoire, pays co-endémiques pour la lèpre, l'ulcère de Buruli, la gale, les mycétomes et le pian. L'étude cible 04 axes d'intervention : le développement de documents stratégiques, le renforcement des compétences des acteurs, la détection et la prise en charge intégrée; l'implémentation des composantes transversales liées aux MTN.

Résultats: Les différents axes sont déclinés en plusieurs activités qui ont été mises en œuvre dans 3851 localité de 46 districts sanitaires sur 113 soit 41% de districts sanitaires couverts par l'approche integrée. Durant la période de 2018 à 2021, les interventions suivantes ont été menées : développement des modules intégrés de formation renforcement des capacités des 1071 infirmiers des ESPC (85%) sur 1260 que comptent les 46 districts cibles pour l'intégration ; 2087 relais communautaires sont mobilisés. Les sessions de renforcement de capacités ont porté à la fois de la lèpre de l'UB, du pian, des gales et des autres dermatoses courantes telles que les teignes, les autres causes d'ulcérations chronique et l'eczéma.

Les activités de dépistage et de prise en charge intégrés ont touché 3851 localités de 46 districts sanitaires. Dans l'ensemble de ces districts ce sont 983 cas d'UB, 314 cas de lèpre dont 105 MB. Au cours de la même période, 180 cas de pian, 1488 cas de gale, et 36261 autres lésions dermatologiques. Il s'agit de cas d'ulcération chronique, de teignes, d'eczéma, de pityriasis versicolore, de dermatophyties, et autres lésions mycosiques ont été dépistés. Tous les cas sont rapportés sur des outils standardisé de l'OMS : UB 01, UB 02, pian 003 et tome sommier. La gestion électronique des données est faite dans le DHIS2.

Conclusion: Les résultats obtenus de 2018 à 2021 montrent que la mise en œuvre des interventions de lutte contre les MTNs cutanées en Côte d'Ivoire selon l'approche intégré est une évidence qui se déroule bien dans les communautés co-endémiques. La réussite de cette approche est facilité par le renforcement des capacités des ressources humaines et l'utilisation d'une plateforme nationale de gestion intégrée des données. Il reste à prendre en compte certaines autres MTN cutanée telle que les envenimations et les mycétomes dont aucunes données n'est disponibles en Côte d'Ivoire.

Mots clés : MTN cutanée, co-endémicité, Lutte intégrée, Côte d'Ivoire

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#F-58

NON-HUMAN RESERVOIRS OF MYCOBACTERIUM LEPRAE

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Humans have always been considered the primary reservoir of Mycobacterium leprae. Even by the time of the "1st International Leprosy Congress" in 1892, however, Sand and others had begun to postulate that the organism may be transmitted from or through the natural environment. Over the years, different authors have implicated a variety of possible non-human sources of the agent, such as: soil, water, plants, or various vertebrate and invertebrate species including amoeba, insects, ticks, fish, primates, red squirrels, and armadillos. Typically, these observations have been greeted with uncertainty and scepticism. Considering that the evolutionary age of *M. leprae* is estimated to exceed that of our own Homo sapiens species by many millions of years, though, it seems obvious that the organism must have been able to adapt to a variety of different host environments well before it ever infected humans, and it may well persist within some of those niches even today.

The question of possible extra-human sources of *M. leprae* is an important one for leprosy control, and it can also markedly impact an individual patient's perception about the natural origins of his/her infection, and its social implications. If non-human reservoirs exist, their recognition may help to explain patterns of infection and disease in human populations. Even more importantly, they could have implications particularly for the possibility of 'elimination' or even ultimate eradication of leprosy. In this paper, we will consider the existing evidence for extra-human sources of *M. leprae*. We will give special emphasis to the natural infection among wild armadillos, and the potential relevance these animals may have in helping to perpetuate leprosy in some regions.

#F-59

NERVE BIOPSY IN LEPROSY– SCOPE AND POSSIBILITIES

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Nerve biopsy is an invasive diagnostic procedure and should be used very cautiously and only when other diagnostic tools are exhausted. In leprosy, a nerve biopsy is indicated when clinical findings or other investigations like skin biopsy, nerve conduction studies or nerve ultrasound are inconclusive. Pure neural leprosy (PNL) is a form of disease where nerve changes are present but skin lesions are absent and smears are negative. The gold standard for diagnosis of PNL is a nerve biopsy.

Leprosy affects mixed peripheral nerves; however, a biopsy of these nerves is contraindicated. (Rarely, surgeons excise a piece of the epineurium of the ulnar nerve while draining a nerve abscess and the pathologists often find leprosy granulomas and nerve fascicles enmeshed in it). Cutaneous nerves are biopsied with the premise that they reflect the changes in the trunk nerves. The cutaneous nerves biopsied in leprosy are the sural, radial cutaneous, ulnar cutaneous and superficial peroneal nerves, with sural being the most common. Nerve biopsy can be performed as an outpatient procedure. The nerve is dissected and only a longitudinal sliver of the nerve is excised to retain a portion of the nerve and reduce the iatrogenic anaesthesia in the area of

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distribution of the nerve. The nerve is routinely fixed and while embedding a small piece is cut and the two pieces embedded in such a way that longitudinal and cross section of the nerve can be studied.

The morphological changes in the nerve are best visualized in Haematoxyline and Eosin- stained sections and the presence of *M leprae* is detected with Modified Fite Faraco stain. Various other stains like Solochrome Cyanine stain and KPal stain are useful stains to study demyelination and remyelination of the fascicles. Silver stains are used to study the integrity of the axons but can be finicky if not carried out carefully. These stains help to identify early demyelination and axonal loss associated with leprosy neuropathy. Use of other stains like Masons trichrome to study fibrosis and Luxol Fast Blue and PAS stains make the study of nerves more versatile.

The nerve can also be fixed in Glutraldehyde and osmium tetroxide and stained with Toludine Blue to study ultrastructure of nerves in 1micron semi-thin sections. Landmark studies in the past have used teased nerve fibre studies in leprosy. Immunohistochemical studies using polyclonal and monoclonal antibodies like BCG, S-100, PGL, LAMB, TGF- beta, iNOS, TNF-alpha make the study of nerve immunopathogenesis in leprosy possible. Conclusions: Although nerve biopsy is an invasive diagnostic procedure it can be an invaluable tool in the diagnosis of PNL; to study the spectrum of nerve changes in the disease; and to differentiate it from neuropathies due to other causes. Using special stains and immunohistology, the demyelination, axonal loss, fibrosis and immune pathology associated with nerve damage can be studied.

#F-60

INFLUENCE OF COVID 19 PANDEMIC ON GLOBAL LEPROSY

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Coronavirus disease 2019 (COVID-19), caused by infection with SARS-CoV-2 virus, resulted in a pandemic and unprecedented global health crisis. All medical services were profoundly affected. Self-medication, poor compliance, lack of standard treatment guidelines, and monitoring protocols were serious issues during pandemic; leprosy was no exception. The impact of COVID 19 on leprosy disease was felt in many ways. Because of the long-term steroids for the management of reactional states, leprosy patients were vulnerable to COVID-19 and its complications. Restricted transport facilities during lockdowns led to limited access to MDT including clofazimine, thereby affecting compliance. For similar reasons, referral services were affected with a serious impact on leprosy control. Furthermore, as majority of leprosy patients belong to lower socioeconomic strata, risk of acquiring COVID-19 was high due to overcrowding, poor living conditions, malnutrition, and inadequate social distancing.

Amongst the co-infected patients, the poor outcome was found to be related more to the coexistent co-morbidities, adverse laboratory and patient profile. However, possible increase in frequency and intensity of leprosy reactions in these patients was attributed to the COVID-19 infection acting as a trigger.

Management of leprosy also suffered during the pandemic. Leprosy patients were advised to continue MDT. Specialized services continued to diagnose new cases and manage lepra reactions. Admissions, active case detections and elective reconstructive surgeries were however postponed. Use of immunosuppressants was restricted with use of steroid sparing agents. Telemedicine, mobile phone calls were used for emergency remedial purposes. For patients facing increased stigma, discrimination, depression, or isolation, counselling was offered. Finally, COVID-9 vaccination was encouraged in all. Unmasking of MB leprosy and type 1 reaction following

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vaccination was encountered, possibly due to T-cell mediated immune upregulation elicited by the COVID-19. In the end, a comprehensive detail of the studies from across the globe will be presented.

#F-61

ELIMINATION OF LEPROSY AS A DISEASE – KEY STRATEGIES FOR THE ROAD AHEAD

Rajan Babu Gadde

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Since introduction of multidrug therapy seventeen million patients got treated. The prevalence reduced but new cases continued. The decrease in new cases was gradual. The global leprosy strategy 2021-2030; towards zero leprosy saw a paradigm shift from elimination as a public health problem to interruption of transmission. Leprosy along with onchocerciasis is targeted for 'interruption of transmission' which in actual words means absence of any autochthonous new cases in a specified geographical area or a country. Zero autochthonous leprosy cases can be achieved well strengthening leprosy services in line with the basic tenets of leprosy control, i.e. early detection and prompt treatment of all detected case before deformities developed. Recent evidence showed that this can be achieved much quickly with introduction of post-exposure prophylaxis with single dose rifampicin to all those who got exposed to infection of leprosy.

The global leprosy strategy 2021-2030 emphasizes integrated case finding alongside with introduction or post exposure prophylaxis. It is time the national strategic plans for elimination of leprosy adapt integrated case detection and preventive initiatives to reach the goal of interruption of transmission of leprosy.

National leprosy programmes need to design leprosy roadmaps aligning with global leprosy strategy 2021 -2030. The core strategies are integrated case finding to detect all cases of leprosy before deformities are developed and introducing single dose rifampicin for all contacts of leprosy.

An improved data management system will be an important adjuvant that enhances effectiveness of the surveillance system.

Presence of organized partnerships at national and sub-national level helps in ensuring concerted efforts in eliminating leprosy; they also can help in preventing duplication of interventions.

#F-62

OCULAR LEPROSY – CHANGING PROFILE & PRIORITIES

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"There is no disease which so frequently gives rise to disorders of the Eye, as Leprosy does" Gerhard Armauer Hansen 1873.

Is this statement true today? Let me give you an example of changing profile of patients presenting with ocular symptoms.

Mr.X aged 44 yrs recently presented to my OP with complaints of Redness, Pain , Photophobia, dimness of vision Right Eye since 3 months ; On examination Vision on his RE is 6/60; Circumciliary congetion; Corne hazy , Pupil irregular in shape, sluggishly reacting to Light. Slit Lamp examination showed Keratin

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Precipitates of larger size, cells in anterior chamber, Posterior synechiae from 11' clock to 2 ' clock. He had no complaints on his Left eye, vision was normal. LE examination was normal.

Ocular examination concluded with diagnosis of Anterior Uveitis Right Eye.

He is a known Diabetic on glycemic control; presented with multiple neuritis and erythematous multiple patches distributed all over the body a year ago ; completed MDT/MB for a year, Skin smear negative for AFB . He had gone to UAE on work while on 6th pulse of MDT- completed MDT regularly. While on 9th pulse he developed Uveitis RE – treated at UAE. Since then he had been developing recurring Uveitis on Right Eye alone.

Diagnosis: Hansen' s disease- BT- BB / Type I reaction/ Multiple neuritis/ RE – Chronic granulomatous Uveitis / Diabetes under control

Challenges –1) Granulomatous Uveitis is almost always bilateral , secondary to Chronic disease.

2) Uveitis happens as part of Type II reaction

Priorities:

All Leprosy patients need to undergo Eye examination at least once under slit –lamp

Red Eye – whether unilateral or bilateral is an emergency- require referral to Ophthalmologist.

Ocular complications can occur before, during and after completing Multidrug therapy. Patient needs to be educated and counseled appropriately.

#F-63

HIGH BI LEPROSY PATIENTS - ISSUES & MANAGEMENT

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Patients with high bacillary index (MB cases) are probably the most important reservoirs of leprosy transmission and should never be missed, or under-treated. Early detection and adequate management of these patients are crucial for checking the transmission and attaining the goal of a Leprosy-free world. These patients are prone to reactions, recurrences and reinfection even after completing the treatment. This results in disability and deformities which lead to social ostracism, job loss, and divorce due to widespread misconceptions about Hansen's disease. Unlike few developed countries, there are no separate guidelines for the treatment of patients with a high bacillary load. Identification of these patients and monitoring their response to the treatment is the most important step, we need to reintroduce slit skin smears in our leprosy programs and continue to work on better and more sensitive point of care tests for studying the bacillary load. We suggest the role of immunotherapy, prolonging the duration of treatment, post FDT monthly ROM/PMM regimes till smear negativity, and better treatment regimens with bactericidal drugs like minocycline or moxifloxacin or daily rifampicin in these patients. All these approaches need to be studied and compared so that the best approach may be selected and implemented. It is time that the concerned authorities take a serious look at the program especially in relation to the treatment regimen, before the other individual leprologists, institutions or even the national programs devise their own regimen according to their convenience and perceptions. This will jeopardize the Global Leprosy Control Programme and fritter away the gains achieved and may even result in a difficult to control situation of multidrug-resistant strains

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#F-64

REPEALING DISCRIMINATORY LAWS - ARE WE THERE YET?

Nikita Sarah

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Background: For long, India's laws interpreted leprosy as an 'incurable and virulent' disease and allowed it to be a legitimate ground for divorce, separation, and other forms of social ostracisation and economic exclusion. While there was a pressing need for reforming archaic laws, there was hardly any momentum to bring this issue to the centre stage. In fact, awareness of legal discrimination was low among stakeholders, including NGOs, associations of persons affected by leprosy, and even policymakers,

Intervention: The initial days of intervention were fraught with challenges. There was no precedence on how to go about repealing laws that discriminate against persons affected by / cured of leprosy. It was only in 2014 that a first earnest attempt was made to collect evidence about discrimination, analyse them to build a case for their amendment, and build an understanding of processes that can help in repealing laws: parliamentary processes, strategic litigations, petitions, etc.

Over the last eight years, a series of complementing initiatives—research, collaboration, communication, and advocacy—were taken towards sensitising and mobilising legislative, judiciary, and civil society to galvanise efforts for repealing discriminatory laws. Timely support of Union Ministers, the Law Commission, the Supreme Court, Member of Parliament, legal policy think tank, lawyers, ILEP and other partner organisations at different crucial moments enabled us take concerted action on repealing discriminatory provisions in Central and state laws.

Between 2016 and 2020, the Centre and nine states repealed 22 discriminatory laws, which considered leprosy a valid reason for dissolution of marriage, prohibiting someone from attending schools and colleges, holding a responsible position in academic institutions, and getting nominated as a member of governing bodies.

The way forward

As opposed to 2014, we now have more partners to sustain and scale up our efforts. Capacity of different ILEP partners and NLEP consultants has been built over the years, so that they can continue liaising with respective state governments. While the list of yet-to-be-repealed laws is still long, we have managed to set the ball in motion.

We must continue to apprise the government of the challenges these laws pose to persons affected by leprosy. The task ahead is to partner with more relevant organisations, mobilise resources and direct efforts towards the repeal of discriminatory laws, and passage of a new comprehensive legislation—Elimination of Discrimination against Persons affected by Leprosy (EDPAL) Bill, 2015—which contains principles of non-discrimination and equal protection before law.

#F-65

PHILANTHROPY WITH A TECHNICAL SCIENTIFIC APPROACH - IS IT POSSIBLE?

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Philanthropy is an action inherent to human beings and defined as the act of helping others. Its origin goes as far back as we know about the organization of our societies.

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In recent decades philanthropy has become more popular, even among people with less power. The act of giving, not only money, but also time or knowledge, brings well-being to the donor, sustains the chain of the third sector, and positively impacts the direct recipients of the actions.

Recently there has been growing interest from the second sector (private economic initiative) in philanthropy, either from their own conviction of the importance of the impact in generating social change and increasing purchasing power, or from the need to be seen doing good in society.

The Rockefeller and Gates Foundations are international examples of the impact of the second sector on public health, whether in the development of vaccines against yellow fever, provision of post-war humanitarian aid supporting the Red Cross, or in the control of diseases such as Malaria and AIDS.

These changes in the dynamics of philanthropy directly reflect the third sector of society, represented by non-profit associations that work in tandem with the actions of the (first) government sector.

This new philanthropy is only possible with synergy between the third sector in assuming risks jointly with the second sector which is capable of calculating the risks with scientific institutions to achieve objectives in a rational and orderly way.

In my presentation, I will explore the dynamics of these sectors and focus on the importance of science for the welfare of humanity, showing how assertive philanthropy can be done, with quality and efficiency, using technical measures and scientific controls to achieve a more equitable society which has a better quality of life.

#F-66

INNOVATIVE APPROACHES TO ADDRESSING STIGMA AND DISCRIMINATION

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For thousands of years, leprosy was thought to be the curse of the gods, a punishment for sin, or a hereditary condition. Leprosy is a neglected tropical disease, that occurs in more than 120 countries, with more than 200,000 new cases reported every year. It is estimated that 3-4 million people are living with visible impairment or deformities due to leprosy. And not a few people with leprosy experience stigma. Countries around the world launched programs to reduce morbidity and disability, cutting the transmission, and increasing community knowledge to reduce stigma. The prevalence of self-stigma, public stigma, institutional stigma, and structural stigma in leprosy sufferers and families requires a variety of interventions to reduce stigma amongst people living with leprosy. Considering the variety of stigma itself, there is a great need for a strategy that can cover this long-standing problem. Evaluation of various strategies and efforts of previous studies is very important to know the limitations and effectiveness of the program. An innovative approach is needed to address this complex health problem. Innovation toward the implementation of the specific programs carried out, but also on the involvement of various stakeholders, and by looking at the dynamic where sufferers live and perform she/his everyday activities. The transdisciplinary research study is one approach that could be used to address stigma and discrimination with all its complexities.

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#F-67

LEPROSY VACCINES – PROGRESS

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Incidence of leprosy has decreased in past decades, but gains have subsided, with ongoing transmission and new case data obscured by COVID19-related challenges. At least 2-3 million people globally are living with disabilities from this disease of immense physical, mental, and social burden. Recent research shows single-dose rifampicin post-exposure prophylaxis (SDR-PEP) is a promising tool for transmission reduction with partial protective effect and feasible administration for contacts of leprosy patients. However, meeting global goals of stopping transmission and disease likely requires both targeted post-exposure chemoprophylaxis and immunoprophylaxis. WHO currently recommends BCG vaccination at birth in high-burden regions as well as SDR-PEP. Unfortunately, BCG's partial protective effect declines over time, re-vaccination shows mixed results, and it can even trigger paucibacillary (PB) disease. Persistence of disease in areas with good coverage of BCG also highlights the need for additional tools to stop leprosy transmission and sustain its elimination.

There has been some notable progress in developing a superior vaccine, but also some serious challenges. LepVax is one promising vaccine candidate with both prophylactic and therapeutic properties under development by American Leprosy Missions and supported by several ILEP members. LepVax is currently in a phase 1b/2a double-blind, randomized, placebo-controlled clinical trial in Brazil to test safety and efficacy in healthy and PB leprosy patients. Results from an epidemiological modeling study conducted with Erasmus University in 2022 show how LepVax may accelerate both reduction of transmission as well as disease burden, confirming the necessity of an effective vaccine in achieving zero leprosy goals.

Investing in vaccine studies for promising candidates like LepVax is urgently needed to attain global zero leprosy goals and end the devastating effects of disease. Full development and implementation will require global collaboration and partnerships.

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21st International Leprosy Congress 2022

Oral Free Papers

EPIDEMIOLOGY AND CONTROL

#0001/ ILCABS21

INTEGRATION INITIATIVE FOR THE CONTROL OF CASE-MANAGEMENT AND PREVENTIVE CHEMOTHERAPY NEGLECTED TROPICAL DISEASES IN THE REPUBLIC OF GUINEA

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Guinea is co-endemic to several case-management (CM) and preventive chemotherapy (PC) neglected tropical diseases (NTDs). The country has experimented an innovative approach to control these NTDs, combining Mass Medicine Administration (MMA) with Active Case-Finding (ACF) of skin NTDs.

This activity was carried out in two phases

- a preparatory phase, including development of a protocol, IEC and data collection tools as well as resource mobilization.
- an implementation phase, with mass medicine administration and active screening of persons with suspected lesions of skin NTDs as well as related activities such as awareness and sensitization campaign with community leaders, training of health staff and community medicine distributors.

As the activity was carried out during the COVID-19 pandemic, the teams had to put prevention measures (physical distancing, wearing masks and using hydroalcoholic gels) into practice in the field.

This activity made enabled to treat 481,068 children out of 557,994 counted in the three targeted districts, giving an epidemiological coverage of 86% and a geographical coverage of 97%. Also, 156 cases of leprosy, 176 suspected cases of Buruli ulcer, 35 cases of elephantiasis and 22 cases of hydrocele were detected and treated in the targeted health region during one month of activities.

Coupling of active case-finding of CM-NTDs with MMA for PC-NTDs is effective and efficient. Involvement of local authorities and communities in field activities was essential for the success of the activity.

Keywords: Combination, Active Case-finding, Mass Medicine Administration and Neglected Tropical Diseases, Guinea

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#0002/ ILCABS28

PROFILE OF LEPROSY PATIENTS IN A TERTIARY HOSPITAL

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Background: In last two decades, reported global prevalence of active leprosy infection has dropped by almost 90 per cent by the combined efforts of the WHO, local governments, health professionals, and NGOs. However, a parallel drop in the incidence or new case detection rate has not occurred. By the end of 2010, the prevalence came down to 0.69/10000. But there appears to be a spurt of new cases.

Aim: To assess the clinical, bacteriological and treatment profile of leprosy patients in 1 year in a tertiary centre.

Methods: Retrospective study from hospital records of leprosy patients for a year. The clinical, bacteriological and treatment profile of patients was noted.

Results: 17(15%) were newly detected out of the total of 113 patients. 76(67%) were males, 37 (33%) were females. We came across different spectra, lepromatous 77 (68.1%), tuberculoid 13(11.5%), borderline lepromatous 12 (10.6%), borderline tuberculoid 8 (7%), and indeterminate leprosy 3 (2.6%). Smear positivity seen in 55% with BI ranging from 0.5-4 and MI ranging from 20-75%. 11 patients completed and were released from treatment. 2 patients were referred to primary health care for continuation of treatment and follow up. 6 patients received intensive phase therapy. 5 (4.4%) patients had reactions mostly type 1, 2 patients had deformities of claw hand and foot drop and 3 patients presented with trophic ulcers. 95 patients received MB-MDT and 18 received PB-MDT.

Conclusion: We have won the battle, but the war is still on and there is a need for research on early diagnosis, treatment and prevention. Our study done in a tertiary care hospital shows that there is a spurt of new cases. If extrapolated to field, there may be more number of undetected cases. Thus, there is still need for community participation for which vigorous information, education, communication (IEC) activities

Keywords: Leprosy, Epidemiology, New cases, Profile, Tertiary centre

#0003/ ILCABS51

A COMBINED FIELD STUDY OF BURULI ULCER DISEASE PROPOSING PREVENTIVE STRATEGIES BASED ON EPIDEMIOLOGICAL, GEOGRAPHIC, BEHAVIOURAL AND ENVIRONMENTAL ANALYSES

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Buruli ulcer is a neglected tropic disease caused by the M. ulcerans, an environmental mycobacterium, and its symptoms are necrotizing cutaneous lesions. Buruli ulcer affects populations with poor access to sanitation, safe water and healthcare living in rural areas of West and Central Africa. For these populations, there is a need for adapted and efficient prevention strategies. To date, only open surface stagnant waters or slow running waters have been identified at risk. Research has, to date, provided little information, at individual level, about the reasons for which some individuals become contaminated whereas others do

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not. The epidemiological studies have, above all, used the water sources located close to domestic areas as a reference space for studying the risk factors, and the case-control studies are often retrospective and based on a small number of patients essentially encountered in hospitals. To gain a deeper understanding of the variation in incidence, we developed geographic health surveys in all the "living spaces" frequented by local populations. This approach is innovative in three ways : [1] the scale of the detailed analysis (a district or village) and the combination of GPS-based geolocalisation with a case-control study, [2] the combination of data collection methods derived from approaches developed in social and human sciences (SHS) with microbiological analysis [3] longitudinal follow-up of cases oriented towards direct observation. Based on a field-work in an area in Benin, the aim of this oral free paper is to show the benefits of changing approach and reasoning not according to instantaneous implantations, but on the basis of living spaces containing both "safe" points of access to water and other points of access to water at which humans may be exposed to the M. ulcerans bacterium, and visited for reasons other than the collection of water (agricultural work, children's games …).

Keywords: Buruli ulcer, Geographical variations, Risk factors, Environmental health, Preventive and protective measures

#0004/ ILCABS60

THE MISSING THOUSANDS: BRIDGING THE GENDER GAP IN LEPROSY CASE DETECTION

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Introduction: Early leprosy case detection is essential to achieve all four WHO Global leprosy targets for 2030. However, only 39% of new cases found in 2019-2020 were female. This leaves women vulnerable to a "triple jeopardy" of discrimination due to gender, the stigma associated with leprosy and increased disability because of late diagnosis and treatment.

Description of the case/issue: Although the majority of new cases found globally are male, evidence is that both men and women are equally likely to contract the disease. As around 200,000 new cases of leprosy are diagnosed annually but only 39% of them female, it is suggested that each year over 40,000 new female cases of leprosy may be missed!

TLM programmes in Bangladesh and Nepal working to address the imbalance, found a majority of female cases, in three of its working areas in recent years ranging from 51% to 55% of new cases.

Programmatic efforts to achieve a greater gender parity in case finding have included:

· Partnership with local organisations focused on empowering women

· Ensuring gender balance within the team involved in case detection

· Mass awareness campaigns tailored to ensure they reach women.

· Training female community health volunteers

· Carrying out contact tracing activities at times when women will be available

· Empowering and screening women in self- help groups

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· Improving gender sensitive practises when screening

· Extended contact surveys

· Training a higher proportion of female Government health workers including at grassroots level

Conclusion: It is not inevitable that a greater proportion of male new leprosy cases will be found. These projects have proven that a greater proportion of new

Keywords: Gender, Women, Cases, Detection, Transmission, Leprosy

#0005/ ILCABS62

GLOBAL LEPROSY MAPPING INITIATIVE

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Introduction: There is increasing focus on the need for improved leprosy data and mapping to achieve elimination targets. This is seen in the ILEP Strategy, to have globally consistent leprosy data standards and data collection methodologies, in the Global Leprosy Strategy where a critical action is to utilize mapping tools and surveillance systems, and in the Road Map for NTDs which calls for standardized mapping.

Leprosy case data is often paper-based, and only aggregated data arrive at national levels. Data quality is of concern and analysis is limited. Leprosy mapping activities have been conducted previously, but typically have only included simple prevalence or incidence estimates.

Based on this need, several ILEP partners developed the Global Leprosy Mapping Initiative.

Description of the case/issue: This session will present the Initiative. The overall goal is to develop tools, processes, and best practices to support MOHs to map leprosy, with a focus on country ownership, capacity building, sustainability, and knowledge exchange.

The project will support mapping of leprosy cases registered in the last 5-10 years and develop a systematic approach for mapping future cases. This project will analyze where countries are regarding data collection, reporting, management, and spatial data collection and analysis and provide tools, guidance, and standardized approaches for improved mapping and informed decision making.

Objectives: include recommending standards for leprosy data management, and to establish appropriate workflows and tools to help progress to the next level of data improvement and mapping. This approach will provide examples of improved data-driven decision-making processes for active case finding, surveillance, and PEP based on mapping results.

Conclusion: ILC presents a valuable opportunity to share this Initiative with global leprosy stakeholders. This proposed session will present the Initiative, its objectives, and describe the data progression process, allowing time for discussion feedback and further engagement.

Keywords: Mapping, Cluster, HMIS

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#0006/ ILCABS69

ASSESMENT OF LEPROSY REFERAL CENTERS IN ETHIOPIA

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Introduction: In Ethiopia, leprosy service was integrated into the general health system in 2001 and then after leprosy got less attention at national level and the leprosy control became very poor.

Ethiopia is one of the five African countries with high number of new cases reported every year. ALERT Center in collaboration with MOH has conducted need assessment of existing leprosy referral centers .

Objective: To identify the strength, weakness, challenges and opportunities of leprosy referal centers.

Assess Leprosy rehabilitation services in three of the hospitals (Jimma, Bisidimo, Shashamane)

To capacitate the leprosy referral centers based on the major gaps identified.

Methodology:

• A check list was prepared by a team of experts from ALERT .

• The assesment was conducted by using semi structured checklist.

• The onsite assement was conducted at Shashement hospital, Bisidmo hospital and Jimma University hospital from sept 20 – October 8,2021.

Focused group discussion was also conducted with higher officals of leprosy referal centers and local leprosy association representatives.

Result: Jimma university hospital is not actively engaged in leprosy activities because of their other priorities and lack of attention to leprosy program. Shashemene hospital is providing both out patient and inpatient leprosy service and has orthopedic workshop with all the necessary equipment but the workshop has been closed for the last two years because at present there is no trained orthopedic professional.Bisidimo hospital is providing good leprosy service except that they can not provide leprosy corrective surgery because of lack of trained surgeon . Conclusion: Rehabilitation service is the most neglected part in almost all leprosy referal centers .

Keywords: ALERT: All Africa Leprosy Education, Rehabilitation and training Center.

#0007/ ILCABS90

CLINICO-EPIDEMIOLOGICAL TRENDS OF LEPROSY IN KARAIKAL DISTRICT, INDIA AFTER ELIMINATION OF LEPROSY –A TEN YEAR RETROSPECTIVE STUDY

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Introduction: Leprosy (Hansen's disease) is an age-old chronic infectious condition. India achieved Leprosy "elimination" in December 2005, but the disease remains a major public health concern because India

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still has the highest leprosy burden in the world. According to the National Leprosy Elimination Program (NLEP), a total of 114451 new cases were detected- between 2019 and 2020 and about half that many between 2020 and 2021.

Objective: This study was designed to analyze the clinico-epidemiological trends of leprosy in a coastal district for the past 10 years.

Materials and Methods: Retrospective statistical analysis of data obtained from the health department, Karaikal, from 2012 to 2022. Newly diagnosed and treated cases of leprosy were included in this study based on WHO disease types; age, gender and grade of disability of victims, as well as disease prevalence and annual new case detection rates.

Results: A total of 45 new cases of leprosy have been reported, among which 28 males, 11 females and 6 children. In total, 49 patients were released from treatment and 33 were under treatment. The most common were multibacillary, with 24 cases, while 21 cases were paucibacillary. Grade II disability was observed in three cases. Leprosy prevalence gradually increased from 0.05% to 0.14%. However, annual new case detection rate dropped from 1.9 to 0.90. An increase in ANCDR was noted between 2015 and 2018 and then gradually decreased.

Limitations: Particular district external validity could not be determined.

Conclusion: Despite the statistical elimination of leprosy, detection of new cases continues. The impact of population explosion versus leprosy, a disease of extremely long incubation period, (leprosy) has been callously overlooked. Therefore, a need to continue leprosy control activities with full vigor to achieve the "Leprosy Free India" vision by the year 2030.

Keywords: Leprosy, Epidemiological trend, Retrospective study, Leprosy Free India

#0008/ ILCABS108

PRELIMINARY RESULTS OF THE PEP4LEP PROJECT IN MOZAMBIQUE: COMPARING THE EFFECTIVENESS AND FEASIBILITY OF A SKIN CAMP INTERVENTION TO A HEALTH CENTRE-BASED INTERVENTION FOR SDR-PEP ADMINISTRATION

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. The PEP4LEP project will compare two integrated skin screening interventions combined with the distribution of a single dose of rifampicin as chemoprophylaxis for contacts of leprosy patients in Ethiopia, Mozambique and Tanzania.

Objectives: The implementation of the project in Mozambique faced some difficulties such as the importation of rifampicin into the country, and the restrictions of the COVID-19 pandemic. This abstract aims to present the preliminary results on the implementation of the project.

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Patients / material and methods: Between October 2018 to February 2022, two training and refresher sessions were performed with 44 health workers, 66 community volunteers. Between December 2021 and March 31, 2022, the first inclusion of index patients and their contacts in the health centre-based intervention, and two skin disease screening campaign sessions in the community-based intervention.

Results: The skin camp intervention involved 10 index patients and 277 contacts. Among the screened contacts, 247 (89.2%) received SDR-PEP, and 103 (37.2%) contacts were diagnosed with other skin diseases such as pruritic papular eruption, pityriasis versicolor, psoriasis, vitiligo and were offered free treatment or were referred to the reference hospital. In the health centre-based intervention, 48 index patients were included and 292 of their contacts were screened, of which 259 (88.7%) contacts received SDR-PEP. Across both interventions, 19 new leprosy cases were diagnosed (9 from skin camps, 10 in health-centre screening) of which 7 (36.8%) were children under 15 years of age and 10 (52.6%) were female.

Limitations: The findings presented here are very preliminary and recruitment must continue for longer in order to perform a meaningful comparison of both interventions.

Conclusion: Despite the difficulties because of COVID-19, the PEP4LEP project is ongoing in Mozambique, finding new leprosy patients and many patients with skin diseases in both interventions.

Keywords: Keywords: inclusion, Index patient, Contact, Single dose of rifampicin, Post-exposure prophylaxis

#0009/ ILCABS123

AUDIT OF POST EXPOSURE PROPHYLAXIS PROGRAMME FOR HOUSE HOLD CONTACTS OF LEPROSY IN KIRIBATI

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Introduction: Kiribati has high rates of leprosy (15/10,000 population). Most of the population is located in South Tarawa and Betio (65,000) and the remainder (55,000) on 20 atolls dispersed across >1 million square miles of ocean. Modeling predicts that post-exposure prophylaxis (PEP) with single dose rifampicin (SDR) for household contacts should produce a gradual, sustained fall in new case detection rates (NCDR).

A PEP programme for household contacts (HHCs) beginning in 2018, aimed to empower prevention through education, engagement, delivery of two annual doses of SDR, and follow up of contacts. Contacts included historic (2010-17) and new HHCs from 2018. The target SDR coverage was >80%.

Objectives:

1. To determine the population coverage of SDR in Kiribati.

2. To document the reasons SDR was unable to be given.

Methods: Retrospective analysis of prospectively-collected, standardized surveillance data held jointly by the National Leprosy Clinic (NLC) in Kiribati and the Pacific leprosy Foundation in Christchurch.

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Results: From 2010 to 2020 there were 1,638 new cases of leprosy and 12,344 HHCs. After 601 exclusions (previous leprosy/TB treatment; 224, suspected leprosy; 71, pregnancy; 72, age <2 years; 183, illness; 36, died; 3 and other; 12) 11,743 were eligible for SDR. 1,338 individuals did not receive PEP (717 not traced, 607 not documented, 8 refused). The first dose was administered to 10,411 (89%) HHCs. SDR delivery was higher amongst new HHCs (97%) than historic HHCs (87%). Time to SDR delivery was shorter in densely populated areas (median 101 v 344 days).

Limitations: The reasons for lack of contact tracing were not always documented in the database.

Conclusions: The SDR chemoprophylaxis project has been successful, and was widely accepted by both historical and new HHCs. Movement of people within Kiribati hampered contact tracing.

Keywords: Household contacts, Post exposure chemoprophylaxis, Rifampicin

#0010/ ILCABS129

IMPACT, SUSTAINABILITY, AND LESSONS LEARNED OF THE LEPROSY POST-EXPOSURE PROPHYLAXIS (LPEP) PROGRAM THREE YEARS AFTER COMPLETION OF THE PROGRAM

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Introduction: The largest multi-country study on implementing SDR-PEP in routine leprosy control was the Leprosy Post-Exposure Prophylaxis (LPEP) Program, 2015 to 2019. The LPEP Program explored the feasibility and impact of routine contact screening and SDR-PEP administration.

Objectives: To assess the impact and sustainability and document the lessons learned of the LPEP Program in Brazil, Cambodia, India, Indonesia, Nepal, Myanmar, Tanzania and Sri Lanka after the program.

Methods: We used a mixed-methods approach. We aimed to include at least one person working for an NGO and one working for the government in each country involved in LPEP. Participants were interviewed and asked to gather existing data of the main leprosy indicators in the LPEP areas before, during and after LPEP. Framework analysis was used for the qualitative data. For the quantitative data, (changes in) coverage in 2014 and 2021 were calculated, and new case detection rates were compared.

Preliminary results: Data collection is ongoing (May 2022). Participants identified several challenges related to integrating the LPEP activities into the routine program, including: (1) lack of structural funding for the activities; (2) difficulties in obtaining rifampicin; (3) lack of (trained) health staff, and (4) COVID-19. Facilitators of the approach, according to the participants, include: (1) government ownership and (financial) support; (2) targets and guidelines for SDR-PEP implementation; (3) community ownership, and (4) endorsement of the approach by international stakeholders, like WHO. Participants emphasized the importance of including persons affected by leprosy at all stages, advocacy, and of sharing experiences between stakeholders from different countries.

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Limitations: The participants had different perspectives depending on their tasks and responsibilities related to the LPEP Program.

Conclusions: Systematically looking at what has happened since the end of LPEP can provide us with information to continue to improve the use of chemoprophylaxis in endemic countries.

Keywords: Leprosy control, Chemoprophylaxis, Rifampicin, SDR-PEP, Routine, LPEP

#0011/ ILCABS132

INTEGRATED SKIN SCREENING APPROACH COMBINED WITH LEPROSY CHEMOPROPHYLAXIS ADMINISTRATION: PRELIMINARY RESULTS FROM THE PEP4LEP PROJECT IN TANZANIA

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Introduction: A wide range of diseases, including some Neglected Tropical Diseases (NTDs), prevails on the skin. A timely diagnosis may prevent lifelong complications of skin NTDs like leprosy. Integrated skin screening is an approach used in PEP4LEP, a research project in Ethiopia, Mozambique and Tanzania in which leprosy chemoprophylaxis is provided.

Objectives: This study presents preliminary findings on integrated skin screening in three Tanzanian districts, combined with single-dose rifampicin leprosy post-exposure prophylaxis (SDR-PEP) distribution.

Patients / material and methods: PEP4LEP is a two-arm, cluster-randomized implementation trial for leprosy patients' contact screening and chemoprophylaxis distribution. The project compares two implementation methods: 1) via community skin camps, including the twenty closest households near a leprosy index patient; and 2) via health facilities, including the household contacts of an index patient.

Results: A total of 4568 contacts - 4142 (90.6%) via 38 skin camps - were screened for skin conditions from December 2019 to April 2022 in Mvomero, Morogoro and Lindi district in Tanzania. Of all screened contacts, 2370 (51.9%) had skin diseases, among those 2283 (96.3%) were screened during skin camps. Of all contact screened, 30 (0.7%) were newly diagnosed with leprosy, of which 24 (80%) occurred during the skin camp intervention. Other frequently detected skin diseases were: tinea capitis, pityriasis versicolor, atopic dermatitis, tinea cruris and tinea corporis. Diagnosed skin NTDs - besides leprosy - included: scabies, onchocerciasis and deep fungal infections. Of all contacts included, 4214 (92.3%) received SDR-PEP, of which 3807 (90.3%) took place via skin camps. No contacts refused SDR-PEP.

Limitations: These findings are preliminary and recruitment will continue for a longer period in Tanzania before performing in-depth analysis.

Conclusion: Integrated skin screening may increase chances of revealing a range of skin conditions in communities, including skin NTDs like leprosy, especially

Keywords: Leprosy, Skin NTD's, Integrated, Leprosy chemoprophylaxis

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#0012/ ILCABS157

LEPRA'S MODEL OF ACTIVE CASE FINDING (ACF) - RAPID ENQUIRY SURVEY (LEPROSY) IN LOW AND HIGH ENDEMIC DISTRICTS IN BIHAR, INDIA.

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Introduction: Prevalence rates in leprosy are very sensitive to factors such as treatment duration and case-finding methods. Increasing numbers of child cases and higher levels of disability among new cases show continued transmission of disease and a late detection of cases. LEPRA's approaches of survey was combined active case-finding tools: Rapid Enquiry survey (RES), School Survey and Special population (Brick Factory and Mahadalit).

Objectives: To detect cases at the earliest stage and find missed out cases and show a model of cost effective and produce high yield.

Methodology: RES is a method to cover all the population h-t-h rapidly, which was conducted in one Block of low endemic Samastipur and high endemic Munger district. A two staff trained in leprosy conducted the survey with showing flash cards signs and symptoms of leprosy with support of PRI members and mobile IEC van. The suspect was confirmed by the trained experienced staff of LEPRA's and District Nucleus Team members of NLEP.

Results: In low endemic 126,841 population was enumerated and 77,142 (61%) were examined and registered 190 new cases in low endemic district of Samastipur. 28 (15%) child cases, 107 women (56%) and 9 (4.65%) people with disability among new cases. In high endemic 95864 populations enumerated and 62,282 (65%) were examined and 108 new cases put under the treatment. The child cases were detected 21 (20%), women cases 57 (55%) and disability proportion was 8 (4.8%).

Conclusion: The result shows that there are no difference in low and high endemic block. Good IEC and ownership of PRI have played major role in detecting cases. Amongst new cases 148 (77.8%) cases were from Mahadalit population. The success of this survey is adopted by NLEP Bihar and LCDC campaign designed and conducted for Mahadalit

Keywords: RES- Rapid Enquiry Survey, IEC- Information Education Communication, DNT- District Nucleus Team, PRI- Panchayat Raj Institution

#0013/ ILCABS158

INTEGRATED APPROACH OF ACTIVE CASE FINDING (LEPROSY AND LYMPHATIC FILARIASIS) IN BIHAR, INDIA – A LEPRA EXPERIENCE.

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Introduction: Bihar is one of high endemic states for leprosy and lymphatic Filariasis in India. The state is registering more than 16000 new cases annually before COVID-19, and also LF mf rate found 17% positive in transmission assessment survey (TAS) in the district. As per recent Government guidelines, screening of

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the individual's h-t-h should be done once per year in low-endemic areas and twice per year in high-endemic areas.

Objective: To detect new cases at the earliest stage of leprosy and line listing of LF cases for breaking chain of transmission.

Methodology: LEPRA along with the district officials undertook ACF in Integrated mode with five teams, constituted by two member's in 33 villages of Ariari block of Sheikhpura district of Bihar. IEC through mobile IEC van was done 3-4 days before of search. The female suspects were screened by local ASHA workers. The data was collected through the ODK application in tablets. The confirmed cases were registered at PHC for treatment.

Results: A total population of 87,011 was enumerated and 61,797 (71%) were examined. We found 28 (PB-12, 16-MB) new leprosy cases among 20 villages. Of the total 2 (7.1%) were child cases. Clinically, we also listed 76 persons with LF comprising Elephantiasis 46% (35) and 54% (41) had hydrocele. Interestingly, we have found 13 new cases in 10 villages, where no cases has reported since last three year.

Conclusion: This finding emphasized the need for integrating a case detection approach for Skin NTDs for optimal utilization of resources. We have collected the data in ODK tools and given a very good geographical distribution of cases (Zero tagging) which will help in monitoring/supervision, surveillance and also formation of Self-Support group and home based care services. This model is very cost effective.

Keywords: NTD - Neglected Tropical Diseases, MDA - Mass Drug Administration, ACD_RS- Active case detection and Regular surveillance, TAS- Transmission Assessment Survey, H-t-h- house to house, LF-Lymphatic Filariasis

#0014/ ILCABS180

MYCOBACTERIUM LEPRAE TRANSMISSION CHARACTERISTICS DURING THE DECLINING STAGES OF LEPROSY INCIDENCE: A SYSTEMATIC REVIEW

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Introduction: Leprosy is an infectious disease caused by Mycobacterium leprae. As incidence begins to decline, the characteristics of new cases shifts away from those observed in highly endemic areas, revealing potentially important insights into possible ongoing sources of transmission.

Objectives: We aimed to investigate whether transmission is driven mainly by undiagnosed and untreated new leprosy cases in the community, or by incompletely treated or relapsing cases.

Patients / material and methods: A literature search of major electronic databases was conducted in January, 2020 with 134 articles retained out of a total 4318 records identified. We presented quantitative data from leprosy case records with supporting evidence describing the decline in incidence across several contexts.

Results: From 3950 leprosy case records collected across 22 low endemic countries, 48.3% were suspected to be imported, originating from transmission outside of the country. Most cases were multibacillary (64.4%) and regularly confirmed through skin biopsy, with 122 cases of suspected relapse from previous leprosy treatment. Family history was reported in 18.7% of cases, while other suspected sources included travel

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to high endemic areas and direct contact with armadillos. None of the countries included in the analysis reported a distinct increase in leprosy incidence in recent years.

Limitations: Due to the nature of the individual case data collected it was not possible to perform any meaningful time trend analyses or make projections for individual countries.

Conclusion: Together with socioeconomic improvement over time, several successful leprosy control programmes have been implemented in recent decades that led to a substantial decline in incidence. Most cases described in these contexts were multibacillary and numerous cases of suspected relapse were reported. Despite these observations, there was no indication that these cases led to a rise in new secondary cases, suggesting that they do not represent a large ongoing source of human-to-human transmission.

Keywords: Leprosy, Transmission, Control, Epidemiology

#0015/ ILCABS181

ESTABLISHING A STANDARD METHOD FOR ANALYSING CASE DETECTION DELAY IN LEPROSY USING A BAYESIAN MODELLING APPROACH

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Introduction: Leprosy is an infectious disease caused by Mycobacterium leprae and remains a source of preventable disability if left undetected. Case detection delay is an important epidemiological indicator for interrupting transmission and preventing disability in a community. However, no standard method exists to effectively analyse and interpret this type of data.

Objectives: We aimed to evaluate the characteristics of two existing case detection delay datasets, then fit Bayesian models to each to assess which probability distribution best describes variation in observed case detection delays and estimate the effects of individual factors.

Patients / material and methods: Two sets of leprosy case detection delay data were evaluated: a cohort of 183 patients from the PEP4LEP study in high endemic districts of Ethiopia, Mozambique, and Tanzania; and self-reported delays from 87 individuals from 8 low endemic countries collected as part of a systematic literature review.

Results: For both datasets, detection delays were best described with a lognormal distribution combined with covariates age, sex and leprosy subtype. On average, patients with multibacillary (MB) leprosy experienced longer delays compared to paucibacillary (PB) leprosy, with a relative difference of 1.51 (95% Bayesian credible interval (BCI): 1.10, 2.09). Those in the PEP4LEP cohort had 1.40 (95% BCI: 1.01, 1.95) times higher case detection delay on average compared to the self-reported patient delays in the systematic review.

Limitations: There were some important limitations, namely the accuracy and precision of the delay estimates, as well as the potential for patient recall bias.

Conclusion: We recommend using the lognormal model presented here to analyse leprosy case detection delay over a classical non-parametric approach. This methodology could be applied to studies in the field of leprosy other skin-NTDs, including PEP4LEP where the primary outcome measure will be reduction in case detection delay.

Keywords: Leprosy, Case detection delay, Modelling

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#0016/ ILCABS188

MODELING THE FUTURE IMPACT OF LEPVAX VACCINE ON LEPROSY BURDEN

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Introduction: LepVax, a leprosy-specific subunit vaccine, is currently going through Phase I trial. The vaccine is promising since it protects people from infection (prophylactic effect) and against nerve damage and disability (therapeutic effect). As LepVax is still under development, it is important to know its added value in the future.

Objective: To investigate the potential future impact of the LepVax vaccine on leprosy burden.

Methods: We developed a model to predict future burden for all leprosy endemic countries with and without the introduction of LepVax. Leprosy data were obtained from the GBD study including new cases detected and prevalence per country by age, sex, and disability grade from 1990-2019. Demographic data are obtained from United Nations Population dynamics. In different scenarios, we varied the year of introduction (2025 to 2033), efficacy (10-80%), and coverage (10-100%) of LepVax. Model outcomes include (averted) prevalent cases and disability-adjusted life-years. Predictions were made until 2040.

Results: We predicted that a vaccine assuming 50% efficacy, 90% coverage and introduced in 2030 could avert around 565,000 prevalent cases or 140,000 DALYs worldwide over a period until 2040. The impact varied with efficacy (10% to 80%) and time of introduction (2025 to 2033) ranging between 74,000 to 1,448,000 averted cases and 18,000 to 358,000 averted DALYs. There were large variations in impact between countries. A larger impact was predicted in countries with a currently stable or increasing burden, while the impact was limited in countries with a declining trend.

Limitations: Data on grade-1 and -2 disability for all countries were primarily based on age-sex patterns from Brazil.

Conclusion: LepVax could potentially have a significant impact on the leprosy burden. Even with low efficacy and late introduction a positive impact could be observed. Countries with a stable or increasing leprosy burden trend would benefit the most.

Keywords: Vaccine, Modeling, Impact, Burden, Prevention

#0017/ ILCABS197

CONTACT SCREENING OF HISTORICAL INDEX CASES AND THEIR HOUSEHOLD CONTACTS IN A SELECTED DISTRICT IN SRI LANKA

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Introduction: Leprosy is a chronic disease with an incubation period of 2-10 years approximately. As a result, the screening of contacts has become a tedious task, mainly because the patients cannot recollect all their contacts from more than two years duration. Those that have close contact for a longer duration with an untreated leprosy patient is at high risk of getting infected.

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Objectives: To screen all index cases and their contacts diagnosed from 2011 from the district of Polonnaruwa in Sri Lanka

Methodology: All index cases detected from 2011- 2017 were line listed along with the household contacts at the time of diagnosis. All index cases and the contacts were screened in their homes for any suspected lesions. Those suspected were referred to the dermatology clinic and followed up.

Results: From 2011 to 2017, there were 423 index cases and 340 (80.3%) were screened. Of the total, 248 (58.6%) were males. Eight defaulters were identified and was referred for testing. Of them 04 (50%) were positive and treatment was initiated. In addition, seven other Index cases were referred on suspicion and one was tested positive and on treatment now. There were 17 index cases who had a family member with leprosy. Of the total 1005 contacts screened two were found to be positive.

Limitations: Through this study only the household contacts were screened. The contacts of the index cases and the contacts who have changed their residence could not be screened.

Conclusions: Systematic screening of all index cases and contacts at least every five years is of importance as this would enable early detection of new cases among the household contacts. This needs to be strengthened island wide to obtain better results.

Keywords: Contact screening, Historical cases

#0018/ ILCABS201

INITIATIVE TO TACKLE URBAN LEPROSY PROBLEMS IN WEST BENGAL

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Introduction: Leprosy is a major problem in urban areas of West Bengal, India. Current health services are provided primarily in tertiary hospitals. Those who are suspected of leprosy are diagnosed at a late state through self-reporting, with poor treatment compliance. To tackle these problems, a model for early case detection and treatment was developed.

Objectives: To develop a model in urban areas for early case detection and treatment.

Methodology: Mapping of existing public health facilities in urban areas was undertaken. Under the National Urban Health Mission (NUHM), the state government has established urban primary health centers (UPHC) and appointed medical officers (MOs) and general health care (GHC) staff. The frontline workers (FLW) previously working for immunization-related activities are given responsibility to look after 1000 population to provide primary health care services. A decision was taken to include the leprosy programme under the NUHM, and relevant stakeholders were sensitized on active case detection and treatment at state and district levels. FLW were trained to identify suspect signs, and they referred those with suspect signs of leprosy for confirmation and treatment at UPHC.

Results: More than 400 Medical officers, over 10,000 front line workers and 500 supervisors were trained across 250 UPHC and are providing leprosy services in 127 urban bodies. The treatment completion rates (TCR), which used to be 78% in 2017-18 has increased to 96% in 2021-2022, while the Grade 2 disability (G2D) percentage among new cases has reduced from more than 10% in 2017-2018 to 1% in 2021-2022.

Limitations: None

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Conclusion: The model has been in place for more than 2 years and it had addressed several leprosy-related issues in urban areas, such as late detection, poor treatment compliance, and centralized service delivery. A strong coordination needs to be developed at different levels.

Keywords: NUHM, UPHC

#0019/ ILCABS209

LEVERAGING EXISTING COMMUNITY BASED MATERNAL AND CHILD HEALTH STRUCTURES TO INTEGRATE COMMUNITY AWARENESS, CASE DETECTION AND COMMUNITY-BASED REHABILITATION FOR LEPROSY AND LYMPHATIC FILARIASIS

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Introduction: While integrated approach to tackling the burden of neglected tropical diseases (NTDs) is endorsed by the WHO, limited evidence exists on how integrated approach can be operationalized.

Objective: We aimed to understand how community based maternal and child health (MCH) services can be operationalized for case detection, management, and community-based rehabilitation of leprosy and Lymphatic Filariasis (LF) within the public health system in Nepal.

Material and Methods: A development project site in Kapilvastu, Nepal which is integrating MCH and NTD program through health systems strengthening served as the study site for this qualitative operations research. Semi-structured guides were used to conduct in-depth interviews and focus group discussions with health workers, female community health volunteers (FCHV), self-help groups, health mother's groups, community leaders and program staff. NVivo was used to code themes using a mix of open coding and thematic coding.

Results: Results from 49 participants shows operationalization of clinical level passive and active leprosy and LF screening during outpatient clinic, antenatal care check-ups, labor and delivery, and community clinics where suggestive symptoms were investigated to rule out leprosy or LF and to initiate early treatment. Case detection and community awareness also occurred through FCHVs who referred cases to health posts and their community connections were leveraged for long-term patient management through home visits. Self-help groups were functioning without integration with existing MCH services. Inadequate number of trained health workers and stigma and discrimination were identified as major challenges to integration within MCH services.

Limitations: The findings may not be generalizable because the study covered a very small and unique geographic region.

Conclusion: The findings suggest that participant identified challenges needed to be addressed to systematically operationalize and sustain integration of leprosy and LF case detection and management within MCH services. We provide recommendations to make integration more effective.

Keywords: Leprosy and MNH integration, Integration, Routine screening of leprosy, Health workers capacity, NTD integration

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#0020/ ILCABS235

COMMUNITY BASED LEPROSY CONTROL MODEL SUPPORTED BY SECONDARY LEVEL LEPROSY REFERRAL SYSTEM IN REDUCING DISEASE BURDEN DUE TO LEPROSY; A PROMISING LEARNING FROM 2 OUT OF TOP 10 LEPROSY ENDEMIC DISTRICTS IN INDIA.

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Introduction: Declaration of elimination of leprosy and integration of leprosy services in General Health Care System has posed many challenges for programme managers to achieve objectives of National Leprosy Control Programme (NLEP). Constructive community participation can be a viable solution. The paper intends to introduce community based leprosy control model and discusses operational aspects including the role of volunteers from community as Community Counselors (CC) in complementing NLEP.

Objectives: To assess the performance of CC in community level leprosy control interventions in perspective of new case detection and reducing disability burden among leprosy affected.

Material and methods: Study was conducted during 2019 to 2021 in eight blocks in two out of top ten leprosy endemic districts in India. 30 CCs from local community were selected, trained, capacitated to undertake leprosy control interventions in the community. Clinical, technical and logistic support was provided through block level Leprosy Referral Centres (LRC).

1+ million population and 750+ leprosy affected with visible disabilities were covered.

Results: 7,56,983 rural and tribal population was surveyed for leprosy.

1,697 individuals were identified with leprosy suspicious signs.

701 new leprosy cases were confirmed; IoS- 41.6%; NCDR- 92.6/1 lac population.

262 disabilities in 223 leprosy affected were recovered, without surgical intervention, to near normal including 192 plantar ulcers and 43 mobile claw hands.

Limitations: Covid 19 pandemic disrupted surveillance activities for 9 months during 2020 that had restricted the results.

Conclusion: A community members if sensitized, trained, and empowered in leprosy allied out-reach services can be an effective means in developing viable community based leprosy control model. Systematically monitored community based leprosy control project can complement NLEP in achieving its objectives.

The authors recommend NLEP to incorporate community based leprosy control interventions under national programme in partnership with Leprosy Organisations under 'NLEP NGO Schemes'.

Keywords: Community based approach, Leprosy control interventions, Case detection, Community Counselors, Reducing disability burden

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#0021/ ILCABS238

CURRENT MODES OF DETECTION OF NEW INFECTIOUS LEPROSY CASES (SKIN SMEAR POSITIVE) REGISTERED AT LEPROSY REFERRAL CENTRES (LRCS) IN 11 HIGH ENDEMIC DISTRICTS OF MAHARASHTRA.

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Introduction: "Early detection and adequate MDT" in leprosy affected is crucial to ensure complete cure as well as is the key in breaking the chain of transmission, thereby curbing the leprosy incidence in the community. Therefore focus on early detection of untreated cases of public health importance (skin smear positive) and their adequate MDT is decisive to hasten the process of leprosy eradication.

Objectives: To understand the current pattern of modes of detection of untreated skin smear positive leprosy cases and to suggest the means of their early detection.

Material and methods: The study is based on the analysis of modes of detection of 927 skin smear positive leprosy cases out of total 6,316 new leprosy cases registered at Leprosy Referral Centres (LRCs) in 11 high-endemic districts during 2019-2021. Untreated skin smear positive case for AFB is considered as an infectious case.

Skin smears were collected by trained leprosy technicians and microscopy done at the central smear laboratory of the organisation.

Results:

204 (22%) out of 927 cases were detected by active search through surveys or special case detection campaigns.

189 (20%) cases referred by ASHAs.

357 (39%) referred by doctors from PHCs, OPDs of rural / sub-district hospitals and in Private Practice.

177 (19%) reported voluntarily or directed by other patients / their relatives.

Limitations: The analysis is based on 1,479 (46%) of the 3,250 total new MB leprosy cases subjected to skin-smear investigation and modes of referral recorded at the LRCs.

Conclusions: The study reveals that contribution of active search as well as referrals from ASHAs in detecting infectious leprosy cases is very limited. Therefore, it is imperative to make paradigm modifications in training and monitoring of case detection mechanism under national programme especially for ASHAs and primary level health workers.

Keywords: Leprosy case detection, Infectious leprosy case, Skin smear, Breaking the chain of transmission, ASHA, Active search

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#0022/ ILCABS240

PARTNERSHIP BETWEEN SASAKAWA-INDIA LEPROSY FOUNDATION AND CONFEDERATION OF INDIAN INDUSTRY: A CASE FOR ENGAGEMENT OF CORPORATES IN LEPROSY PROGRAM

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Introduction: Partnerships in leprosy program have hitherto involved engagements between government, international organizations and local NGOs working traditionally in the field of leprosy. Corporate sector presents immense opportunities in tackling social and development issues through resources in form of CSR funds and volunteering. However, they have been ignored as an important stakeholder resulting in a lack of awareness about the disease among them.

Description: Sasakawa-India Leprosy Foundation (S-ILF) works towards mainstreaming persons affected by leprosy and their families through socio-economic empowerment, thereby fighting stigma and restoring dignity. Confederation of Indian Industry (CII) is a non-government, not-for-profit, industry-led and industry-managed organization, with around 9000 members from the private as well as public sectors. A MoU was signed between S-ILF and CII for raising awareness about leprosy and sensitizing corporate leaders. During 2020-22, more than 750 corporate members have been sensitized through various CII platforms, including State and Regional Council meetings. Myths and misconceptions regarding prevalence, transmission and curability of leprosy were addressed during these interactions. Outreach to corporate sector helped identify corporate 'champions' as advocates and commitment was exhibited by their leadership. Premier companies such as Bajaj Auto Limited and Tata Steel Foundation have now partnered with S-ILF to reduce vulnerability to poverty through livelihood opportunities in the states of Maharashtra and Jharkhand.

Conclusion: Awareness generation activities and socio-economic empowerment of persons affected by leprosy is a major tool against stigma and discrimination. Apart from the obvious access to resources through CSR funds, partnering with corporate sector presents opportunities to sensitize, help mitigate stigma and discrimination and influence the businesses towards creating an enabling environment. Indeed, for a country with the highest burden due to leprosy, success would be determined by strengthened partnerships between traditional partners as well as engagement with non-traditional stakeholders such as corporate sector to influence socio-economic change.

Keywords: Partnership, Corporates, Stakeholders, Awareness-generation

#0023/ ILCABS241

AN APPROACH TO TACKLE LEPROSY PROBLEM IN URBAN AREAS IN INDIA.

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Introduction: Urban Leprosy is a major problem in India with nearly 30% population living in urban areas, where they are mostly dependent on Medical Colleges, Corporate hospitals. Comprehensive primary health services infrastructure is not well developed like rural areas.

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In urban areas, self-reporting is quite common in late stages often presenting with disability and treatment is usually irregular.

Objectives: Early cases detection and management in urban local bodies (ULBs)

Follow up of release from treatment (RFT) cases and reaction cases.

Ensure Post Exposure Prophylaxis (PEP).

Materials and Methods: Under NUHM, urban primary health centers (UPHC) have been constructed in ULBs.In the 144 wards of Kolkata Municipal Corporation there is an UPHC along with a Dy. CMOH-II for monitoring all public health activities. Each UPHC has one Full-Time Medical Officer (FTMO) and one Part-Time Medical Officer (PTMO) along with other support staff.. Each ULB has a Nodal Officer under whom urban ASHAs work.

Suspect referral is carried out by urban ASHAs to FTMOs & PTMOs, for diagnosis and treatment.

Tertiary care institutions where self-reporting patients present are acting as referral units to UPHC, slit skin smear and Reconstructive Surgery.

Results: Trained staff in 126 ULBs

PR rate decreased to 0.46 in 2021 from 0.82 in 2018 .

The treatment completion rate improved to 93.47% in 2021 from 83.05% in 2018 .

Limitations: Majority of FTMOs, PTMOs on verge of retirement

Low budget in IEC

Low budget for training of Nodal Officers and Health Care Providers

Less PB case detection

Low PEP coverage

Conclusion: Inter-sectoral Co-ordination of Urban Development and Municipal Affairs & Department of Health and Family Welfare is the need of the hour with special impetus for improving Post Exposure Prophylaxis in ULBs

Keywords: ULB, RFT, PEP, FTMO, PTMO, ASHA

#0024/ ILCABS242

A HEALTH SYSTEM STRENGTHENING JOURNEY IN BANGLADESH

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Introduction: Ten years back leprosy control and management in Bangladesh were placed relatively low on the public health agenda, noted by non-governmental organisations (NGOs) involved in leprosy.

Goal: To establish a comprehensive and fully functional response to leprosy control and management in Bangladesh, in a way that is replicable to other neglected tropical diseases (NTDs) in Bangladesh and in other endemic countries.

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Methods: Establishing a long-term collaboration project between National Leprosy Programme (NLP) and NGOs around health systems strengthening, in particular introducing clear lines of responsibility, with a corresponding set of guidelines.

Results: Since its inception in 2013, the project strengthened the capacity among central health authorities within NLP, and among district and sub-district health authorities. With a clear assignment and lines of responsibility, investment in knowledge and skills, NLP now manages multidrug therapy distribution, recording and reporting; owns key underlying documents including training manuals, registers, the patient information system; is in charge of entering leprosy data in the District Health Information System (DHIS-2); and launched a dedicated website. Peripheral government departments have responsibility for raising awareness, referral of suspected leprosy cases, recording and reporting of new cases and management of confirmed cases. Efforts culminated in The Honourable Prime Minister giving a personal commitment to achieving Zero Leprosy.

Limitations: There is no appropriate control group against which to measure impact. Also, the intervention evolved over three different phases since 2013, including changes in partnership.

Conclusion: Integrating leprosy services, backed by appropriate training and with government ownership, holds promise for sustainable leprosy services. Maintaining a training agenda and a steady inflow of patients ensures retention of skills, appropriate care and reduction of stigma and prejudice. As such, the project is replicable to other NTDs and other endemic countries.

Keywords: Health System Strengthening (HSS), National Leprosy Programme, Partnership, Capacity building, District Health Information System (DHIS-2)

#0025/ ILCABS270

HEALTHCARE FACTORS OF DELAYED LEPROSY CASE DETECTION: A SYSTEMATIC REVIEW

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Background: and Aim. Grade 2 disability (G2D) is still a public health burden in new leprosy cases worldwide. It is often associated with delayed leprosy diagnoses that healthcare systems should play a crucial role in preventing. This systematic review aimed to identify healthcare factors related to delays in case detection of leprosy.

Methods: PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) was used as a guideline in this research. The study protocol was registered in the PROSPERO (International Prospective Register of Systematic Reviews) with reference code CRD42020189274. Data was collected from five electronic databases: Embase.com, Medline All Ovid, Web of Science, Cochrane CENTRAL, and the WHO Global Health Library.

Results: After applying the selection criteria for original empirical studies and removing duplicates, we included 20 papers from 4313 records. They were conducted in ten countries and published between January 1, 2000, and January 31, 2021. We identified three categories of healthcare factors related to the delayed case. 1) Macrolevel factors, such as i) financial and logistic issues and poor geographical access to health services (which we classified as barriers); ii) the decentralization and integration of healthcare services (classified as facilitators); and iii) health service organization and management (classified as factors underlying the

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microlevel factors). 2) Microlevel factors, such as problems or shortages involving referral centers, healthcare personnel, and case-detection methods. 3) Intermediate factors, such as misdiagnosis, higher numbers of consultations before diagnosis, and the inappropriate healthcare services visited by people with leprosy.

Limitations: There is no generalization, only a descriptive analysis and included only studies in English.

Conclusions: Delays in leprosy case detection are due mainly to misdiagnosis. It is crucial to improve the healthcare staff's training and capacity and ensure the sustainability of leprosy control within integrated health services.

Keywords: Health care, Case detection delay, Systematic review

#0026/ ILCABS273

DETERMINING TARGET POPULATIONS FOR LEPROSY PROPHYLACTIC INTERVENTIONS: A HOTSPOT ANALYSIS

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Introduction: Leprosy incidence remained at around 200,000 new cases globally for the last decade. Current strategies to reduce the incidence include early detection and providing post-exposure prophylaxis (PEP) to at-risk populations. Because leprosy is distributed unevenly, it is crucial to identify high-risk clusters of leprosy cases using Geographic Information Systems (GIS) methodology in order to target leprosy control activities.

Objectives: To establish a GIS-based methodology for leprosy programs to optimize the effectiveness and efficiency of their control activities by identifying clustering of leprosy cases and to determine optimal target populations for prophylactic interventions.

Patients/material and methods: The geolocations of leprosy cases registered from 2014 to 2018 in two districts in Indonesia were collected. A hotspot analysis was performed using the Heatmap tool of QGIS to identify clusters in both areas. Fifteen cluster settings were compared, varying the heatmap radius (500 to 2500m) and the density of clustering (low, moderate, and high). For each cluster setting, we calculated the number of cases in clusters, the size of the cluster (km2), and the total population targeted for PEP under various strategies.

Results: The proportion of total cases within identified clusters increased with heatmap radius and ranged from 3% to 100% in both areas. The proportion of the population in clusters targeted for PEP decreased with heatmap radius from 100% to 5% in high and from 88% to 3% in moderate and low-density clusters. We have developed an example of a practical guideline to determine optimal cluster settings based on a given PEP strategy, distribution of cases, resources available, and proportion of population targeted for PEP.

Limitations: The cut-off values to define low, moderate, and high-density clustering were chosen arbitrarily.

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Conclusion: Policy and operational decisions related to leprosy control programs can be guided by a hotspot analysis which aid in identifying

Keywords: Leprosy, Post-exposure prophylaxis, Geospatial analysis, Hotspots, Targeted interventions

#0027/ ILCABS276

IDENTIFYING CLUSTERS OF LEPROSY PATIENTS IN INDIA: A COMPARISON OF METHODS

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Introduction: Preventive interventions with post-exposure prophylaxis (PEP) are needed in leprosy high-endemic areas to interrupt the transmission of *M. leprae*. Program managers intend to use Geographic Information Systems (GIS) to target preventive interventions considering efficient use of public health resources. Statistical GIS analyses are commonly used to identify clusters of disease, but do not account for the local context. Therefore, a contextualized approach is needed.

Objective: This study proposes a contextualized spatial approach that includes expert consultation to identify clusters and compare it with a standard statistical approach.

Patients/material and methods: We included all leprosy patients registered from 2014 to 2020 at the health centers in two districts in Uttar Pradesh State, India (n = 3,855). Our contextualized approach included expert consultation determining criteria and definition for the identification of clusters using DBSCAN, followed by creating cluster maps considering natural boundaries and the local context. We compared this approach with the commonly used Local Moran's I statistic that identifies high-risk villages.

Results: In the contextualized approach, 374 clusters with 75% of the cases in clusters were identified in district one and 512 with 57% of the cases in clusters in district two. If 100 individuals per leprosy case will be targeted for PEP, 33% and 11% of the total cluster population would receive PEP, respectively. In the statistical approach, we identified more clusters in district one and fewer clusters in district two (508 and 193), lower proportions of cases in clusters (66% and 43%) and lower proportions of population targeted for PEP.

Limitations: We didn't differentiate between rural and urban settings or correct for population densities and used the same DBSCAN parameters (Minpt of 2 and maximum distance of 500 m).

Conclusion: A contextualized spatial approach could identify clusters in high-endemic districts more precisely than a standard statistical

Keywords: Spatial analysis, Clusters, Contextualized approach, Local Moran's I, Post-exposure prophylaxis, India

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#0028/ ILCABS286

MIGRATION AND ITS RISK ASSOCIATED WITH LEPROSY AMONG NEW CASES DIAGNOSED IN A TERTIARY CARE CENTER IN CHHATTISGARH.

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Background: Migration is one of the social determinants influencing transmission dynamics of Neglected Tropical Diseases (NTDs) and leprosy is no exception. In India, leprosy is concentrated in high-risk clusters and Internal migration is common. The reasons for migration are primarily socioeconomic and may influence leprosy transmission and hamper control efforts.

As strategies of disease control become increasingly important to meet World Health Organization (WHO) standards, a more thorough approach is needed to investigate migration as a risk factor for disease

Research Question: Is migration a risk factor for Leprosy transmission

Methodology: Study Design-A cross-sectional study was conducted among all the new cases of leprosy registered for treatment at the study Centre.

Data collection: Data was collected on demography. Disease status, family, social, and personal history from the medical records in the hospital management system.

Result: Till date 52 newly diagnosed leprosy patients were interviewed and the data collection is ongoing. The preliminary findings are; In general people who had history of migration (n=19) had severe form of disease as compared to non-migratory population (n=33). Number of patients with one or more nerve involved (58% vs 51%), BI 3 and above (68% vs 42%) and WHO disability grade 1 or 2 (57% vs 45%). The detailed findings will be presented at the conference.

Limitations: Data is from the tertiary hospital and may not be representative of people affected by leprosy in the study area.

Conclusion: Migration results in delayed diagnosis, severe form disease and complications thus resulting in a risk factor for transmission. This should be investigated more thoroughly and matched with the provision of health services within the national program.

Keywords: Migration, Leprosy transmission,

#0029/ ILCABS305

TITLE: CHAPERONES OF HANSEN'S PATIENTS - A KAP SURVEY.

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Objective: To assess the Knowledge, Attitude and Practice among caregivers of patients with Hansen's disease.

Introduction: Leprosy is a chronic, debilitating disease with high prevalence.

It is associated with high ignorance, misconception and social stigma.

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Appropriate information in the caregivers about the causative agent, course of the disease, psychological impact associated, the treatment modalities available is of profound importance as they play a key role in the early diagnosis, completion of treatment and rehabilitation of the leprosy patients.

Methodology: A questionnaire based cross sectional descriptive study for care givers of patients with Hansen's disease attending our outpatient department from march 2021 to march 2022 at BMCRI, a tertiary health care center, was conducted.Sample size of 99 was calculated.

Care providers were assessed with 10 questions each regarding the knowledge, attitude and practice. Scores from 0-10 were given for each subset and subsequently quantified as low, medium and high. Data was documented and analyzed.

Results: A total of 101 caregivers, 48 female and 53 males, were included in our study, which revealed that 77.23% of caregivers had poor knowledge, 64.36% had poor attitude and 71.3% of them had poor practice. Attitude and Practice was better in care providers who had more than one family member infected with Hansens disease and also if care providers were parents of infected children. Educated and younger age group care givers had better knowledge.It was interesting to explore various superstitious beliefs and practises associated with leprosy.

Limitations: small sample size, potential answer bias

Conclusion: Our study explored the deficiency in the existing knowledge, attitude and practice among caregivers. It provides an opportunity to educate them about the same and thus decreasing the disease burden in the community.

Keywords: Caregivers, Hansen's, Knowledge, Attitude, Practice.

#0030/ ILCABS326

OPERATIONAL YIELD IN DETECTION OF NEW LEPROSY CASES THROUGH HOT SPOTS SURVEYS

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Introduction: As there are no acute and troublesome signs and symptoms, leprosy was not unusual to ignore by the individuals until it complicated to the stage of visible deformity. The active surveys detected substantially large number of cases which otherwise would have been remained undetected. The prevalence of leprosy in India and parts of world was significantly reduced to achieve the level of elimination. Due to random occurrence of leprosy cases, it was difficult to continue high quality community screening for leprosy in entire population. Several case detection methods were suggested and tried with varying degree of yield in detecting new leprosy cases at the expense of huge manpower.

Objectives: To analyse various case detection strategies in terms of yield of new leprosy cases.

Material & Methods: Operational definition for suspect/ case, criteria for index case, strategies for the active survey and operational yield at the end of such activity was stratified according to the notified prevalence and type of index case. The hotspots were defined on frequency of total new/specific type of cases such as child case/Grade-II disability (G2D) case, active surveys in hard to reach areas and among SC,ST, migrants also studied. The operational yield of new cases was calculated based on population required to be screened per new detected case.

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Results: The highest yield in terms of new cases was observed for the surveys conducted towards child as an index case. The proportion of adult population screened was low mostly due to their occupation reasons. The G2D based screening yielded proportionately less cases, while specific strategies in hard to reach areas and among the marginalized community had better yield.

Limitations: Quality of bodily examination was very much limited.

Conclusion: Hot spots surveys based on child leprosy cases enhanced for better yield of new cases.

Keywords: Leprosy, Case detection, Hotspot, Surveillance, Survey

#0031/ ILCABS346

ROLE OF IMPROVED HEALTHCARE ACCESS TOWARDS ZERO LEPROSY

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Introduction: Continuous efforts have been ongoing towards the elimination of leprosy. Improving access to health services have been proven to be an effective strategy in managing diseases in communities.

Objectives: To evaluate the outcome of activities aimed to improve access to leprosy services towards Zero Leprosy.

Methodology: Data from different community activities (Household contact tracing, Skin camps and Leprosy Elimination Campaigns, Trainings) were used to evaluate the contribution of programmes towards Zero Leprosy, during a 2 years period interval from 2020 to 2021. Data on new case detection and referrals within various activities were assessed.

Results: From community activities, 8% of new cases identified through Skin camps and Mini Leprosy Elimination Campaign (n=797). Out of 68 cases, female were 38%, child cases 5.5% and Grade 2 Disability in 2.2% of cases. . Among the index cases who had their contacts traced (1:50), 2% of new cases were identified through household contact tracing. In an attempt to integrate leprosy services with the Government, 2000+ Female community health volunteers, 141 health workers and 84 Medical officers in 15 districts were trained on leprosy diagnoses and management in an attempt to strengthen local and provincial level leprosy services to improve case finding and management. From the total no of cases, 5% of new cases were referred by volunteers and health workers. Similarly, awareness activities to improve knowledge and practice of leprosy were conducted in . Out of these, 12.8% of new cases were detected through self-referral by leprosy affected people.

Limitations: In addition to healthcare access, other contributing factors to improve health service delivery need to be evaluated as well.

Conclusion: Skin camps and leprosy elimination campaigns at local community levels areeffective in finding new cases of women and children. Awareness activities are effective in improving improving self-referrals by volunteers and health workers.

Keywords: Healthcare access, Leprosy Elimination, Zero Transmission,

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#0032/ ILCABS353

DRUG RESISTANCE SURVEILLANCE IN LEPROSY-A FACILITY BASED CROSS SECTIONAL STUDY FROM A TERTIARY CARE CENTRE IN CENTRAL MADHYA PRADESH, INDIA

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Introduction: The major strategy in leprosy control is chemotherapy consisting of rifampicin, dapsone, and clofazimine. over the last decade, there is no significant decline in leprosy prevalence rate and annual new case detection rate (ANCDR) indicating an active transmission of leprosy in the country despite the intensive implementation of MDT in program indicating an increase in circulation of drug-resistant strains.

So, there is a need for frequent assessment of drug sensitivity patterns in Hansen's disease

Our study aims to detect primary and secondary drug resistance to anti-leprosy drugs.

Primary objective: To detect primary and secondary drug resistance to anti-leprosy drugs, namely, rifampicin, dapsone, and ofloxacin in leprosy patients

Inclusion criteria: MB leprosy cases with a bacillary index (BI) ≥2+

Methodology: All patients meeting the inclusion criteria will be taken up for detailed clinical history and examination. post which patients were subjected to sampling. Sample includes slit skin smear (SSS) and skin punch biopsy. SSS for assessing BI and biopsy for drug resistance assay. The biopsy was stored at 4°;C temperature in the Department of Microbiology in our institute and will be sent to the Department of Biochemistry, ICMR-National JALMA for molecular analysis. DNA will be extracted from by standard protocol (Proteinase K and phenol chloroform). A rapid molecular diagnostic test for leprosy will be performed by RLEP - PCR to analyze for PCR-based drug resistance by targeting genes such as rpoB, folP1, and gyrA. PCR-based drug-resistant targeting genes amplification will be performed using primers/protocols according to the WHO Guidelines.

Results: out of 28 samples tested, 5 showed resistance, out of which 2 were new cases while 3 were retreatment cases.2 were resistant to rifampicin, all 5 were resistant to dapsone, and 1 was resistant to ofloxacin

Limitations: small sample size

Conclusion: study indicates existence of drug-resistant leprosy strains in

Keywords: Drug resistance, Anti microbial resistance, Leprosy

#0033/ ILCABS360

FACING CHALLENGES AND CLOSING IMPLEMENTATION GAPS TOWARDS ZERO INCIDENCE OF LEPROSY IN NATIONAL CAPITAL TERRITORY OF DELHI

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India “eliminated” Leprosy as a public health problem in December 2005. Nearly two decades later, new cases continue to occur and even show increases in some areas. Irreversible nerve damage and high stigma continues

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to plague the National Leprosy Eradication Programme (NLEP) despite massive financial inputs and large women workforce. Major research was done to identify the challenges and implementation gaps in NLEP to achieve zero incidence of leprosy, zero disability and zero stigma in national capital territory of Delhi. Mixed methods were used analyzing Secondary data for recent Ten years of monthly progress reports submitted to the Government of India. Interview surveys were done online on patients and their contacts, medical officers, health assistants/paramedical workers, community volunteers such as ASHA workers. DELPHI technique was used among leprosy experts, in-depth interviews of selected leprosy experts/programme managers, and case reports. Due to restrictions imposed by the COVID pandemic, FGD and other face-to-face group interactions could not be done. Based on all the evidence, challenges include no effective vaccine so far for leprosy, possible extra human reservoirs, *M. leprae* cannot be cultured, transmission modes unclear and no prognostic tests for nerve damage. Other challenges are possible MDT resistance, no viable alternative to MDT, Hard-to-reach and floating populations, high leprosy stigma, archaic laws, public apathy to leprosy control, weak political will, standalone programme with no partnerships, poor referral systems, complex and inefficient data management systems.

There seems to be several operational failures at many levels of the NLEP, mostly preventable and within control. The resources of NLEP are not fully utilized, the health staff including Medical Officers need strong motivations and effective supervision. With more political will and zeal of administrators, the NLEP can surely disprove the prophets of gloom and usher India into a world with the leprosy problems.

Keywords: Challenges, Implementation, Gaps, Incidence, Leprosy

#0034/ ILCABS362

DETERMINING A CLUSTER SIZE TO TARGET ACTIVE CASE DETECTION IN TWO DISTRICTS, UTTAR PRADESH (INDIA)

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Introduction: India is the most leprosy endemic country in the world where more than 50% of all new cases are detected annually. To reduce this number, active case finding, and preventive interventions need to be implemented for the people at increased risk of developing leprosy which is where leprosy cases are clustered. Geospatial technology is a useful method to identify these clusters and has been used extensively.

Objective: To develop a method to identify clusters of leprosy cases and define a cluster that would optimise the efficiency of the approach.

Methods: The geographic coordinates of leprosy cases registered at primary health centres from 2014 to 2018 were recorded. Density-Based Spatial Clustering algorithm was used with ten different combinations of cluster using 2 and 3 cases and distances of 300 to 700 m to identify clusters. The efficiency of the cluster size was determined by calculating the proportion of cases registered in 2019 and 2020 and the population to be examined to find one case.

Results: The proportion of cases in clusters increases with increasing distance parameter. Clusters defined by a combination of 2 cases within 500 m covered 67% cases in one district and 72% cases in the other. These clusters cover 6-8% of the area of the districts and contain 37-47% of newly cases in 2019 and 2020. This combination targets for screening around 200,000 individuals who have a high risk of developing the leprosy in each district.

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Limitations: Updated village-wise population data is unavailable. Therefore, the calculation of the figures is based on projected data.

Conclusion: This approach can be utilized to inform the field-level planning at the district, state, or national levels. The approach depends on local circumstances. A different combination of parameters appeared to define the most appropriate cluster size for leprosy studies in other countries.

Keywords: GIS, Cluster, Geospatial, Geo-coordinates, DBSCAN, Case-detection

#0035/ ILCABS391

THE PAST, THE PRESENT AND THE FUTURE: THE GEOGRAPHICAL DISTRIBUTION OF LEPROSY BURDEN IN THE 12 OF THE HIGH BURDEN LOCAL GOVERNMENT AREAS ACROSS 6 OF THE 15 NIGERIAN'S HIGH BURDEN STATES

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Introduction: Although the target of elimination of leprosy as public health concern has been achieved in Nigeria in 1998, many Local Government Areas (LGAs) across the 15 high burden states continue to be high endemic. The annual case detection remains high and wavering indicating that reported cases may not reflect the true leprosy burden. Moreover, leprosy is not evenly distributed and, therefore identifying areas of high risk using geospatial methods – as part of the Ready4PEP project – will help the government and ILEP partners to prioritize resources and allow efficient deployment of resources to areas where maximum impact will be achieved.

Objective: We have used geospatial methods to assess and predict the spatial risk distribution of leprosy in the 12 of the 26 high endemic LGAs.

Materials and methods/patients: We collected the geographic coordinates of about 1,000 leprosy patients registered from 2017 to 2021 in 12 leprosy endemic LGAs in Nigeria. In GeoDa & QGIS software, we will identify cluster areas (high-risk) using local Moran's I and estimated the spatial risk pattern of leprosy using the spatial empirical Bayesian model. Maps will be computed of Moran's cluster analysis and Bayesian-smoothed detection rates.

Results: The maps will present the Moran's I clusters and a change in the distribution of the detection rate. More results will be shared soon.

Conclusion: Exploratory spatial data analysis and Bayesian data models are useful to estimate the spatial risk pattern of leprosy and can support the government to prioritize resources and target leprosy control activities.

Keywords: Leprosy prevention and control, Spatial analysis, Local Moran's I, Bayesian Spatial Model, Spatial risk pattern

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#0036/ ILCABS399

NIKUSTH VS NIKSHAY APPS – A LOOK INTO THE RECORDING OF LEPROSY CASES IN INDIA

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Introduction: Effective data collection and analysis along with quality monitoring are essential elements for the success of any health program and leprosy is no exception. With this as an emphasis, Nikusth application was launched by Government of India in 2017-18, in order to strengthen the National Leprosy Eradication Program (NLEP). Nikshay, launched in 2012, is an integrated information and communication technology system for tuberculosis (TB) in India. A comparative analysis of the 2 apps is presented here.

Description: Nikusth is a web-based reporting system wherein data collected in leprosy assessment forms at primary health centre level is entered and made available at district level. Currently, only one time data entry is being done in the software. Lack of digitisation for data entry at first point of contact; no entry of follow up information regarding treatment taken, adverse effects, lepra reactions and final outcome; no facility for tracking for development of deformities; no provision to capture data from treating physicians in the private sector; no facility for case referral are some of the major drawbacks of Nikusth app. On the other hand, Nikshay app for TB is a comprehensive, single-window digital platform available as a downloadable mobile app accessible for all registered treating physicians as well as patients. Entire patient data from enrollment to tests done, treatment adherence and outcome, including adverse events can be updated on real time basis, along with provision for referral, contact tracing and follow up.

Conclusion: Thus, Nikshay is an immensely successful, user friendly and superior working model when compared to Nikusth. Nikusth application serves more as an online database. It needs to be revamped into a more versatile, dynamic, integrated app meant not only for case reporting but also for facilitating early diagnosis, ease of treatment and preventive and rehabilitative services.

Keywords: Nikusth, Nikshay, Online app, Leprosy monitoring, Follow up

#0037/ ILCABS425

ENGAGEMENT OF PRIVATE PROVIDERS FOR LEPROSY CASE DETECTION IN ANDHRA PRADESH AND TELANGANA STATES – LEPRA PROJECTS EXPERIENCE

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Introduction: India accounts over 60% of gloabal Leprosy Cases load and there is urgent need to address and accelerate Leprosy control activities. Majority of Leprosy patients first point of care is private providers. Participation of private practitioners (PPs) has been sporadic in Leprosy prevention. However, there remain certain barriers and gaps, which are preventing their upscaling. The current study aims to discuss experiences of private sector involvement in LEPRA Leprosy Referral Centres.

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Objectives: Objective of this research study is to determine active engagement of Private Practitioners in detecting new Leprosy Cases.

Patients / material and methods: The Research Study data taken from the data of last 4 years April 2018 to March 2022 at 4 LEPRA Referral Centres in Andhra Pradesh and Telangana States from the Patient Cards, where in the details of source of referral has been noted.

Lepra Leprosy Referral Centres are Co-located at Govt Health Facilities and provide comprehensive Leprosy Services. The potential Private Providers at LEPRA Referral Centres are mapped and visited personally by centre staff and made aware of LEPRA Referral Centres followed up for any new Leprosy suspects for diagnosis and initiation of treatment.

Results: During April 2018 to March 2022, a total of 1118 New Leprosy Cases have been identified at LEPRA 4 Referral Centres in Andhra Pradesh and Telangana States. Among them a Total of 192 (17%) Cases are referred by Private Providers to LEPRA Referral Centres. Across 4 Referral Centres contribution it ranges from 6% to 38% and average contribution by Private Providers is 27 % of New Leprosy cases.

Conclusion: Intervention showed effectiveness in enhancing Leprosy case detection by engaging Private Providers . Reqeust Policy makers to focus on such initiatives for greater Leprosy Notification and detecting missing Leprosy cases.

Keywords: Private Providers Engagement- Key step towards Leprosy Eradication

#0038/ ILCABS433

YIELD OF SYSTEMATIC CONTACT SURVEY IN PROMOTING EARLY LEPROSY DETECTION; POST INTEGRATION OF PROGRAM, INDIA

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Introduction: The primary aim of all disease control measures is to reduce the incidence, prevalence, morbidity and/or mortality rate to the lowest level possible. However, once control program objectives have been met, continuous interventions necessary to maintain minimal rates. One activity of early detection of leprosy is contact surveillance, which aims to interrupt disease transmission and prevent disabilities. In India, after integration of leprosy in 2005, the contact survey was not focused much.

Objective: This study is to determine the efficacy of contact survey and the risk factors among the contacts of newly-diagnosed leprosy patients in seven leprosy referral centres in India.

Methods: The study included 256 new patients registered in 7 leprosy hospitals and their contact demographics were evaluated. Statistical analyses took into account both available family contacts and 50 neighbourhood households.

Results: A total of 53,491 family and neighbourhood contacts screened; 47.2% (n=25285) were female. 369 leprosy suspects identified, 27 new cases diagnosed with 68.2% (n=19) MB, 2 cases reported with grade II disability. The main characteristics facilitating the contraction of leprosy among contacts were shown to be consanguinity and household association. Conversely, the bacillary load index of leprosy patients (MB) was the principal factor leading to disease among contacts.

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Limitation: Contact survey for leprosy patients has inherent problems related to the low level of community awareness, high social stigma and atypical skin lesions. Blanket screening is resource intensive thus priority to be given for MB & child cases.

Conclusion: Contact/index case co-habitation was shown to be a key risk factor in developing leprosy. Household contacts had a higher risk for leprosy (18) in developing the disease; twice that among neighbourhood contacts. Continued health education and motivation of contacts will enhance the voluntary reporting for periodical reporting.

Keywords: MB - Multi-Bacillary

#0039/ ILCABS437

IDENTIFICATION OF HIGH PREVALENT CLUSTERS IN VILLAGES HYPERENDEMIC FOR LEPROSY IN SENEGAL

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Introduction: Senegal has nine villages known to be hyperendemic with a leprosy incidence rate superior to 1,000 per million inhabitants. The National Leprosy Programme aim to implement active screening and prophylaxis in these villages to stop transmission.

Objective: To assess clustering of leprosy cases and risk of leprosy in population living in hyperendemic villages according to the physical distance to a new leprosy patient.

Methods: From October/2020 to February/2022 active door-to-door screening for leprosy was conducted in nine villages. We recorded screening results, demographic, and geographic coordinates data using an open-source application. Using Poisson model we estimated risk of contracting leprosy in contacts according to the distance to the nearest new leprosy patient. Clustering was analysed using a Poisson model including 50% of the population as maximum cluster size.

Results: We found 39(0.64%) new leprosy cases in six villages among 6,121 examined among 7,850 listed. Among new cases, 20(51.2%) were children ≤15 years, 10(25.6%) were multibacillary and 04(10.2%) had grade 2 disability. The prevalent risk ratio and 95% confidence intervale(95%CI) adjusted by village according to same household, 1-25m, 26-50m, 51-75m, 76-100m was respectively 4.2(95%CI 1.7-10.1), 0.97(95%CI 0.2-4.4), 0.87(95%CI 0.2-25), 0.89(95%CI 0.3-2.6) and 0.70(95%CI 0.2-2.5) compared to those living at more than 100m. We identified nine high prevalent clusters including 27/39(69%)of new cases in 490/7,850(6%)inhabitants, with relative risks of 93.3(p-value=0.01), and 7.3, 42.8, 8.2, 12.5, 11.4, 23.5, 22.3, and 14.6 (non-significant p-values).

Limitations: Despite sensitization campaigns, 22% of the inhabitant listed were absent and were not examined.

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Conclusions: Only individuals living in the same household as the leprosy patient had a significant risk of contracting leprosy. We documented nine clusters of leprosy containing a substantial number of new cases detected within a population of 500 that could benefit from tailored control activities while optimizing resources and stopping most of the transmission

Keywords: Clustering of leprosy, Mapping

#0040/ ILCABS460

WHOLE-GENOME SEQUENCING TO INCREASE RESOLUTION OF *M. LEPRAE* TRANSMISSION IN THE COMOROS

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Introduction: Global leprosy incidence has not declined in the last two decades. An intensive leprosy diagnostic campaign is ongoing in the Comoros, where high transmission of the disease is reported. The study includes one of the largest cohorts of leprosy patients (>1200), followed since 2017. We aim to understand and stop transmission by performing active case finding and using molecular methods to monitor for drug resistance and transmission. Over 1000 biopsies were collected from 1200 leprosy patients. Genotyping by SNPs and VNTRs was performed on DNA extracts from 260 leprosy patients from Anjouan/Mohéli over a 3-year period using Deeplex Myc-Lep. Clusters with identical Deeplex-based genotypes were identified, including those unexplained by demographical/social links. We tested whether Whole-Genome Sequencing (WGS) adds resolution, increasing specificity of presumed transmission links.

Method: Ten skin biopsies and 50 DNA extracts from patients infected with strains belonging to five clusters based on VNTR markers. We performed WGS of *M. leprae* directly from skin biopsies after 1) human DNA depletion during DNA extraction for 10 skin biopsies and 2) bacterial DNA capture after library preparation using RNA baits.

Results: From DNA extracts of 60 samples the full genome of *M. leprae* (>5X coverage) was recovered from 48 strains (80%). The presence of two SNP subtypes was detected in the population, the 1D-Malagasy genotype and the 1A genotype, similarly to the distribution found in Madagascar. Clustered genotypes based on Deeplex Myc-Lep showed a SNP difference in WGS suggesting unique genomes. Further in-depth comparative genomics is ongoing to define clusters and compare with data to the targeted approach.

Discussion: WGS adds precision in identification of transmission events. Less than 300 genomes of *M. leprae* are publicly available and increasing this number is crucial to overcome the stalemate in leprosy control. WGS will inform Deeplex-MycLep which targets to include.

Keywords: Sequencing, Drug resistance, Cluster, Genotype, Genome, Comoros

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#0041/ ILCABS469

HANSEN'S DISEASE (LEPROSY) IN JAPAN, 1947-2020: AN EPIDEMIOLOGIC STUDY DURING THE DECLINING PHASE TO ELIMINATION

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Introduction: Leprosy, or Hansen's disease, was a major public health problem in Japan in the early 20th century. Today, the number of new cases has decreased significantly.

Objectives: We aimed to investigate the trends of leprosy in Japan over the past 73 years and the challenges faced in recent years. Further, we examined when local transmission ceased.

Material and methods: We assessed the data on newly registered cases of leprosy from 1947 to 2020, which were obtained from the Ministry of Labor and Welfare of Japan, Okinawa Leprosy Prevention Association, and from expert groups.

Results: A total of 10,796 newly registered cases of leprosy were reported in Japan during the study period, of which 7,573 (70·1%) were registered in mainland Japan, 2,962 (27·4%) were registered in Okinawa, and 250 (2·4%) were of foreign origin. The number of non-autochthonous cases surpassed that of autochthonous cases in 1992; currently, non-autochthonous cases account for the majority of cases reported in Japan. Non-autochthonous cases originated from 26 countries, half of which were from Brazil and the Philippines. Three cases of antimicrobial resistance were detected among the non-autochthonous cases since 2004. Autochthonous patients were all born before 1950 in mainland Japan (except three patients) and before 1980 in Okinawa.

Limitations: Our dataset was taken from three sources, in which we know that there were some differences in data collection and may introduce bias. However, there was an average of less than 10% discrepancies observed between the overlapping years.

Conclusion: Our data suggest that local transmission ceased between 1930s and 1940s in mainland Japan, and in the 1970s in Okinawa. Autochthonous and non-autochthonous cases had very different epidemiologic patterns, especially in terms of age and sex.

Keywords: Leprosy, Hansen's disease, Japan, Epidemiology, Elimination, Non-autochthonous case

#0042/ ILCABS491

EFFECTIVENESS OF ACCELERATION OF NEW LEPROSY CASE FINDINGS IN DISTRICTS WITH EPIDEMIOLOGICAL INDICATIONS

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Effectiveness of acceleration of new case findings in districts with epidemiological indications, initiated since 2010 were evaluated employing retrospective descriptive study of data from a Geographic Information

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System for Leprosy Control in Thailand 2010-2020. Three epidemiological (epi.) indications were (1) new cases found every year for five consecutive years, 2) new cases in children found in any year during five consecutive years, and 3) 10 new cases or more during five consecutive years. Proportion of districts with new cases in districts with epidemiological indications (25-60%) was significantly higher compared to districts without indications (5-21%) (p-value <0.001). Districts with 3 epi. indications had the highest rate of new case findings. Among districts with only one epi. indication, indication 3 was the best for employment in new case findings. Trend of findings of new case with grade 2 disability in districts with epi. indications was reduced in 2016-2020 as compared to 2010, whereas, it was not reduced in districts without epi. indicators. In 2020, new leprosy case with grade 2 disability in children was not found and rate of new cases with grade 2 disability was less than 0.3 case/106 population. In addition, 40% of 928 total districts were leprosy-free. In conclusion, accelerating new leprosy case findings in areas with epidemiological indications is still necessary for leprosy elimination under conditions of low prevalence to achieve a goal of leprosy-free Thailand.

Keywords: New case findings, Districts, Epidemiological indications, Leprosy-free Thailand

#0043/ ILCABS504

RECORD BASED ANALYSIS REVEALS HIGH RATES OF GRADE 2 DISABILITY AT THE TIME OF DIAGNOSIS

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Background: Leprosy-related disabilities and the stigma associated with the disease leads to social exclusion, therefore factors contributing to the disease have to be identified to develop appropriate strategies.

Objective: To assess the clinical and epidemiological characteristics of newly diagnosed leprosy cases.

Methods and Materials: A retrospective cohort study of newly diagnosed leprosy cases attending a semi-urban referral centre from April 2015 to March 2021. The data regarding the demographics and clinical characteristics were obtained from the medical records. The results are summarized using descriptive analysis.

Results: A total of 323 new leprosy cases were registered during the study period. The majority of the patients belonged to the age group 25-64 (75%), were males (65%) and worked in elementary occupations (39.07%). Clinically, 35 (11%) of them had neuritis as the presenting symptom. At diagnosis, 81.8% of cases accounted for Multi-bacillary (MB) cases and 65.9% for borderline tuberculoid (BT) clinical form, a bacillary index of more than three was seen in 59%. Sixty (T1R-29, T2R-27, both -04) patients reported at diagnosis with leprosy reactions. 21% (67), and 31% (99) of patients had grade-1 and grade-2 disabilities at diagnosis respectively. 15% (49) cases presented with visible deformities in the hands

Conclusion: The study findings showed the presence of neuritis and reactions at diagnosis, contributing to high G2D among the new cases. Therefore, leprosy awareness messages should include information about neuritis and reactions and their treatment apart from hypopigmented skin patches.

Keywords: Epidemiological, Clinical, Awareness

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#0044/ ILCABS519

WHAT IS THE TRUTH? ZERO LEPROSY OR ZERO REPORTS!

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Introduction: Leprosy situation in Bangladesh is categorized into four strata based on number of new leprosy cases. Most NGOs are active in high case loaded districts and very few to zero cases are reported in non-served NGO areas due to no active case finding initiatives. The Leprosy Mission International Bangladesh (TLMIB) actively started working in partnership with seven NGOs in 10 non-served NGO districts in southern part from 2016.

Objective: To compare the leprosy situation in non-served NGO districts after AEP-TLMIB interventions in the southern part of Bangladesh.

Methods: Analyzed and compared National Leprosy Program (NLP) data from 2010 to 2021 of ten districts under two divisions in the southern part.

Results: 72 new leprosy cases registered in four districts during 2016-2021 compared to zero new cases

during 2010-2015. 50 new leprosy cases registered in two districts in three years (2019-2021) compared to 58 new cases in previous nine years (2010-2018). 566 new leprosy cases registered in four other districts during 2016-2021 compared to 206 new cases during 2010-2015. 45% PB cases during 2016-2021 compared to 14.5% during 2010-2015. 43% female cases during 2016-2021 compared to 32% during 2010-2015 and 4.69% child cases registered during 2016-2021 compared to 0.81% during 2010-2015. Total new cases increased by 184% after active case finding initiated by NGOs in ten districts from 2016 through cost-effective partnership with non-leprosy NGOs.

Limitations: Rely on annual data of NLP.

Conclusion: Zero leprosy cases reported do not mean that zore leprosy in particular districts. New cases required active case finding initiatives and the government system does not have provision for active case finding due to only one dedicated staff at sub-district level and lack of budget. NGO presence in zero leprosy case reported districts can change the leprosy scenario and stratum.

Keywords: Zero report vs zero case, Partnership, NGO served and non-NGO served

#0045/ ILCABS532

A STUDY ON THE PREVALENCE OF DISABILITY AMONG PEOPLE AFFECTED BY LEPROSY IN A LEPROSY ENDEMIC DISTRICT.

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Introduction: Leprosy can result in visible and functional impairments and disabilities if not treated early. There is a lack of credible data on prevalence of disabilities due to Leprosy specific impairments. This factor

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is one of the main barriers to designing effective interventions and developing scientific methods to evaluate their effectiveness. Considering the above a study was conducted to obtain baseline data to effectively plan, develop, and evaluate a follow-on study of an intervention to reduce the prevalence of disabilities among people affected by Leprosy through enhanced self-care.

Objective: To estimate the prevalence of disabilities due to Leprosy in a Leprosy endemic district.

Methods: A community based cross-sectional study was conducted among Leprosy affected people from October 2021 to April 2022 in 4 blocks of Leprosy endemic district. List of Leprosy patients registered for treatment during last five year was used to trace participants. Consenting patients having impairments were included in the study and their basic demographic and clinical data (eye, hand, and foot disabilities) was collected using semi-structured questionnaire on tablets. Data analysis was done using MS Excel.

Results: Out of 4956-line listed participants, a total of 1627 were traced for disability assessment and 1198 patients were assessed till date. About 426 participants were not found during data collection for different reasons such as migration, death, duplicate entries etc. A total of 254 (21%) patients were found to have either grade 1 or 2 impairments. A total of 4 patients were found with Lagophthalmos, 157 with hand and 201 with foot impairments.

Limitations: Tracing participants in urban areas of the study sites were difficult despite best efforts. Hence, this might affect findings of the study.

Conclusion: This study emphasizes the need to strengthen the initiatives of Leprosy affected people related to their disability management through enhanced self-care.

Keywords: Leprosy, Disability, Self-care

#0046/ ILCABS544

PREVALENCE OF PLANTAR ULCER AND ITS RISK FACTORS IN LEPROSY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Plantar ulcers are leading complications in leprosy that require frequent visits to hospital and is associated with stigma. The extent of burden of ulcers in leprosy and its risk factors are scant impeding the development of targeted intervention to prevent and promote healing of ulcers.

Objectives: To document the prevalence of plantar ulcer and its risk factors in leprosy.

Material and methods: Databases (Medline, Embase, Web of Science, CINAHL, BVS, INFOLEP), conference abstracts and reference lists were searched for eligible studies. Studies were included that reported a point prevalence of plantar ulcer and/or its "risk factors" associated with development of ulcers (either causatively or predictively), including individual level, disease related and bio-mechanical factors. We followed PRISMA guidelines for this review. Random-effects meta-analysis was undertaken to estimate the pooled point prevalence of ulcers. Reported risk factors in included studies were narratively synthesised. This review is registered in PROSPERO.

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Results: A total of 890 studies were identified for screening after removing duplicates. 14 studies (5 for prevalence of ulcer and 9 for risk factors) met the inclusion criteria. The pooled point prevalence of ulcer was 33% (95% CIs, 20% - 51%) and 8% (95% CIs, 5% - 14%) among those with foot anesthesia and among all people affected by leprosy, respectively. Risk factors for developing ulcers included: unable to feel 10 grams of monofilament on sensory testing, pronated/hyper-pronated foot, foot with peak plantar pressure, foot with severe deformities, and those with lower education and unemployed.

Limitations: Included studies contained data from tertiary care hospitals, which may overrepresent those with severe disease.

Conclusion: The burden of ulcer in leprosy is high and there is a need for a targeted intervention to minimize risk factors, prevent, and promote healing of ulcers.

Keywords: Plantar ulcers, Leprosy, Prevalence of ulcer, Plantar pressure, Disability

#0047/ ILCABS549

FEASIBILITY OF IMPLEMENTATION OF SDR-PEP IN VILLAGES HYPER ENDEMIC FOR LEPROSY IN SENEGAL

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Title: Feasibility of implementation of SDR-PEP in villages hyperendemic for leprosy in Senegal

Introduction: The concept of post-exposure-prophylaxis with single-dose rifampicin (SDR-PEP) for contacts of leprosy cases is recommended by WHO since 2018 to support the efforts towards Zero Leprosy. Senegal has nine villages known to be hyperendemic and the National Leprosy Programme aim to implement active screening and SDR-PEP to stop transmission.

Objective: To test the feasibility of implementation of SDR-PEP in Senegal.

Methods: From October/2020 to February/2022 active door-to-door skin screening for leprosy was conducted in nine villages with mixed teams consisting of a dermatologist, data clerk, social worker, person affected by leprosy and one community volunteer. Screening results, demographic, and geographic coordinates data were recorded using an open-source application. The number of persons at risk accepting the SDR-PEP and the occurring challenges were recorded.

Results: 9,081 contacts of 452 persons treated for leprosy were listed. Out of these, 292 refused active to participate in the project and 1862 could not be traced. Since the number of contacts that were absent was high, a sample survey of 100 contacts is currently being done to identify the reasons. Out of the 7115 contacts traced and willing to participate in the project, 6633 persons were eligible take SDR and 6445 Persons accepted (93%). 482 persons were not eligible due to suspected to have leprosy (39) or other exclusion criteria.

Limitations: Despite sensitization campaigns, 21% of the inhabitant listed were absent and were not examined.

Conclusion: The PEP project proved the feasibility of strengthened contact tracing, skin screening, introducing leprosy PEP with SDR and collection of high-quality individual data. Integration of SDR

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distribution into a leprosy control programme invigorated through the current leprosy control efforts by an increased motivation resulting from the addition of a novel tool and

Keywords: Test the feasibility of implementation of SDR-PEP in Senegal.

#0048/ ILCABS553

COINFECTION OF COVID-19 AND LEPROSY: CHARACTERIZATION AND ASSOCIATED FACTORS DURING THE FIRST YEAR OF PANDEMIC IN BRAZIL

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Introduction: New challenges were seen in the confrontation to leprosy during the pandemics of Covid-19. The clarification of aspects surrounding coinfection will subsidize the development of specific actions to this population.

Objective: Characterize and identify associated factors to coinfection cases of leprosy and Covid-19 during the first year of pandemics in Brazil.

Method: Transversal study of leprosy cases, diagnosed in Brazil from 2018 to 2020 and that got infected by Covid-19 during the treatment with the multidrug therapy. It was used data from the Notifiable Diseases Information System (SINAN), from the Epidemiologic Surveillance of the flue (SIVEP-Gripe) and the e-SUS Notifica. It was done a probabilistic relation from these data base. It was calculated the absolute and relative frequency, the fatality rate and, to identify the associated factors, it was used the crude prevalence ratio with the confidence interval of 95%.

Results: In the universe of 47.883 cases of leprosy in treatment, there were identified 522(1,1%) with Covid-19's diagnose. Between the co-infected there was a higher rate of multibacillary leprosy (88.9%) with GIF2 (13,2%) and positive smear testing (34,3%). Persons with 60yo or more showed prevalence 12,7 times higher of coinfection related to younger than 15(CI95% 4,11-40,01). The fatality rate between the coinfected was 25,3%. When it comes to death in coinfected, the number was 9,37 times higher than in elderly, compared to persons around 15 and 39yo (CI 95% 3,93-22,35) and 3,21 times higher in illiterate compared to those with completed high school or higher study levels (CI 95% 1,64-6,28).

Limitations: Use of different secondary databases, subject to consistency and completeness problems.

Conclusion: Lethality's higher prevalence in coinfected elderly and multibacillary show to leprosy's programs the need of surveillance actions and focus on leprosy's patients during covid-19 context.

Keywords: Coinfection, Leprosy, Covid-19, Epidemiology

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#0049/ ILCABS571

NATIONAL LEPROSY ERADICATION PROGRAMME (NLEP): PAST, PRESENT AND FUTURE

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Introduction: National Leprosy Eradication Programme (NLEP), India achieved the elimination of leprosy as a public health problem, defined as less than 1 case per 10,000 populations, at the National level in 2005.

Objective: 1) To understand the status of implementation of National Leprosy Eradication Programme activities. 2) To provide input for future planning to achieve Zero transmission of Leprosy.

Methodology: Review of existing records and data available with central Leprosy Division.

Result/Discussion: The cause of leprosy, Mycobacterium leprae was established by Armeur Hansen inNorway in 1873, and in the 1940s that effective treatment was discovered. Major developments in re constructive surgery for leprosy took place in the 1950s. In the1960-70s efforts began to control leprosy in the community using dapsone. Multidrug therapy (MDT) was recommendedby the World Health Organisation in 1982.At the beginning of 2000, to reach the target i.e. prevalence of leprosy to less than 1 in 10, 000, a commitment has been made to achieve this by 2005.

At PRESENTtill 2015, in India two important indicators of Program i.e. Annual New Case Detection Rate (ANCDR) and Prevalence Rate (PR) are almost static since 2005 – 2006 and Grade II disability (G2D) has increased very significantly. Several innovations introduced to address the issues being faced by the programme.

The priorities for the FUTURE are that all new cases of leprosy are detected early and treated properly; the physical, social and economic rehabilitation of those affected by the consequences;

Conclusion: NLEP is moving in that direction to achieve Zero transmission of Leprosy.

Keywords: NLEP, Zero tranmission, Leprosy

#0050/ ILCABS581

POST COVID-19 ACTIVE CASE DETECTION (ACD) IN A TRIBAL COMMUNITY REVEALED NEED FOR SUSTAINED ACD ACTIVITY IN DIFFICULT TO REACH TRIBAL AREAS

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Introduction: Recent evidence from India points to a hidden burden of leprosy among tribal groups living in difficult to reach areas.

Objective: To assess the leprosy burden in an underserved population in a difficult to reach tribal population, and ensure prompt follow-up care for those found to be affected. Also, to strengthen the capacity of the

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National Leprosy Eradication Programme (NLEP) staff in implementation of ACD national operational guideline.

Method: A cluster-sampling method covering 40 villages (population size 850 per tribal village) in tribal areas in one block. ACD consisted of house-to-house search in selected villages using ACD national operational guideline. NLEP staff and frontline health workers were involved with a technical supervision provided by a non-governmental organisation. The search team itself consisted of one male and one female worker, each covering 10 villages. New cases were recorded and referred using standard NLEP format.

Result: 23000 people were screened over 10 days (coverage 67.6%)) and 122 new cases were detected. This is equivalent to 53% detection rate. Among them seven were child cases (<14 years) (5.7%), seven were grade 1 disability (5.7%) and four grade 2 disability (3.3%), one whom was also a child. Within this population, grade 2 disability was higher than the national target of 2% among new cases. All newly detected cases were from scheduled caste.

Limitations: High temporary out migration of tribal population into neighbouring States limited coverage of ACD survey in tribal groups and introduced bias related primarily to age.

Conclusion: ACD is a useful tool for establishing the baseline leprosy annual detection rate data in previously neglected areas and linking new cases to follow-up care. Post COVID-19 ACD efforts can be used as an opportunity to assess burden in traditionally neglected areas.

Keywords: COVID-19, ACD, Tribal population, Temporary out migration

#0051/ ILCABS606

QUESTIONNAIRE OF SUSPICION OF LEPROSY: AN EFFECTIVE TOOL FOR THE DETECTION OF NEUROLOGICAL SYMPTOMS AND TIMELY DIAGNOSIS OF LEPROSY

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We analyzed three publications on the Leprosy Suspicion Questionnaire (LSQ) with 14 questions about leprosy symptoms and signs applied in male (MPP) and female (FPP) prison populations and in the community of the municipality of Jardinópolis-SP-Brazil (JMP) aiming to evaluate its effectiveness in active search actions in leprosy.

In the MPP group, 1,400 LSQs were applied, with 896 (64%) being returned, 187 (20.9%) with some marking (LSQ+), an average of 2.7 questions/LSQ, 1,250 (89.3%) were clinically evaluated, 34 new cases were diagnosed, a new case detection rate (NCDR) of 2.7%, while 9.6% among LSQ+ and 1.83% among LSQ-.

At FPP, LSQ was applied to 404 inmates, and all were evaluated. 250 (61.9%) were LSQ+, mean of 3 responses/LSQ, 14 new cases, NCDR of 3.5%, 5.6% among LSQ+, while 0% among LSQ-.

At JMP, during home visits by community health workers, 3,241 LSQ were applied, 1,054 (32.5%) LSQ+, with an average of 3.1 responses/LSQ, 64 NC were diagnosed, 13.4% NCDR, 20% among LSQ+, while 2.2% among LSQ-.

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Among these actions, 5045 LSQ were distributed, of which 1491 (32.8%) were positive. We evaluated 1779 (39.2%) individuals with NCDR of 6.3% (112 NC), 12.5% ??among the LSQ+ (92/737), and only 1.63% (17/1042) among the LSQ-. The most frequent questions were highlighted: Q7- Nerve pain? (60.9%); Q2-Tingling (pricking)? (54.3%); Q1-Do you feel numbness in your hands and/or feet? (44.6%); Q4-Spots on the skin? (38%); and Q5- Sensation of stinging, prickling? (28.3%).

In conclusion, the LSQ by the frequencies of the questions found in the patients highlighted the neurological symptoms in front of the skin sign (SPOT) for the alert of the timely diagnosis of leprosy, constituting a low-cost instrument, easy to apply and essential for health education in different populations (community and/or prison), significantly increasing the probability of early diagnosis and treatment of leprosy.

Keywords: Leprosy, Early diagnosis, Neurologic Manifestations, Leprosy Suspicion Questionnaire

#0052/ ILCABS621

ACTIVE SCREENING AND CLUSTERING AT HAMLET LEVEL OF PEOPLE AFFECTED BY LEPROSY IN INDIA

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Introduction: In India, geographical data at hamlet level where leprosy cluster is lacking.

Objectives: We aim to identify high incident hamlets to be targeted for active screening and post-exposure prophylaxis.

Methods: We paid home visits to a cohort of leprosy patients registered between April 1st, 2020 and March 31st, 2022. Patients were interviewed and household members were screened for leprosy. We used an open-source app(ODK) to collect data on household geographical coordinates, patients' mobility, and screening results of household members. Clustering was analysed with Kulldorff's spatial scan statistic (SaTScan). Outlines of hamlets and population estimates were obtained through an open-source high-resolution population density map (https://data.humdata.org), using Kernel density estimation in QGIS, an open-source software.

Results: We enrolled 169 patients and 1,044 household contacts in Bisfi and Benipatti blocks of Bihar. The median number of years for residing in the village was 17 interquartile range (IQR)12-30. There were 11 new leprosy cases among 658 household contacts examined (16.7‰, 95% CI 8.3-29.7), of which seven had paucibacillary leprosy, one was a child under 14years and none had visible disability. We identified 298 hamlets with a total population of 772,174, with a median population of 2,307(IQR 1,278-3,517). There were eleven clusters including 8% population and 49/169(29%) leprosy cases. One highly significant cluster with a relative risk (RR) of 12.2($p<0.001$) included three hamlets and eight cases in 6,539 population. A second highly significant cluster included three hamlets and eight cases in 9,352 population with a RR of 8.5($p<0.01$). Both high-risk clusters still need to be screened door-to-door.

Limitations: We enrolled 76% of total notified leprosy cases during the study period.

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Conclusion: We found a high yield of active household contact screening. Our tool for identifying hamlets appears effective. Focusing on intensive interventions such as door-to-door screening at hamlet level could increase

Keywords: Clusters; transmission; Active screening

#0053/ ILCABS623

DISTANT REGISTRATION SCENARIO IN BANGLADESH: FACING THE REALITIES TO LEPROSY CONTROL

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Introduction: Bangladesh government is committed to ensure leprosy treatment and MDT supply in each Upazila Health Complex, yet case finding initiative is limited in different sub-districts.

Objectives: The research investigated influencing factors and effects of distant registration.

Materials and Methods: Qualitative study supported by LRI, data collected by in-depth interview from 60 leprosy affected people during 2018-2019 who received treatment in 9 different hospital/clinic far from their permanent residence.

Results: Three-fourth respondents were male, half of them unschooled and day labourer have moderate to strong relationship with distant registration. About three-fourth registered as MB, and one-third with G1D and G2D. 67% had not family contact examination yet. 20% ever not completed MDT, average 3-years detection delay was in 50% respondents as they visited 4-service providers for diagnosis. About 55% said, they visit to village doctor and pharmacy as first sought to diagnosis. One-fifth respondents registered out of own district and rest from own sub-district (47) to received treatment from city areas (78%).

50% respondents referred by GoB health service, and other treatment related factors were of unavailability of MDT, lack of expert professional, lack of information about treatment, better treatment, and lack of treatment facilities. Beyond the limitation of treatment LAP opined some social factors as due to marriage, social stigma, fear of being socially excluded, and to keep secret from own community. Over one-third registered in two different places may increase default cases and show high prevalence rate in city areas impede the national strategy.

Limitations: The small number of subject with low socio-economic condition couldn't make effective response.

Conclusion: Distant registration is creating threat to routinely use of MDT, possible transmission of disease, and hampered national strategy, needs attention to control the leprosy.

Keywords: Distant registration, Leprosy affected people, Influencing factors, Prevalence rate, And National strategy.

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#0054/ ILCABS625

IDENTIFICATION OF TRANSMISSION ZONES AND HOTSPOTS AT A VILLAGE/ TOWN LEVEL USING GIS MAPPING OF LEPROSY INCIDENCE IN ENDEMIC PALGHAR DISTRICT, MAHARASHTRA

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Introduction: India achieved leprosy elimination in 2005. Several districts in Maharashtra like Palghar never achieved elimination status (<1 case in 10,000) and continued to show persistent endemicity. Palghar district is responsible for 8.4% of Maharashtra's caseload. It has a high population of tribal and socially disadvantaged people. Two blocks in the district, Dahanu and Vikramgad contribute 37% of Palghar's caseload.

Objectives: To identify zones of transmission and hotspots within these blocks based on total cases, cases of child leprosy, and incidence of grade 2 disabilities.

Material and methods: Leprosy data of 2 blocks for the years 2016-2021 was collected from Upgraded Simplified Information System and processed at a village/town level. The caseload data was plotted location-wise on GIS maps. Based on the yearly occurrence of new cases, villages/towns were identified as Continuous Transmission Zones (CTZ), Intermittent Transmission Zones (ITZ), and Transmission Zones (NTZ) based on the operational definition. NTZ are zones with zero incidences in this time period.

Results: Out of 270 villages/towns, 38 (15%) are Continuous Transmission Zones (CTZ), 109 (40%) are Intermittent transmission Zones (ITZ), 122 (45%) are No Transmission zones (NTZ). 53% of all cases are in CTZs, 62% and 56% of all cases with grade 2 disability and child leprosy cases are in CTZs. Villages on the border of these two blocks show a higher incidence of grade 2 disability.

Conclusion: Identifying zones of leprosy transmission using GIS mapping gives a clear understanding of villages/towns that need dedicated attention and continuous surveillance. Replicating this across all blocks across all districts in the state will be a paradigm shift in how we allocate resources and efforts in the leprosy eradication program.

Keywords: Transmission and hotspots, GIS Mapping, Continuous Transmission Zones, Leprosy incidence, Surveillance, Leprosy eradication

#0055/ ILCABS626

LEPROSY SITUATION AND RELATED INTERVENTIONS UNDER LOW ENDEMIC SITUATION

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Thailand has achieved elimination of leprosy as a public health problem since 1984. While the number of newly detected cases has decreased gradually; the proportion of new cases with grade 2 disability among them is still high and new child cases are still found. These indicators reflect delayed in diagnosis and on-going transmission in community.

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To move towards zero leprosy, high-risk areas were identified based on specific criteria: a) new cases had been found every year in the last ten years OR b) new child cases had been found any year in the last ten years OR c) the sum of new cases detected in the last ten years was 7. Intensive interventions were suggested to be implemented in high-risk areas such as awareness raising, knowledge disseminating via different mass media, exhibition, educational mobile van, campaign message contest, capacity building arranged for community leaders as well as health workers, rapid village survey in an area where new child cases had been found. In addition, contract tracing was suggested to be implemented in all areas where new cases had been found.

It was found that suggested interventions were not adequately implemented. Less than 50% of household contacts were screened. As of 31th December 2001, only 12 out of 115 targeted districts found new cases who had voluntarily reported to health facilities. According to discussions between national programme and sub-national networks, there was discontinuity of activities due to low priority of leprosy and COVID 19 pandemic.

Suggestions was made for the sustainability of leprosy programme: (i) strengthen case detection activities by corporately screening household contacts between related health personnel at all levels; (ii) disseminate leprosy knowledge via YouTube, E-learning, Line application and consultant service; and (iii) advocate for leprosy through national special project observing royal important events.

Keywords: Keywords: leprosy, Low endemic situation

#0056/ ILCABS627

EFFECT OF COVID-19 ON LEPROSY CASE DETECTION IN URBAN AND RURAL CONTEXTS IN BANGLADESH

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Introduction: COVID-19 pandemic had an adverse effect on human life worldwide, especially on public health, food system and world of work. COVID-19 also had an impact on leprosy. Bangladesh is fourth-highest leprosy contributing country (2019) in the world. Average 3700 new leprosy cases were detected annually before the pandemic (2018-2019) which reduced to an average 2800 during the pandemic (2020-2021). 25% of cases reduced due to the pandemic.

Objective: Understanding the effect of COVID-19 on leprosy case detection in city and hill-tracks area in southeastern part of Bangladesh.

Material and Methods: Analyzed and compared National Leprosy Program (NLP) data of 4 years (2018-2021) and 4 KII with service providers of one city corporation and three hill-track districts in southeastern region.

Results: About 65% case detection reduced in city area in 2020-2021 compared to 2018-2019. About 68% MB, PB 54%, 65% male and 64% female case reduced in city area during COVID-19 period. About 21% case detection reduced in hill-tracts area in 2020-2021 compared to 2018-2019. About 40% MB, PB 6%, 19% male and 23% female case reduced in hill-tracks area during COVID-19 period. About 44% case reduced in city area during 2020-2021 compared to hill-tracks area. Majority of doctors stopped practising

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face to face and decrease in leprosy suspect cases referral during COVID-19. Outside people were not accepted in the city and strict movement restrictions in city compared to rural as COVID-19 prevalence was high in big cities. Limited fieldwork of leprosy actors during COVID-19.

Limitations: Rely on annual data of NLP.

Conclusion: During COVID-19 average 25% of leprosy cases were missing. So leprosy actors need to double their efforts on active case finding in normal situation from now on to reduce risk of leprosy transmission. Results suggest that leprosy actors need to develop a guideline for dealing any pandemic situation.

Keywords: Effect of COVID-19, Leprosy case detection, Rural and urban context

#0057/ ILCABS630

READY4PEP BASELINE STUDY IN MOZAMBIQUE

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Introduction: A baseline study is an analysis of the current situation in the community or of a system to identify the starting points for a program or project. Often it is used as a basis for comparison, for example when implementing a new intervention. NLR Mozambique, through the Ready4PEP Project, conducted a baseline assessment of the National Leprosy Control Program (NLCP) at Province, District and Health Facility level in one district of all four provinces which participated in Ready4PEP.

Objectives: Considering that contact tracing combined with single-dose rifampicin post-exposure prophylaxis (SDR-PEP) is a new approach in the Mozambican NLCP, this study aimed to assess the current status of the NLCP at all levels (provincial, district, health facility, self-care groups) and to provide recommendations for the integration of new strategies for leprosy elimination leprosy in Mozambique.

Material and Methods: We used survey forms to assess the current situation of NLCP in six groups, including the Provincial and District Supervisors, health workers linked to leprosy services, and members and facilitators of self-care groups. The form was divided into 4 themes/topics and consisted of 5 to 31 questions per theme/topic. Analysis was performed in EXCEL.

Results: At health facility level, health staff (nurses and technicians) knowledge level and skills on leprosy (suspect, diagnosis, treatment, and follow-up) need to be improved to guarantee a well-functioning leprosy control program. Self-care groups existed but need to be revitalized and the number expanded.

Limitation: The baseline covered only the districts for the pilot implementation of the Ready4PEP project.

Conclusion: The baseline study provided insights in the performance of NLCP, resulting in recommendations for the Ready4PEP project: improved health workers' training, increased contact tracing, SDR-PEP implementation/upscaling and the set-up and revitalization of self-care groups. These are important steps to strengthen the NLCP in Mozambique.

Keywords: Baseline, NLCP, SDR-PEP, Self-care, Ready4PEP, Mozambique

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#0058/ ILCABS646

EPIDEMIOLOGICAL CHARACTERIZATION OF CONTACTS OF PERSONS AFFECTED WITH LEPROSY – ARE ONLY THE HOUSEHOLD CONTACTS IMPORTANT?

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Introduction: Studies in the past have been limited to household contacts in terms of development of leprosy among contacts. Similar information on contacts other than household contacts is required to have a comprehensive epidemiological outlook for leprosy elimination strategy.

Objective: To understand the importance of 'Contacts' of 'Persons Affected with Leprosy (PAL)' including household, relative, neighborhood, social, relative, workplace, & 'any other contact' in terms of development of disease.

Methodology: Quantitative methods study wherein data was collected from 'PALs' (defined as Index-PAL for study purpose) on whether the Index-PAL had been in contact with any other PAL (defined as patient-contact for this study) prior to his/her developing the disease. Information was also collected on type of patient-contact as per objective above. Definitions were formulated for the type of contacts for this study.

Results: 401 Index-PAL were interviewed, of which 189 (47%) reported having patient-contacts. From these 189 Index-PALs, 231 patient-contacts were reported as few Index-PALs reporting multiple patient-contacts. Of these 231 patient-contacts, 108 (47%) were household contacts; 89 (38%) were neighbourhood contacts; 1 was (0.4%) social contact; 31 were (13.7%) relative contacts and 2 were (0.9%) workplace contacts.

Only 92 out of 401 (23%) Index-PAL recalled having a patient-contact in the Household. Or in other terms 301 (77%) did not mention the disease to have occurred in their household anytime in the past.

Limitations: Retrospective design of study and stigma resulting in recall bias and withholding of information respectively were mitigated by intensive counseling of respondents.

Conclusion: Above results establish that among the contacts, significant disease occurrence (more than 50%) is found in contacts other than household contacts. Targeting the contacts with an expansive definition inclusive of neighborhood, social, relative, workplace contacts for preventive methods would be a comprehensive strategy to interrupt transmission.

Keywords: Contact, Household, Neighbourhood, Relative, Workplace, Social

#0059/ ILCABS652

HIGH PROPORTION OF GRADE.2 DISABILITY IN NIRMAL DISTRICT OF TELANGANA

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Introduction: A non-governmental organisation (NGO) is supporting the National Leprosy Eradication Programme (NLEP) since 1989 in India. Till the functional integration in 2007, leprosy services were

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provided in Survey, Education and Treatment pattern. Thereafter, the NGO is providing secondary level care in a referral centre mode in several districts of India.

Reduction in Grade-2 disabilities among new cases to less than one per million population at national level is one of the goals of NLEP.

Nirmal district is formed in the year 2016 from erstwhile Adilabad district of Telangana. This study aims to highlight the very high deformity rate presented in the district during post elimination period 2009 to 2022.

Objectives:

1. To assess WHO disability grading among new cases identified

2. Calculation of annual deformity rate for the reporting period

3. Comparing the district deformity rates with state and national averages

Material and methods:

Study setting

Nirmal district has an estimated population of 9,02,8883 scattered in 428 villages in 3,845 sq. kms. where literacy rate is 58% only. All the epidemiological indicators except female proportion in the district are higher than the state, national averages

Materials:

Case records of the newly registered leprosy patients during 2009 - 2022

Methods: · Record based retrospective analysis of collected data

Statistical analysis

By MS Office - excel

Results: Among total 980 records were reviewed 200 cases (20.4%) had Grade 1 disability and 175 (17.9%) had Grade 2 disability. Though the fluctuations were noticed in annual Gr. 2 disability rate during the study period, it is found increased from 14.4% in 2009 to 18.5% in 2022.

Conclusion: An innovative early case detection approach may help in reduction of the Gr.2 disability in the district

Keywords: Lerprosy, Gr. 1 disability, Gr.2 disability, Deformity rate

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#0060/ ILCABS656

AN INTEGRATED TARGET APPROACH WITH GEO-INFORMATION SYSTEM TO EARLY DETECT AND PREVENT LEPROSY, YAWS AND BURULI ULCER AND REDUCE STIGMA AND IMPROVE PERCEPTION FOR INTERVENTION PRACTICES.

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Introduction: Effective antibiotic treatment being widely available in Togo, but the annual numbers of new Leprosy, Buruli ulcer and Yaws (LBY) cases stagnate, and many hidden cases are expected. Despite being treatable diseases, LBY still represents a neglected public health problem in Togo. There is a need to identify high-risk areas and their respective causes. Furthermore, a scarcity of dermatologists and limited trained healthcare workers hinder early diagnosis, prevention and treatment of LBY. Lack of knowledge and wrong beliefs about the diseases may also reinforce stigmatization that leads to unwilling to seek help.

Objective/s: We aim to determine the spatial distribution of LBY cases in Togo, identify risk factors for prevention and early intervention, and asses the change knowledge, attitude, and practice (KAP), and stigma through training toward capacity building.

Patients / material and methods: We use Geo-Information-Systems to identify high-risk areas and perform a three-arm cluster randomized controlled trial among high-risk villages. The clusters will be randomized to the intervention delivered with sensitization campaigns (group1), or a combination of both sensitization campaigns and audio-based information tool audiopedia (group2), or a control group (group3). KAP will be assessed at two weeks after interventions. Our power analysis determined a sample size of 1200 community members.

To assess acceptability of interventions, we will run a focus group discussion with community members.

Results: Ongoing study

Limitations: Due to the nature of the intervention, randomization at individual-level is not possible. Nevertheless, 60 villages will be a sufficient cluster size for three treatment arms that are randomly assigned at the village level.

Conclusion: The results of this study will help to inform and target capacity building and information campaigns on LBY in Togo. Our KAP assessment will further provide evidence about impact of sensitization campaigns and use of audio-based tools on knowledge and stigmatization.

Keywords: Togo, NTD, Mapping, PEP, Perception, KAP

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#0061/ ILCABS668/ILCABS746

THE OUTCOME OF INTEGRATED LEPROSY PREVENTION AND COMPLICATIONS MANAGEMENT PROJECT ON NEW CASES OF LEPROSY IN CABO DELGADO PROVINCE IN MOZAMBIQUE.

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Introduction: Leprosy remains a problem in Mozambique with 2,065 new cases of leprosy diagnosed in 2020 with 399 of them diagnosed late with Grade II disability.

In response, The Leprosy Mission Mozambique delivered a Leprosy Control and Complications Management Project (LCP) from 2018-2021 aimed to improve the quality and sustainability of leprosy, other neglected tropical disease and disability services to reduce transmission of leprosy and prevent disability in the Cabo Delgado province of Mozambique where leprosy is highly endemic.

The objective of this paper is to document the project interventions,outputs and results.

Materials and Methods: The project conducted leprosy awareness and screening activities and built capacity in service provision at health facility and community level in Cabo Delgado. Self-care groups were supported and an ulcer register developed and implemented. LCP strengthened the health staff's skills in leprosy diagnosis and treatment, trained community volunteers on signs/symptoms to identify and refer suspected cases for diagnosis. The project worked with local communities to form village-based leprosy committees. Accordingly, 576 community volunteers and 55 health posts were trained, and 33 village-based leprosy committees were formed.

Results: Knowledge of leprosy prevention and management improved, and level of grade 2 disability at diagnosis reduced to 11% in the target area,compared to 14% prior to the project. The participation of people affected by leprosy in self-care improved with 1,337 people with leprosy and other NTDs actively participating in 68 self-care groups.

Limitations: This study was not controlled or randomised, making it difficult to fully attribute the reduced level of grade 2 disability to the project.

Conclusion: The LCP project was successful in strengthening the health system and empowering community groups to find and diagnose new cases of leprosy early,thus improving t quality of life for people affected by leprosy in the project areas.

Keywords: Outcome, Leprosy, Prevention, Diagnosis, Cabo-Delgado, Mozambique

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#0062/ ILCABS684

HANSEN'S DISEASE ZOONOTIC RISK LINKED TO INFECTED ARMADILLOS IS POTENTIALLY IMPORTANT IN FRENCH GUIANA

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Introduction: Armadillos are a reservoir for Mycobacterium leprae (ML) in the Americas. The zoonotic risk of Hansen's disease (HD) in South America is not yet fully explored. French Guiana (FG), where armadillo hunting and consumption is widespread, has approximately 10 new HD cases annually, suggesting a zoonotic risk that needs to be assessed.

Objectives: We assessed the zoonotic risk of HD in FG, evaluating naturally acquired ML infection in armadillos, contact with armadillos as a HD risk factor, and comparing human and armadillo ML strains.

Material and methods: We sampled armadillos in FG from 2014 to 2021, to detect ML infection by RLEP qPCR and phenolic glycolipid-1 (PGL-1) and Leprosy IDRI Diagnostic-1 (LID-1) serologies. We searched acid-fast bacilli (AFB) histopathologically in positive animals. We included HD patients diagnosed in FG from 2006 who accepted to participate. ML and M. lepromatosis were assessed in skin biopsies by respectively RLEP and LPM qPCR assays. ML-positive samples were genotyped by whole genome sequencing. We conducted a 1:3 case-control study with an exposure questionnaire including lifetime contacts with HD patients and armadillos.

Results: We found 29/172 (22.7% [95%CI: 16.4-29.0]) ML-infected armadillos of 3 different species, most of them with AFB. We did not find M. lepromatosis either in armadillos or in humans. Preliminary results of the case-control study indicate that contact with armadillos is a HD risk factor (OR=2.9 [95%CI: 1.3-6.5], p=0.01, adjusted on contact with HD patients). Preliminary results of patient's genotypes are 1D, 4O and 4N. Genotype analyses in armadillos and patients are ongoing.

Limitations: ML genotyping is ongoing and comparative genomics of human and animal strains would confirm the increased zoonotic risk in FG.

Conclusion: These data show that large numbers of armadillos in FG harbor ML, and may be a significant source of infection for many people in the region.

Keywords: Mycobacterium leprae, Mycobacterium lepromatosis, Armadillo, Zoonosis, French Guiana, Genotypîng

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#0063/ ILCABS686

CURRENT LEPROSY SCENARIO IN POST ELIMINATION ERA IN A TERTIARY CARE HOSPITAL.

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Introduction: Leprosy is a chronic granulomatous disease caused by Mycobacterium leprae primarily affecting the skin and peripheral nerves. Leprosy causes permanent and progressive physical deformities and disabilities, leading to crippled life coupled with stigmata creating grave socio-economic problems in the community. Though Leprosy has been officially eliminated from India in December, 2005 at national level, it has still been a major public health problem in some parts of India where the prevalence far exceeds the elimination level.

Aims and Objectives: To study the various demographic factors, clinical features and spectrum of leprosy in a tertiary care hospital.

Materials and Methods: A retrospective study on the current scenario of leprosy conducted from October 2020 to April 2022.All cases diagnosed as leprosy with or without treatment were included. Record details of age, sex, clinical type, deformities and treatment status were noted.

Results: and Discussion: Among the 311 cases noted, males outnumbered females and 117 were new cases (37.6%). The peak age of incidence was between 21 – 40 years with children (<16 years) being 6.4%. Majority of the cases belonged to lepromatous spectrum (55.3%) and tuberculoid spectrum (44.7%). Deformities were present in 16.7% cases and 12.5% cases developed reactions with type 2 being predominant.

Limitations: The study was conducted in a single tertiary care center and community-based surveys covering the district population could not be done.

Conclusion: In our study we observed higher proportion of lepromatous cases and rise in the incidence of childhood cases. This indicates the continuing transmission of leprosy despite statistical elimination. Henceforth, it reflects the need for active surveillance, early diagnosis, treatment and education among masses, during and after treatment to bring down the disease burden in the community.

Keywords: Leprosy, Lepromatous leprosy

#0064/ ILCABS690

NEW HOSTS AND NEW PLACES IN THE ENVIRONMENT FOR MYCOBACTERIUM LEPRAE: IMPLICATIONS FOR NEW SOURCES OF TRANSMISSION.

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Introduction: Humans are considered the main host for Mycobacterium leprae and the related species M. lepromatosis, the causative agents of leprosy. Until fairly recently, documented spill-over into other animal species appeared to be limited, with rare findings of *M. leprae* infection in captive non-human primates such as chimpanzees, mangabeys and macaques. In the 1970s, it was discovered that wild nine banded armadillos

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(Dasypus novemcintus) living in the southern United States were widely infected, ranging between 10-20%. SNP strain typing revealed that *M. leprae* was a zoonotic disease in armadillos that was responsible for at least two-thirds of endemic human leprosy cases in this region.

Perspective: In western Pará state in the Brazilian Amazon, 62% of nine banded armadillos were infected while 100% of six banded armadillos (Ephractus sextinctus) in Rio Grande do Norte state in northeastern Brazil were infected. *M. leprae* infection was detected in an armadillo in Nuevo León, Mexico that was found to be closely related to 3I strains infecting humans in the same region. Both *M. leprae* and M. lepromatosis were found to infect wild squirrels in the British Isles. Wild chimpanzees located in forested areas in two different countries in West Africa, Guinea Bissau and Ivory Coast, were found to be infected with unusual and ancient *M. leprae* strains, 4N/O and 2F. *M. leprae* DNA has been reported to be isolated in 16% of soil samples around the houses of high BI leprosy patients in Bangladesh, 10.7% from soil from the burrows of armadillos in Suriname, and 5% from soil from the habitat of lepromatous red squirrels in the UK.

Conclusion: The list of animal reservoirs and environments where *M. leprae* exists has expanded recently. Clearly recent evidence suggests that a One Health approach of *M. leprae* transmission should broadly include humans, animals and the environment.

Keywords: Zoonotic transmission, Environmental reservoirs, Strain typing, Adaptation

#0065/ ILCABS699

EARMARKED FUNDING TO STIMULATE POPULATION BASED ACTIVE CASE-FINDING FOR LEPROSY – INITIAL RESULTS OF AN NGO INITIATIVE IN SIX AREAS ACROSS FOUR COUNTRIES

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Introduction: To increase its contribution to WHO's objective of 'accelerating towards a leprosy-free world', a UK Leprosy NGO began funding partner organisations in less-developed countries to conduct population-based active case-finding for leprosy.

Objective: To examine/screen all or most members of target populations in which leprosy endemicity is relatively high, such as an area in which recently diagnosed leprosy cases are resident or hard-to-reach populations in which suspect leprosy cases are likely to be found.

Material and methods: Six grants of around $36,000 ($12,000 annually) each were awarded for three programmes in India and one each in Pakistan, Bangladesh, and Nepal to find new cases of leprosy through actively examining all in specified target populations. Each programme is expected to ensure suspect cases undergo expert examination and/or skin-slit microscopy to enable confirmation of a leprosy diagnosis prior to treatment and contact-management. Another requirement is six-monthly progress reporting to each national programme and to the UK NGO.

Results: The reported first year aim for the six programmes was to screen 409,000 individuals (range 3,000 to 150,000). After 6 months, 244,287 (60%) were examined, and 503 suspect cases found, including 147 confirmed leprosy cases (0.6 confirmed cases per 1,000 screened and the male: female ratio was 75:72). Multi-bacillary leprosy was reported for 57 cases and G2D in 12 cases. Across the programmes there was a large variation in the rate of suspect cases detected from 0.08 to 21 per 1,000 screened.

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Limitations: The information requested by the funding UK NGO is inadequate to explain the variation between local programmes in the rate of suspect cases reported. Each programme, however, succeeded in detecting new cases of leprosy.

Conclusion: Earmarked funding for active case-finding stimulated outreach activities to detect new leprosy cases at an average rate of 0.6 cases per 1000 individuals screened.

Keywords: Leprosy, Active case finding, Zero leprosy, Elimination, 2030, Diagnosis

#0066/ ILCABS706

ILLEGAL GOLD-MINERS IN FRENCH GUIANA ARE INTENSIVELY EXPOSED TO HANSEN'S DISEASE

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Introduction: Illegal gold miners (IGMs) in French Guiana (FG) are a hard-to-reach population, who mainly come from HD-endemic states in neighboring Brazil. They work in cramped conditions in remote mining camps in the rainforest and have precarious nutrition and sanitation.

Objectives: We aimed to assess the intensity of exposure to HD among IGM in FG.

Material and methods: A multicentric cross-sectional survey was conducted in FG in 2019 to assess malaria prevalence in IGMs. The medical check-up included dermatological examination, blood sample and questionnaire.

Phenolic glycolipid-1 (PGL-1) and Leprosy IDRI Diagnostic-1 (LID-1) serologies were performed on sera. Serologies were considered positive if OD540 was ≥725 or ≥325 and borderline positive if [700-725] or [300-325], respectively for PGL-1 and LID-1.

Results: Of the 380 IGMs included, 73.1% were men, 95.5% were born in Brazil and 45.6% were working in gold mining for more than 10 years. Nine IGMs (2.4%) had a history of HD and/or a clinical sign compatible with HD. Among the 371 leprosy serologies performed (9 insufficient samples), 56.1% had either a positive PGL-1 or LID-1 serology and an additional 4.6% had a borderline positive serology. We had serology results for 7/9 IGMs with HD history and/or clinical signs, out of which 6 had a positive PGL-1 serology, indicating probable active HD (n=4) or treatment failure or relapse (n=2). We found no association between leprosy serology and age, gender, place of birth or seniority in gold mining.

Limitations: We didn't have histopathologic or PCR confirmation for IGMs with possible HD, nor did we have risk factor data to assess the origin of exposure to the bacilli causing HD.

Conclusion: A majority of IGMs in FG had a positive leprosy serology, like those found in hyper-endemic areas in Brazil, indicating a high intensity of exposure to HD in this population.

Keywords: Hansen's disease, Leprosy serology, Illegal gold miners, French Guiana

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HYPERMUTATED MYCOBACTERIUM LEPRAE STRAIN CAUSING PRIMARY DRUG-RESISTANCE DETECTED BY ACTIVE SEARCH IN AN ENDEMIC AREA OF THE BRAZILIAN AMAZON

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The continuous loss of expertise to diagnose leprosy, the absence of complementary tests to help physicians and other health professionals, and the lack of drug-resistance monitoring contribute to maintain leprosy active in the communities. Fieldwork was carried out in the city of Castanhal, at the Amazon region, using three complementary strategies including 318 participants with clinical and laboratorial examinations. We diagnosed one relapse in 23 index cases examined (1/23;4.3%), 7 new cases among 178 schoolchildren (7/178; 3.9%) and 11 new cases among household contacts (HHC;11/111; 9.9%). Six people come to us as spontaneous demand after acknowledging a team of specialist was in town. All were diagnosed with leprosy. Anti-PGL-I IgM antibodies titers were seropositive in 52.0% (13/25) of leprosy cases, in 24.6% (42/171) of schoolchildren, and in 40.0% (40/100) of HHC. Considering all new cases, 45,8% (11/24) were RLEP qPCR positive in Slit Skin Smears (SSS), and 41,2% (7/17) in the biopsy of lesional skin. Besides, RLEP qPCR from SSS was positive in 31.8% (7/22) of treated cases and in 23.1% (18/78) of tested HHC. By whole genome sequencing it was possible to detect two 4N SNP strains and to analyze the drug resistance determining region (DRDR) in four strains. Three (3/4; 75.0%) were wild type (sensitive) strains, and one (1/4; 25.0%) hypermutated Mycobacterium leprae strain, with mutations in the genes folp1 (P55L), gyrA (V731I), gyrB (T503I), fadD9 (G796S), ribD (A63T), pks4 (M14I) and nth (N142fs). Our findings demonstrate the continuous transmission of leprosy in this endemic area of Brazilian Amazon, represented by the very high hidden prevalence of overt disease, as well as a subclinical infection of challenging diagnosis. This scenario is worsened by the presence of drug resistant *M. leprae* strain that is potentially circulating in this population.

Keywords: *M. leprae* resistance, Drug resistance, Endemic area, Brazilian Amazon

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AN EYE FOR LEPROUS FACE RECOGNITION: A PRACTICAL AND EFFECTIVE TOOL IN TRACKING DOWN THE SOURCE OF LEPROSY INFECTION; A NOVEL STUDY IN TWO LEPROSY ENDEMIC DISTRICTS.

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Introduction:

Leprosy is an airborne bacterial disease and human beings are still considered as prime reservoir of leprosy infection in the community. In absence of anti-leprosy vaccine, the key to Leprosy Eradication is the detection of infectious cases (BL/LL) at an early stage and their adequate MDT.

Failure to recognize the early manifestations of such source cases has adversely impacted the interruption of transmission in the community. Conventional leprosy surveys seem to have limitations in detecting all source cases.

Objective: To detect leprosy cases of public health importance (BL-LL) early in endemic locations, thereby interrupting the leprosy transmission effectively.

Material and methods: The base of the study is 12 cases suspected by casual observation of faces in public places/social gatherings for leprous features. A non-conventional method was used, an Eye for Leprous Face Recognition (ELFR) Technique, a knowledge-guided tool to detect infectious leprosy case.

Health care staff was sensitized and optimally trained in ELFR technique. Slit skin smear test was done to confirm diagnosis of cases suspected through ELFR technique.

Results: 11 (92%) out of 12 infectious leprosy suspects identified through ELFR Technique were confirmed as infectious by skin smear examination; one case was ruled out as non-leprosy. 10 (91%) out of 11 cases were untreated and 1 was a case of leprosy relapse 15 years after MDT. These cases were missed out–went unrecognized during leprosy surveys.

Limitations: This is an intervention-based study without a control group.

Conclusion: ELFR Technique can become an effective tool in tracking down human reservoirs of leprosy. The authors recommend NLEP to incorporate, on priority, 'ELFR Technique', to be adopted during leprosy surveys, in trainings of public health functionaries. And undertake periodical special Rapid ELFR Surveys in populous locations in leprosy endemic geographies to hasten the process of interruption of leprosy transmission.

Keywords: Reservoir of leprosy infection, Interruption of leprosy transmission, Leprous Face Recognition. Infectious leprosy, Rapid survey, Skin smear

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#0069/ ILCABS766

PREVALENCE OF LEPROSY ULCER AND ITS PROFILE IN THE COMMUNITY

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Introduction: Introduction: Ulcers are a major cause of disability in leprosy. Up to 20% of people affected by leprosy are at risk of developing ulcer, even after being released from treatment. Ulcers can be chronic, taking months to years to heal and have a tendency to recur if not cared for properly. Identifying the prevalence of ulcers and profiling affected patients will help understand the magnitude of the problem in the community and to target the at-risk individuals for preventative care. Education on and practise of diligent self-care is mandatory in preventing ulcers and disability to improve quality of life.

Objectives: To describe the, 1) Prevalence of leprosy ulcers in the community, 2) Socio-demographic and clinical profile of leprosy patients with ulcers in the community, 3) Patients/material and methods

This cross-sectional descriptive study is being conducted in one of the leprosy endemic states of India, in a rural setting. Data obtained from government healthcare registers was used to identify and trace leprosy patients in 9 blocks in the community who had completed MDT treatment 5 years ago. Patients with neuropathy and leprosy ulcers were identified and included. Socio-demographic and clinical details were collected using questionnaires after obtaining informed consent. Ulcers were photographed for measurement purposes.

Results: From 4 out of 9 blocks covered, 257 persons were found to have neuropathy. 142 patients had history of ulcer, and 68 patients were currently having ulcer. Data collection is ongoing. The ulcers will be described along with the data.

Limitations: Patients released from treatment since last 5 years only were included. Patients not on the government registers may have been missed.

Conclusion: Leprosy ulcer numbers in community are significant. Community-based self-care interventions are essential.

Keywords: Leprosy, Ulcer, Prevalence

#0070/ ILCABS784

GIS MAPPING OF DISTRIBUTION OF LEPROSY CASES AT VILLAGE LEVEL IN SINDHUDURG DISTRICT, MAHARASHTRA STATE

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Background: India achieved leprosy elimination as public health problem at National level, but at sub national level, some areas still have persistent endemicity. Geographic Information System (GIS) helps to monitor different indicators at State, District, block and at village level. It also provides geological analysis of epidemiological indicators, identifies high endemicity and areas that needs to be for interventions to reduce

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leprosy burden. Digitalized mapping gives broad visualization of analyzed data and highlights correlation between adjacent districts or states across geographical borders.

Aim and Objectives: To study distribution of leprosy cases at village level and find out zero leprosy villages based on operational definition and linked to geographical locations.

Methods: Leprosy data was collected from Upgraded Simplified Information System from 2016 to 2021. A total of 780 villages were mapped in GIS. The data was entered into open-source software, and maps were plotted as per variables.

Results: Out of a total of780 villages in the district, 596 (76%) have had no active cases of Leprosy since 2016. 184 (23.5%) villages had one or two active leprosy cases while only six (0.76%) villages had three or more active leprosy cases. Out of six villages three villages are from Malvan block and remaining three villages are from Vengurla, Savantwadi and Kudal block

Conclusion: Geographical analysis of indicators gives idea about transmission level of leprosy at village level and helps to identify high risk zones for initiating new case detection activities in high endemic districts. From the epidemiological and program management point of view, GIS is a useful tool to understand disease trends and to plan and implement focused strategies at village level

Keywords: Village, GIS (Geographic Information System), Zero leprosy

#0071/ ILCABS798

IMPACT OF COVID-19 LOCK-DOWN ON ADHERENCE TO ANTI-LEPROSY TREATMENT.

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Inroduction: Leprosy, one of the oldest disease of mankind, is a chronic infectious disease caused by Mycobacterium leprae. It mainly affects skin and peripheral nerves. It manifests in different forms with paucibacillary tuberculoid leprosy (TT) on one pole and multibacillary lepromatous leprosy(LL) on other end of spectrum. Early treatment in leprosy is of utmost importance as that can prevent disability and permanent damage. In early December-2019, an outbreak of coronavirus disease 2019 (COVID-19) occurred in China, the World Health Organization declared the outbreak a pandemic on March 11, 2020. Following which Indian government released advisories where routine outpatient services were nonfunctional in the country.

Aims and Objectives: To evaluate the impact of COVID-19 lockdown on adherence to anti-leprosy treatment

Materials and Methods: A questionnaire based study was done on patients who were on antileprosy treatment between November-2019 to April-2021.

Results: There were total 64 patients registered for Multi Drug Therapy(MDT) during study period. 47 patients could be contacted via telephone, of which 20 (42.5%) completed treatment, 10 (21.2%) are under regular treatment, 5 (10.6%) had interrupted and 12 (25.5%) have stopped the treatment. 26 patients were given aMDT (accompanied-MDT) for 2-3 months. The various reasons for discontinuation of MDT was lack of transportation during lockdown, migration to hometown and avoidance of hospital visit due to fear of COVID 19 disease.

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Limitations: Seventeen patients could not be contacted due to incorrect contact information and detailed information was collected over telephonic conversation with the patient and not in person.

Conclusion: Major concern regarding discontinuation of MDT during lockdown period was due to lack of transport. Patients were given aMDT and those patients who visited centres other than registered centres were not denied of treatment.

Keywords: Leprosy, COVID-19 Pandemic

#0072/ ILCABS805

CHILDHOOD LEPROSY: "A CHINK IN THE ARMOUR" IN THE POST ELIMINATION ERA

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Introduction: Leprosy was declared to be eliminated from India in 2005. Despite achievement of elimination, the prevalence of leprosy among childhood continues to be high. Childhood leprosy acts as an important marker to determine the efficiency of the ongoing leprosy control programme and also the active transmission of disease in the community.

Objective: To study and analyse the pattern and clinical-epidemiological aspects of children affected with leprosy in a tertiary care hospital

Methods: This is a 16-year retrospective study from 2005 to 2021 conducted at the tertiary care hospital, India. Records with details of demographic data, clinical features, slit skin smear results, type of leprosy were collected and analysed to describe the clinical pattern and epidemiological trends of leprosy in children below 16 years.

Results: A total of 572 clinico- laboratorically confirmed leprosy cases were encountered in our institution. Among which, 56 (9.79%) cases were children between 0 to 16 years of age. Majority of them belonged to 10-16 years of age group(51.7%), with female predominance. PB cases were significantly more (91.4%) than MB cases (8.6%).Borderline tuberculoid leprosy was the commonest type seen (67%)followed by tuberculoid leprosy. Most common site involved was upper extremities followed by face. Grade 1 deformity was observed in 4.3 % of childhood cases. 8.6% of children had a contact in family or neighbourhood . Slit skin smear was positive in 45.6 % cases.

Limitation: This is a retrospective study.

Conclusion: Leprosy has been declared to be eliminated, but recent reports suggest a rise in newly detected cases. Positive family history suggests the importance of examination of children of adult patients presenting with leprosy. Thus, active surveillance among children is the need of the hour for the control of the disease. Till then, childhood leprosy will continue to be " a chink in the armour"

Keywords: Childhood leprosy, Post elimination era

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#0073/ ILCABS841

RETROSPECTIVE CHART REVIEW OF HOSPITAL RECORDS OF LEPROSY PATIENTS WITH OR WITHOUT G2D TO COMPARE DEMOGRAPHIC AND DISEASE PARAMETERS INFLUENCING PATIENT OUTCOMES

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Retrospective Chart Review (RCR) is a well-known method of identifying trends from patient records. Patients records over many decades from a referral hospital for primary/referral treatment, in electronic format provides a unique opportunity. It helps in evaluating parameters around patient care, which can generate insights and effect on better patient care.

Objective's: Applying RCR methodology for identification of early trends for further exploration

Patients / material and methods: Data from 6495 patients who visited hospital for Leprosy/related treatment, including out-patient or in-patient treatment, were part of database evaluated on various demographic parameters. Summary statistics were generated to compare results with that of state and country statistics. Ethics committee approval was received to evaluate patient's data, in an anonymized fashion.

Results: A majority of the patients (around 58%) were from Telangana state, especially from Hyderabad and adjacent districts. The average leprosy footfall increased over the years, with average of 35 patients/ month in 2021. Access to some parts of society, such as Scheduled Tribes has improved over the years to be closer to state percentage (10.4% vs. state percentage of 11.7%). Majority of the patient visiting the hospital are adults (80%), with 50% of them in the early adulthood age bracket (18-45 yrs). Gender bias of males seeking for treatment more often was seen across age groups. Approx. 43% of the visits to the hospital was for medication, 29% accounted for the first visits and the rest were for management of complications (Ulcer treatment (11%), physiotherapy (9%), Lepra reactions (3%) and others (5%)).

Limitations: Similar to other observational studies. However, it is an opportunity to confirm the parameters influencing patient care, which can be used for designing future cohort-based studies and research.

Conclusion: Ongoing digitalization of patient records provides a unique opportunity to identify insights for future research for improving patient care.

Keywords: Digitalisation, RCR Methodology, Identifying trend

#0074/ ILCABS847

OUTCOME OF HOUSE HOLD CONTACT SURVEY: A RETROSPECTIVE ANALYSIS OF CASES UNDER REGULAR SURVEILLANCE IN HYDERABAD DISTRICT, TELANGANA.

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Outcome of House Hold Contact Survey: A retrospective analysis of cases under regular surveillance in Hyderabad District, Telangana.

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Introduction: Leprosy often goes undetected due to lack of awareness among the public and lack of regular surveillance by the health staff. Household contact examination is an important method of detection of new cases in leprosy endemic areas. The routine regular surveillance period is 2 years for PB and 5 years for MB in India.The greatest yield of new cases is usually from the house hold contact survey soon after the identification of an index case.

Objectives: 1To investigate the size of the population at risk for leprosy and to determine the size of the problem &emphasize and establish the importance of regular active surveillance of the household contacts in identification of hidden cases of leprosy.

Materials&Methods: A retrospective cross sectional analysis of the available records of the contact survey of cases in the district of the Hyderabad during 2017 – 2022 under NLEP. Informed oral consent was obtained from the index case to visit his home for further screening of house hold contacts. The house hold contact survey was conducted by the experienced field staff and the correctness of the data is validated by trained Medical officers.

Results: 6 new cases were identified out of 3334 house hold contacts of the 643 index cases identified during 2017-202with the detection rate 0.9%.

Conclusion: Field staff who undertake contact surveillance should sensitize the house hold contacts about the risk of developing the disease. Considering the chronic nature of the disease and the low rate of new case detection demonstrate in study mandates prolonged active surveillance as defined in the guidelines.

Limitation: Incompleteness of data as during the household contacts who were absent at the time of contact

Keywords: Surveillance, Awareness, Sensitize, Demonstrate, Guidelines, Identified.

#0075/ ILCABS849

ADDITIONAL INTERVENTIONS THROUGH COMMUNITY BASED CASE DETECTION, FOR REGULAR CASE DETECTION ACTIVITIES IN THE DISTRICT OF DIBRUGARH DURING COVID19 PANDEMIC, AIFO/ILEP INITIATIVE TO ASSAM NLEP 2021.

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Introduction: During the pandemic, Case detection showed a decline of about 40% attributed due to COVID19 operations; while in Dibrugarh district showed no decline.

The Central Leprosy Division due pandemic, directed to focus on leprosy programme as "COVID19+ Leprosy", COVID19 as emergency services, other as Essential services. Active Case Detection and Regular Surveillance strategy was introduced.

Community Based Case Detection activity is not a new strategy for leprosy Programmes, and during the pandemic a hybrid Case detection strategy was developed and complimenting to Regular Case detection activities - January to November 2021.

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Objectives: To:improve Case detection in Dibrugarh district, develop a hybrid strategy, assess the use of IEC material and methodology by the volunteers and people .

The volunteers, people from the Tea gardens own ownership and participate

Materials and methods: Out of 175 tea gardens, 45 selected, with 107,203 population, 20,756 houses covered, District programme selected 55 tea gardens under its activity

15,000 IEC pictorial handouts distributed to each house,

By volunteers 102 (Male-61, Female-41) supported 58 ASHAs, 12 Supervisors (Sardars), 39 Tea Garden hospitals, 5 Non Medical Assistants from leprosy programme and Project Team

Operational training Volunteers, IEC material distributed to each house explained procedures, Volunteers report to team if there are suspects, examined, confirmed and managed.

Results: District detected 70 cases on average yearly, and during Pandemic total 73 cases registered.

Through community based activity 45 cases (50%) detected, 24 (63%) multi-bacillary,42 adults, and 3 child cases, 8 cases with deformity.

After 6months 55 houses were assessed the usage of IEC handouts and was found in 5 houses, remaining 50 had misplaced, misused or lost.

Conclusion: Any activity need alternatives activities – to form a Hybrid activity for adequate coverage to detect missed cases.

Details to be discussed during presentation

Keywords: Leprosy control, Covid19, Case detection, Tea gardens

#0076/ ILCABS886

SOCIAL AND PERSONAL FACTORS AFFECTING LEPROSY DETECTION IN RURAL COMMUNITY

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Active leprosy case detection campaigns (LCDC) still detect more new child and adult cases. This could be due to gaps in early diagnosis, knowledge and/or psychosocial stigma about the disease,it's name or its sequelae.

Objectives:1)To describe socio- behavioural factors affecting detection and help seeking behaviour among patients and their family members 2)To estimate the level of knowledge of patients about leprosy.

Materials & Methods: Study was conducted under model rural health research unit mentored by ICMR. Patients detected by LCDC Campaign during the fiscal years 2018-19 and 2019-20 from the line-listed cases of District leprosy office belonging toHUD rural blocks.Data were collected using prepiloted and validated case record form by house visits or in PHCs, by secondary data collection as well as patient or LAR interview (questionnaire based) after obtaining written consent.

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Results: Of the total 43 cases, 70% were adults & 30% were children. PB cases were 67.4% & MB cases were 32.6%. Children were more detected in LCDC when compared to routine practice by NLEP.Delay in diagnosis from onset-3 months to 18 months in majority & 1 to 4 years in others. Factors affecting early detection were found to be :i)Lack of knowledge: 61% had ignored the patches even though the patches were on the visible sites and 50% still carry misconception about its spread (water, touch or animals) and 60% still don't know about its aetiology ii)Self stigma : 47% were ashamed of the diagnosis iii)In 20%, the delay was due to non-detection by medical officers(including alternatesystems) iv) Socio-behavioural issues about the diagnosis itself still persist ;most treated patients were told to get treatment for skin disease but not told exactly about the disease diagnosis

Conclusion: Leprosy still evokes strong psychosocial stigma which in addition to lack of knowledge about disease nature delays detection

Keywords: Leprosy, Delay in detection, Knowledge, Social and personal stigma, Help-seeking behaviour, Rural community

#0077/ ILCABS895

CLINICO-DEMOGRAPHIC STUDY OF PATIENTS WITH HISTOID LEPROSY: AN ANALYSIS OF PATIENTS REGISTERED IN LEPROSY CLINIC AT TERTIARY CARE CENTER FROM NORTH INDIA.

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Background: Histoid leprosy, a rare clinical variant of lepromatous leprosy, characterized by distinct morphological and histopathological features while having high bacterial load which may acts as a reservoir for infection posing a great threat in the contemporary post leprosy elimination era.

Objective: To identify the demographic, clinical and pathological characteristics of histoid leprosy in northern India.

Methods: This is a retrospective study including patients of leprosy registered in leprosy clinic at our tertiary care center during the period from January 2010 to December 2021. All cases clinically and histopathologically suggestive of histoid leprosy were included in our study and all relevant data were recorded and analyzed.

Results: Histoid leprosy comprised about 2.89% (45 out of 1554) of all leprosy cases registered at our institute spanning a period of 11 years. Median age of the patients included in the study was 29.5 years (interquartile range ± 16.5) and male: female ratio was 4.6:1. Previous history of leprosy was obtained in 51.2 % of patients and de novo development of histoid leprosy in 48.8% of patients. Median baseline bacteriological index was 5 (IQR± 1) while median of morphological index was 6 (IQR 2-10). Papules followed by nodules were the common presentations noted in the study. Trunk, and extremities followed by face were the frequent site of involvement, and the ulnar nerve was enlarged in most cases. Although reactions are unusual in HL, 33% of patients had developed type 2 reactions (erythema nodosum leprosum).

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All cases responded well to World Health Organization multibacillary multidrug therapy (MB-MDT) except in few having recurrent reactional episodes after release from treatment.

Conclusion: High index of suspicion is needed in early diagnosis and management of histoid leprosy as the morphological presentation can mimic various other infectious diseases to decrease the rate of leprosy transmission.

Keywords: Histoid leprosy, Lepromatous leprosy, Type 2 lepra reaction, Erythema nodosum leprosum

#0078/ ILCABS906

NUTRITIONAL PROFILE, FOOD CONSUMPTION AND FOOD INSECURITY AMONG PEOPLE AFFECTED BY LEPROSY IN A HYPERENDEMIC AREA IN BRAZIL

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Introduction: Leprosy is strongly related to poverty. A healthy diet is fundamental to support appropriate immunological system functions. Food insecurity is a lack of consistent access to enough food for every person in a household to live an active, healthy life, and this situation can lead to increased vulnerability to infectious diseases. Objective: To evaluate the nutritional profile, food consumption, and the level of food insecurity among people affected by leprosy. Methods: A total of 71 leprosy patients from a hyperendemic area in Brazil were evaluated in an observational cross-sectional study. The subjects were interviewed, and we applied the Food Insecurity Brazilian Scale (EBIA) and a food frequency questionnaire. Anthropometrics measures, such as weight, height, body perimeters, and skinfolds, were taken. Results: We identified that 58/71 (81.7%) of the subjects experienced food insecurity, 30/71 (42.3%) with its severe form. These figures are 1.4 and 4.7 folds higher than the national average. Overweight was detected in 7/12 (58.3%) of kids and adolescents, 24/48 (50.0%) of adults, and 4/11(36.4%) of elderly people. Otherwise, 2/11 (18.2%) of the older patients were underweight. Skeletal muscle mass depletion was observed in 7/12 (58.3%) of kids and adolescents, 12/48 (25,0%) of adults, and 5/11 (45,5%) of elderly patients. The subjects reported low consumption of fruits and vegetables. Individuals dealing with severe food insecurity reported a higher frequency of ultra-processed food consumption and less ingestion of unprocessed and minimally processed food. Limitation: The pandemic of COVID-19 limited our capacity to increase the sample size. Biochemical measures could enhance the strength of our evidence. Conclusion: Our finding demonstrates the relevance of nutritional evaluation of people affected by leprosy and the demand for public policies to guarantee food security as part of the leprosy control program.

Keywords: Leprosy, Food security, Nutritional profile, Food consumption

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#0079/ ILCABS919

SITUATIONAL DIAGNOSIS ON LEPROSY CONTROL ACTIVITIES IN A HYPERENDEMIC MUNICIPALITY OF NORTH-EASTERN BRAZIL

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Introduction: Although there is a protocol for leprosy control activities (LCA), local health systems, especially in endemic areas, cope with diverse constraints, such as shortness of resources, that have contributed to perpetuating leprosy as a public health problem in specific areas. Objective: To carry out a situational diagnosis of LCA in a hyperendemic municipality in Brazil. Methods: An observational study with a quali-quantitative approach. The municipality's LCA were evaluated through the Leprosy Elimination Monitoring Exercise. Program managers, healthcare professionals and people affected by leprosy were interviewed. Clinical and epidemiological data were collected from the Notifiable Diseases Information System (SINAN). Additionally, the street addresses of the cases were mapped to correlate with the coverage of the primary health system. Results: From 2001 to 2020, 6,726 cases were reported in the municipality of Imperatriz/Maranhão, and 5,842 were mapped (87.8%) in the urban area. The territory covered by 39 healthcare teams (95%) were georeferenced. While 54.2% of the mapped cases were in the covered area, 51.4% of the cases diagnosed with grade 2 physical disability were outside the primary healthcare covered area. Only 23/153 (15.1%) of the medical records analyzed had their grade of physical disability registered at the time of their release of MDT. For treatment, 20.5% of patients need to go monthly to the leprosy referral center for supervised dosing and monthly follow-up. Those patients spent more time and money to reach the health facility than those treated at the closest basic health unit. Limitation: This study was partially done using secondary data from SINAN, which lack complete data on some variables. Conclusion: Our results showed that the local leprosy control program in Imperatriz, and likely in such other hyperendemic areas, need constant monitoring, supervision and support to overcome the difficulties to eliminate leprosy as a public health problem.

Keywords: Leprosy, Health system, Monitoring, Epidemiology, Mapping.

#0080/ ILCABS922

EVALUATION OF TRENDS OF LEPROSY AMONG RESIDENTS VS MIGRANT POPULATION IN A TERTIARY CARE CENTRE OF NORTH INDIA

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Introduction: Leprosy is an ancient disease which cause significant morbidity in the affected individuals. Despite introduction of Multi drug regimens and active leprosy programme, the incidence of leprosy cases is on the rise. There is migration of people to Punjab from endemic states like Bihar and Uttar Pradesh.

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Objective:

1. To evaluate the incidence of leprosy in Punjab natives and Migrants.

2. To evaluate the type of leprosy, reaction and grade of deformities among Punjab residents and Migrants.

Materials and methods: A retrospective study was conducted at tertiary care hospital in North India. All newly diagnosed leprosy patients attending outpatient department of hospital from January 1, 2017 to March 31, 2022 were included. The recorded data, regarding the age, sex, temporary or permanent resident, type of leprosy, type of reaction, grade of deformity was analysed.

Results: During the above-mentioned time period, 79 patients were diagnosed to have leprosy. Among these, 51.9 % of cases were from Punjab while 31.6 % of cases were migrated from Bihar, 15.2 % migrated from Uttar Pradesh and 1.2 % of cases migrated from Haryana. Among Punjab residents, 46.3 % had BL type,26.8 % had LL type,21.9 % had BT type ,2.4 % had TT type and 2.4 % had BB type of leprosy. Among migrants 52.6 % had BL,21 % had LL,15.7% had BT, 7.8 % had TT and 2.6% had BB type of leprosy. 43.9 % of cases had grade 1 deformities and 26.8 % had grade 2 deformities.

Limitations: As the study was conducted in one hospital only, the results can't be universalized.

Conclusion: Almost half of cases in Punjab are from migratory population and half of cases are of Punjab Residents out of which majority has BL or LL.

Keywords: Punjab, Incidence, Migration, Prevalence

#0081/ ILCABS937

MISSING MILLIONS AND MORE: CORRECTIONS TO THE BASELINE DATA IN LEPROSY MODELS

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Introduction: Each year India contributes at least 50% to the global number of new leprosy cases reported to the World Health Organization's (WHO). Even though this is likely to be an underestimate, models for leprosy transmission and control continue to use the WHO data as their baseline estimates.

Objective: To suggest an adjustment to the WHO data for reported cases and allow for better baseline estimates in leprosy modelling.

Methods: Pragmatic, rapid review of recent publishes papers from India that give a numerical estimate of over- or under-representation of leprosy cases from relevant sources, and a simple numerical formula to arrive at a corrective coefficient.

Results: Papers were divided into those commenting of corrections needed in the presence of active case finding (ACF) and in its absence i.e. through passive case finding (PCF).

In areas where government-led mass house-to-house searches were conducted, only one in three of the true number of symptomatic cases were identified, due to lack of quality in implementation and coverage of hard-to-reach groups. In areas relying on PCF, targeted ACF found that about 50% of new cases detected were from areas thought to be largely leprosy-free. DermLep Study 2 suggested that even identified cases were under-reported: 71.4% of dermatologists in private practice and 16.5% in government institutions do

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not regularly report new cases in their care, with implications on total number reported through PCF. Our preliminary estimates show that the WHO's baseline data overall misses about a half of the new cases in India, which translates to a quarter of the global leprosy cases.

Limitations: Corrective coefficients are needed from other countries.

Conclusion Existing WHO leprosy data is unreliable for interpretation of the progress towards the 2030 global leprosy targets. Systematic, quality and targeted ACF are needed, particularly in hard-to-reach populations, and improved reporting systems.

Keywords: Leprosy models, Active case finding, WHO leprosy data, Health systems strengthening, WHO leprosy targeta

#0082/ ILCABS943

IDENTIFICATION OF GENOMIC MARKERS BY GENOME-WIDE ANALYSIS OF LEPROSY BACILLI FOR DEVELOPING SIMPLER MOLECULAR EPIDEMIOLOGICAL ASSAYS

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Introduction: Leprosy is caused by Mycobacterium leprae and M. lepromatosis, both of which remain uncultivated. Genomic insights obtained from genome-wide analysis have contributed significantly in advancing our understanding of the disease biology and pathogen transmission. In recent times, there has been impressive developments in sequencing technologies which have allowed improved representation of *M. leprae* strains from around the world.

Objectives: In this study, we aimed to investigate *M. leprae* genomes from different parts of the world to identify candidate genomic markers based on which simple tools such as PCR-RFLP for rapid identification of genotypes can be developed.

Material and Methods: Upon performing the whole genome sequences of over 300 strains of *M. leprae*, we identified candidate SNPs which are uniquely present to a few defined genotypes prevalent in a geographic region (e.g. SNP genotype 1D is predominant in India, in >75% of the strains). We have investigated over 200 strains by targeted sequencing approach representing different parts of India

Results: Using this knowledge, we have designed PCR-RFLP and real-time qPCR assay using high resolution melt curve analysis that targets SNPs present in the genotype 1D. This assay has been able to simultaneously detect and identify the genotype of the most predominant strains present in India. It is important to note that such PCR-RFLP assays can be performed in peripheral labs without needing any sequencing approach.

Limitations: Only very few genomes from India are known.

Keywords: Leprosy, Transmission, Single nucleotide polymorphisms, Genotyping, Phylogeographically informative SNPs, Drug resistance.

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#0083/ ILCABS948

INTELLIGENT MOBILE DIGITAL PLATFORM TO ASSIST EARLY FINDING OF LEPROSY CASES: A MULTICENTRE STUDY

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Background: Strategies for early finding of leprosy cases require new method. We developed an intelligent mobile digital platform of the symptom-driven case-detection method to promote early detection.

Methods: The platform was developed based on traditional leprosy prevention and control network. The platform was then used by clinic doctors and various levels of CDC leprosy staffs in Zhejiang and Guizhou provinces. The numbers of new detected leprosy cases by this method were assessed.

Findings: More than 400 doctors were trained and used the platform. Since Apr 1, 2021, more than 1000 suspected leprosy cases were enrolled, transferred, and made the final diagnosis through this platform. Among these cases, 12 leprosy cases were diagnosed leprosy.

Interpretation: The new intelligent mobile digital platform can significantly improve the early finding performance of leprosy cases and help eradication of leprosy.

Keywords: Leprosy, Early finding, Mobile, Digital platform

#0084/ ILCABS949

LEPROSY IN CHINA: A RETROSPECTIVE SURVEILLANCE STUDY, 2010-2020

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Background: Leprosy continues to be a public health concern, particularly in developing countries. China published a national leprosy-control plan (2011–2020) in 2011, and the government increased the leprosy control strategy implementation. Incidence of leprosy has decreased gradually over the past decade. This study aims to characterize the epidemiology of leprosy infection in China between 2010 and 2020.

Methods: Data was collected prospectively by the Chinese Leprosy Management Information System (LEPMIS) between Jan 1, 2010, and Dec 31, 2020, including age, date at diagnosis, sex, ethnic groups, residence, grade2 disabilities (G2D) among new cases, treatment, clinical types and bacilli index, leprosy reaction, nerve involvement and models of disease surveillance for all confirmed cases.

Findings: 9,372 patients with confirmed leprosy were reported in China during the study period. Male to female ratio was 2.18:1. Children accounted for 2.42%. The case detection rates (CDRs) decreased over time, from 9.56 infections per 10,000,000 residents in 2010 to 3.03 infections per 10,000,000 residents in 2020. The G2D rate varied from 19.45% to 31.83%, with an average of 24.03%. Southwestern China was the leading region suffering from leprosy, accounting for 60.3% of all the detected leprosy patients.

Interpretation: Our results encourage consideration of a policy to eliminate leprosy as a long-lasting target to achieve elimination of leprosy at global and country levels.

Keywords: Leprosy, Epidemiology, Leprosy Control

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#0085/ ILCABS953

RIFAMPICIN AND DAPSONE RESISTANCE IN THE TREATMENT OF LEPROSY: A META-ANALYSIS

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Objective: As the main drugs in multidrug therapy, rifampicin and dapsone resistance is important in the monitoring of antimicrobial resistance in leprosy patients.

Methods: Systematic literature searches were conducted in PubMed, Embase, Medline and Web of Science. Two independent reviewers selected the literature according to PRISMA guidelines, extracted data, and evaluated the risk of bias. Drug resistance data was pooled using the random effect model. Quality evaluation was carried out using the standards of The Agency for Healthcare Research and Quality.

Results: We included35 and 30 articles on rifampicin and dapsone resistance, respectively. The results of meta-analysis showed that the rifampicin resistance rate of leprosy patients was 8% [95% CI, 6% to 9%]. A total of 67 of 1924 new cases (pooled incidence, 7% [95% CI, 3% to 10%]) and 149 of 2055 relapsed cases (pooled incidence, 13% [95% CI, 9% to 18%]) had rifampicin resistance. The rifampicin resistance was highest in Europe (pooled incidence, 20% [95% CI, 6% to 34%]) and lowest in Africa (pooled incidence, 1% [95% CI, 0% to 2%]). The results of meta-analysis showed that the dapsone resistance rate of leprosy patients after treatment was 8% [95% CI, 6% to 10%]. Compared to the rates of primary resistance of new cases without treatment therapy (pooled incidence, 4% [95% CI, 2% to 5%]), treatment cases (13% [95% CI 9% to 16%]) had secondary resistance, and relapse cases (26% [95% CI, 18% to 33%]) had drug resistance.

Conclusion: To achieve the goal of eliminating leprosy, the identification of rifampicin and dapsone resistance of *M. leprae* is key to the diagnosis and treatment of leprosy. Robust and rigorous surveillance systems need to be established to detect antimicrobial resistance to *M. leprae* strains.

Keywords: Mycobacterium leprae, Rifampicin, Dapsone, Antimicrobial resistance, RpoB, FolP1

#0086/ ILCABS954

PREDICTIVE NOMOGRAM FOR LEPROSY USING GENETIC AND EPIDEMIOLOGICAL RISK FACTORS IN SOUTHWESTERN CHINA: CASE-CONTROL AND PROSPECTIVE ANALYSES

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There is a high incidence of leprosy among house-contacts compared with the general population. We aimed to establish a predictive model using these genetic factors along with epidemiological factors to predict leprosy risk of leprosy household contacts (HHCs). Weighted genetic risk score (wGRS) encompassing genome wide association studies (GWAS) variants and five non-genetic factors were examined in a case-control design associated with leprosy risk including 589 cases and 647 controls from leprosy HHCs. We constructed a risk prediction nomogram and evaluated its performance by concordance index (C-index)

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and calibration curve. The results were validated using bootstrap resampling with 1000 resamples and a prospective design including 1100 HHCs of leprosy patients. The C-index for the risk model was 0.792 (95% confidence interval [CI] 0.768-0.817), and was confirmed to be 0.780 through bootstrapping validation. The calibration curve for the probability of leprosy showed good agreement between the prediction of the nomogram and actual observation. HHCs were then divided into the low-risk group (nomogram score ≤81) and the high-risk group (nomogram score > 81). In prospective analysis, 12 of 1100 participants had leprosy during 63 months' follow-up. We generated the nomogram for leprosy in the validation cohort (C-index 0.773 [95%CI 0.658-0.888], sensitivity75.0%, specificity 66.8%). The nomogram achieved an effective prediction of leprosy in HHCs. Using the model, the risk of an individual contact developing leprosy can be determined, which can lead to a rational preventive choice for tracing higher-risk leprosy contacts.

Keywords: Leprosy, Genetic and epidemiological risk factors, Southwestern China

#0087/ ILCABS957

EPIDEMIOLOGICAL FEATURES OF CHILDREN CASES WITH LEPROSY IN CHINA, 2011-2020

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Background: Leprosy, caused by Mycobacterium leprae infection, mainly affects skin and peripheral nerves and may further lead to disability and deformity if not treated timely. The detection rate of new leprosy cases in children under 15 years old reflects active transmission of leprosy infection. This study aims to present epidemiology and clinical characteristics of new leprosy cases in children under 15 years old from 2011 to 2020 in China.

Method: All data of leprosy patients were extracted from Leprosy Management Information System in China (LEPMIS).

Result: A total number of 152 paediatric new cases of leprosy were found over the last decade. The incidence rate of paediatric leprosy new cases decreased from 1.31 to 0.20 per 1,000,000 population over the last ten years. Paediatric new cases had a higher incidence rate in Guizhou, Sichuan and Yunnan Provinces. Male to female ratio was 1.71:1. Among new cases, 74.3% were 10 to 14 years old and 80.9% were household contacts (HHCs). Patients were common in MB. The proportions of patients with leprosy reaction and grade 2 disability was low.

Conclusion: The incidence rate of paediatric leprosy new cases presents downward tendency over the past ten years in China. This indicates that we achieve a remarkable result in leprosy prevention and control. However, the continuous existence of paediatric new cases in recent years, which indicates ongoing transmission, should still be emphasized. The majority of patients were HHCs. Hence the new plan for leprosy prevention and control should focus on strengthening active surveillance especially contact tracing, improving awareness of leprosy knowledge to HHCs and their family members to achieve World Health Organization zero transmission.

Keywords: Leprosy, Children, China, Household contacts

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#0088/ ILCABS964

EFFICIENCY ASSESSMENT OF MEASURES FOR REGISTERED ACTIVE LEPROSY CASES IN SHANDONG PROVINCE DURING 2011-2020

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Background: How to improve management of registered active cases in post-elimination era has become an urgent challenge facing provincial leprosy control managers. Methods: case management measures including personnel training, follow-up at provincial level, provincial confirmation and management of leprosy reaction (LR), Leprosy neuritis (LN) and adverse drug reactions (ADR), precise prophylaxis of dapsone hypersensitivity syndrome (DHS), drug resistance monitoring, supervision and technical guidance were adopted during 2011-2020.. The effectiveness was evaluated by treatment rate of LR, LN and ADR and occurrence of new grade 2 disability (G2D) during multi-drug therapy (MDT).

Results: durin 2011-2020, there were 328 registered active cases in Shandong province, including 20 cases who were lost, 26 deaths, 2 emigrations, and 224 recoveries. By the end of 2020, there were still 56 active cases. All of the 312 episodes of LR, 106 episodes of LN and 8 ADR were diagnosed and treate, with the diagnosis and treatment rate reaching 100%. 41 cases were admitted, including 34 LN and 41 LR. The incidence of new G2D during MDT was 1.3%, much lower than the criterion in national plan. Zhang Furen from Shandong Provincial Institute of Dermatology and Venerology identified HLA B*13:01 as the risk site for DHS. All of those with HLA B*13:01succeeded in escaping DHS by avoiding taking DDS.

Discussion: In terms of early detection and treatment of LR, LN and ADR, it is necessary to follow up the ases regularly. Although DHS had been precisely prevented, the prophylaxis of other ADR remains to be further studied. Shandong province succeeded in maintaining high quality of managing active cases by conducting multiple measures including provincial management of active cases and hospitalization of critically sicked patients, the occurrence of disability and death of active patients has been reduced as much as possible..

Keywords: Leprosy, Leprosy registered active cases, DDS hypersensitivity syndrome

#0089/ ILCABS969

INTERNAL MIGRATION AND LEPROSY IN SHANGHAI FROM 2000 TO 2019: AN EPIDEMIOLOGICAL STUDY OF NEW CASES

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. Massive internal migration from rural to urban areas poses new challenges for leprosy control in Shanghai, China.

Objective: To analyze the epidemiological characteristics of new cases of leprosy in Shanghai from 2000 to 2019, and to provide a basis for the formulation of prevention and treatment strategies.

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Material and methods: We reviewed the demographics and clinical information of new leprosy patients reported in Shanghai from 2000 to 2019, and performed a retrospective epidemiological study, with emphasis on internal migrant leprosy patients.

Results: 145 leprosy patients were identified, in which 16 (11.03%) patients were residents, and 129 (88.97%) patients were internal migrants. The internal migrants patients had migrated from 15 different provinces. The migrant patients were significantly younger than the resident patients (P<0.001). Migrant patients had a median of 24 months (please add the variance) lag time from symptom onset to diagnosis, which was significantly longer than that of resident patients (median: 10.5 months, P<0.001). Greater lag time from the first visit to diagnosis was observed in migrant patients (median: 22 months (variance)) compared with resident patients (median: 9.5 months (variance), P <0.001). A large majority of patients had been misdiagnosed (91.03%).

Limitations: The reasons of longer delay in diagnosis of leprosy in the migrant cases need to be further investigated.

Conclusion: Internal migrant patients were responsible for most leprosy incidences in Shanghai. They often did not receive timely diagnosis and treatment, which may have an adverse impact on the prevention of leprosy epidemic."

Keywords: Leprosy, Epidemiological, Internal migration

#0090/ ILCABS995

CASE DETECTION AND MANAGEMENT OF MOBILE LEPROSY IN BAOAN DISTRICT, SHENZHEN : A RETROSPECTIVE ANALYSIS

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The mobile leprosy control programme in Baoan district was launched in the late 1990s with the goal of elimination of leprosy in mobile population. Here, we aims to describe the characteristics of mobile people suffering from leprosy and the achievements, over the past 30 years in Baoan District, Shenzhen, China, and to identify the challenges for better mobile leprosy control. Data from the Leprosy Management Information System in China (LEPMIS) and the annual Leprosy Records were obtained, including patient's basic demographic information and clinical characteristics. A total of ninety five patients were newly detected from 1991 to 2020, with the new case detection rate per 100,000 ranging from 0.14 to 0.07, while the prevalence rate per 100,000 ranging from 0.48 to 0.37. There were no childhood cases and relapse cases. 83.2% of mobile patients coming from southwestern and mid-southern provinces were detected. The median delay in diagnosis was 31 months (3-296 months). 61.1% of patients had nerve impairment at diagnosis. Ulnar nerve was the most commonly involved nerve,with nearly 50.0% of total patients were involved. Nearly one third of patients had one or more reaction or neuritis episode at some point. 16.8% had grade 2 disability and 25.3% had Grade 1 disability. 22(23.2%)had hand disibilities,30(31.6%)had feet disabilities and 4 had eye disibilities. 76 patients have completed MDT regimen and none of them relapsed. 4 patients were loss to follow-up and 15 patients moved back to their household registered location.The challenges facing mobile leprosy elimination in the next stage are multi-sectoral coordination, participation of the whole society, sustainable support and investment form the government, stable professional workforce, regular follow-up and tracking survey, establishing an"

Keywords: Leprosy, Case detection, Disability, Mobile population, Management

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#0091/ ILCABS998

INVESTIGATION AND ANALYSIS OF 18 NEW CASES OF LEPROSY AMONG MEMBERS WITHIN THREE GRADE OF RELATIVES IN WENSHAN PREFECTURE IN 2018

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Background: To analyze the epidemiological characteristics of 18 new cases of leprosy among members of the third-generation blood family of leprosy in wenshan prefecture in 2018, and to provide basis for the prevention and treatment of leprosy.

Methodology/Principal findings: In 2018, there were 37 cases of new (former) leprosy in wenshan prefecture, among which 18 cases, accounting for 48.65%, were found among the members within three grade relatives of leprosy cases.Among the 18 cases, the ratio of male to female was 2:1, the average age was 25.11±5.22 years old, and the proportion of children was 11.11%. Early cases accounted for 94.44%, and the average delay in diagnosis was 10.6 months.There were no cases with grade 2 disability. 72.22% were multibacillary type. 15 cases (83.33%) were found in grade I relatives, 2 cases (11.11%) were found in grade II relatives, and 1 case (5.56%) was found in grade III relatives. Parents and siblings accounted for the largest proportion of infection sources. The majority of the index cases were multibacillary, accounting for 77.78%.

Conclusions/Significance: Family members within the third grade relatives,especially the grade I relatives, of leprosy are the high-risk group of leprosy, symptom monitoring, publicity and education should be strengthened, but at the same time, the relatives of grade II and III should not be ignored.

Keywords: Leprosy, Three generations of blood relatives, Epidemiology

#0092/ ILCABS1005

21-YEAR TREND OF NEW LEPROSY CASES IN GUANGDONG, CHINA: AN ANALYSIS OF SURVEILLANCE DATA FROM 2000-2020

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Background: Leprosy is an infectious disease caused by Mycobacterium leprae. Guangdong Province was once one of severe leprosy epidemics in China.Guangdong Province has the most severe leprosy endemic and also the largest floating population in China. At present, the total number of leprosy patients is more than 96,000 in Guangdong. After 70 years of hard work, the incidence of leprosy has been declining year by year in the past 21 years, but the grade 2 disability of leprosy patients is still a public health problem. We analyzed here the epidemiological trends and characteristics of new leprosy cases in Guangdong Province from 2000 to 2020. The incidence of leprosy in Guangdong Province varied greatly among prefectures. Over the 21-year period, prefectures with more than 100 new cases included Zhanjiang, Guangzhou, Shenzhen, Jieyang, Maoming, Shantou, Foshan and Dongguan, accounting for 67.89% of the total new cases. The proportion

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of new cases from floating population increases year by year. These results will help the development of strategy for the monitoring and prevention of leprosy in Guangdong.

Aims: To reveal the characteristics of newly detected leprosy cases and to provide the scientific rationales for the development of leprosy control strategy.

Methods: The epidemiological data of new leprosy cases in Guangdong Province from 2000 to 2020 were obtained from the LEPROSY MANAGEMENT INFORMATION SYSTEM IN CHINA(LEPMIS). According to Ridley-Jopling classification, patients were classified into Tuberculoid Leprosy (TT), Borderline Tuberculoid (BT), Mid-Borderline (BB), Borderline Lepromatous (BL), Lepromatous Leprosy (LL), and Indeterminate Leprosy (I). Leprosy cases were classified into multibacillary (MB) type or paucibacillary (PB) type according to two-group classification system developed by the World Health Organization. The joinpoint analysis was used to identify the best-fitting points

Keywords: Leprosy, Epidemiology, Prevention

#0093/ ILCABS1016

RESEARCH ON COMBINATION OF PRP, PRF AND ADIPOSE-DERIVED STEM CELLS FOR WOUND HEALING OF CHRONIC SKIN ULCER

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Objective: To investigate the effects of combination of PRP, PRF and (ADSC PRP, PRF, ADSC) for wound healing of chronic skin ulcer, and provide evidences for clinical application.

Methods: Twenty-four SD rats aged 6-8 weeks were used in this study. Five grams of groin adipose tissue were derived from each rat. After collagenase digestion, mesenchyma stem cells derived from adipose tissue (ADSCs) were determined by immunocytochemical method and flow cytometry. After continuous culturing, the 3th passage of ADSCs in good condition was prepared for transplantation. Ten milliliters of whole blood were extracted from one rat for making PRP and PRF backup. Full thickness skin defect model with six wounds with an area of 1.5cm*1.5cm on each side of the spine on the back was established in rats after anesthesia. Then the rats were randomly divided into six groups. Skin wounds were injected with PRF combining ADSC in group A, PRF in group B, ADSC in group C, ADSC combining PRP in group D, PRP in group E, and same amount of normal saline(NS) in group F. Histological analysis was performed to evaluate the velocity and the quality of the wound healing 7 days, 14 days, 21days and 28 days after treatment, and comparing the regeneration of epidermis, corium, fibroblast, blood vessel and skin appendages respectively.

Conclusions: After the general and pathological observation on the effects, the velocity and the quality for the skin ulcer healing of SD rats on the back were as follows: ADSC+PRP > ADSC+PRF > ADSC > PRP > PRF > NS, indicating that PRP or PRF combining ADSC can improve quality in wound healing of skin ulcer effectively.

Keywords: Platelet rich plasma, Platelet rich fibrin, Adipose-derived stem cell, Skin ulcer

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#0094/ ILCABS1023

DRUG REACTIONS IN CHINA AND APPROACH TO MANAGEMENT

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Drug reactions are an important cause of morbidity and mortality worldwide, which is also a major pubic health problem in China. To date, a growing number of studies have provided evidences that specific HLA alleles increase the risk of developing hypersensitivity drug reactions, while most of them were identified in Chinese population, such as HLA-B*13:01 and Dapsone Hypersensitivity, HLA-B*15:02 and Carbamazepine and Oxcarbazepine Hypersensitivity, HLA-B*58:01 and Allopurinol Hypersensitivity et al. Large scale pre-screen trials have conducted to validate the predict efficiency by using these markers. This study summarized the drug reactions research and management approach in China.

Keywords: DHS, Leprosy, China

#0095/ ILCABS1025

CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF ELDERLY LEPROSY PATIENTS IN LOW PREVALENCE OF LEPROSY

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Background: Leprosy is prevalent all over the world. Due to the natural aging mechanism of human body, the elderly are susceptible to this disease, but there are few studies on this kind of people.

Objective: To describe the epidemic and clinical features of leprosy cases among the elderly population reported in Shaanxi Province.

Methods: Observational, descriptive and retrospective studies were conducted on leprosy patients admitted to Shaanxi Province from January 2004 to January 2022 through LEPMIS. Results: From January 2004 to January 2022, there were 323 new cases in this area, of which 54 cases (16.7%) were elderly patients over 60 years old, with an average age of 67.0 years old. Among these elderly patients, 77.8% are male; Forty-eight patients (88.9%) are Han nationality patients, 96.3% of the elderly patients are low-income professionals, 57.4% of the patients have low education level (illiterate or semi-illiterate), 79.6% of the patients have a marriage history, and 29.6% of the patients are infected at home. Among these newly-diagnosed elderly patients, 70.4% of them were positive for bacteria, and the proportion of multi-bacteria type was as high as 83.3%. Although the proportion of serious skin lesions (skin lesions > 5) was as high as 75.9%, the proportion of serious nerve lesions (nerves ≥2 lesions) was as high as 68.5%, and the proportion of secondary deformity was as high as 53.7%, there were still 83.

Conclusion: Under the low prevalence of leprosy, the clinical and epidemiological characteristics of the elderly patients with leprosy suggest that there is a long delay in diagnosis of the disease. The infection of leprosy in the elderly population may be accompanied by more serious skin and nerve damage, and at the same time, the risk of disability increases.

Keywords: Leprosy, Aged, Epidemiology

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#0096/ ILCABS1036

SINGLE-NUCLEOTIDE POLYMORPHISMS RELATED TO LEPROSY RISK AND CLINICAL PHENOTYPES AMONG CHINESE POPULATION

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Genome-wide association studies (GWASs) have identified some immune related single-nucleotide polymorphisms (SNPs) to be associated with leprosy.This study investigated the association of 17 SNPs based on previously published GWAS studies with susceptibility to leprosy, different polar forms and immune states of leprosy in a case–control study from southwestern China, including 1344 leprosy patients and 2732 household contacts (HHCs) (1908 relatives and 824 genetically unrelated contact individuals).

The differences of allele distributions were analyzed using chi-squared analysis and logistic regression. After adjusting covariate factors, rs780668 and rs3764147 polymorphisms influenced susceptibilities to genetically related or unrelated leprosy contact individuals. rs142179458 was associated with onset early cases, rs73058713 A allele and rs3764147 A allele increased the risk of reversal reaction, while rs3764147 G allele had higher risk to present lepromatous leprosy and erythema nodosum leprosum.Our results demonstrated that genetic variants in the LACC1, HIF1A, SLC29A3 and CDH18 genes were positively correlated with the occurrence of leprosy and leprosy clinical phenotypes, providing new insights into the immunogenetics of the disease

Keywords: Leprosy, Single-Nucleotide Polymorphisms, Risk and Clinical Phenotypes, Chinese Population

#0097/ ILCABS1043

THE GLOBAL PARTNERSHIP FOR ZERO LEPROSY COUNTRY MODEL

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The Global Partnership for Zero Leprosy (GPZL) is a coalition of organizations committed to ending leprosy. GPZL's mission is to facilitate alignments of the leprosy community and accelerate effective collaborative action toward the goal of zero leprosy. We coordinate action in three areas: accelerating research on leprosy, increasing advocacy and mobilization to prioritize leprosy internationally, and partnering with national leprosy programmes to identify best practices and scale up programming.

GPZL's country partnership work brings together in-country partners and international stakeholders to work on country-led, customized strategies that address local needs and priorities to end leprosy. In order to support national programmes in reaching their zero leprosy goals, GPZL has developed a Zero Leprosy Country Model. This model was developed in collaboration with the WHO Global Leprosy Programme and with national leprosy programmes, and aligns with the current WHO Global Leprosy Strategy and the WHO NTD Framework. It is designed to reinforce and not replace current work being done in-country.

The Country Model supports leprosy endemic countries in developing roadmaps and strategic plans for zero leprosy. It consists of six modules: Bringing Stakeholders Together/Formation of a Core Group, The Country Review, Roadmap Development, Building a Logic Model, Action Plan Development, and Monitoring and Evaluation. These modules are designed to build on each other so that countries can use the momentum

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from each module to inform and energize the next. However, understanding that countries are already doing this work and might not need to utilize the entire model, the modules are also designed to standalone and be accessible by themselves.

These tools have been pilot tested with our country partners. In order to accelerate zero leprosy efforts beyond GPZL's 12 partner countries, the next step is to make these tools available to a wider audience for self-guided implementation.

Keywords: Zero leprosy, Roadmap, Collaboration, Country review, Action planning, Stakeholder alignment

#0098/ ILCABS1051/ILCABS1054

POST ELIMINATION TRENDS

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Introduction: Leprosy elimination programme in Mumbai covered majorly by 6 NGOs, 4 SULUs of Govt of Maharashtra and MCGM. Slum population is estimated to be 41.3% in Greater Mumbai, with over 9 million. Mumbai experienced rapid growth over past 20 years in slums specially Dharavi slum with estimated population of one million, spanning over 535 acres.

MCGM has network of four medical college-Hospitals, one dental college-Hospital, 16 general Hospitals, 6 specialty Hospitals, 29 maternity homes, 175 municipal dispensaries and 183 health posts. In Mumbai 70 GOVT hospitals with population density of incredible 869,565 people per square mile.

Methods: Data collected from various units for post elimination period analysed to study trends of various epidemiological indicators.

Results: Analysis of trends over last 15 years (2007 -08 to 2021-22) shows decline in active cases from 860 to 298, PR from 0.63 to 0.23, New case detection from 1070 to 335, NCDR from 7.8 to 2.32, increase in MB% from 49.3% to 75.82%, decline in child cases from 155 to 22, child % from 14.49% to 6.5%, female cases from 377 to 100, female % from 35.23% to 29.85%, Grade 2 deformity cases from 65 to 42, increase in Grade 2 % from 6.07% to 12.54% respectively.

Conclusion: Trends show decline in all indicators except increase in MB % and G2D due to migrant population non mutable factor in NLEP. Integration of NLEP with general health care without institutionalised supervision and omission of smear appears counterproductive, particularly in urban areas. Excessive reliance on passive case detection of largely voluntary reporting resulting in delayed detection (NCD with deformity) attributable to neglect / fear, stigma / declining skilled personnel.

Keywords: Leprosy Scenario Mumbai, Post Elimination Trends

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#0099/ ILCABS1066

THE FINAL EVALUATION ON THE IMPLEMENTATION OF "NATIONAL LEPROSY-CONTROL PLAN (2011-2020)" IN ZHEJIANG PROVINCE

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Objective: To assess the implementation effects of "national leprosy-control plan (2011-2020)" in Zhejiang Province from 2011 to 2020 and to provide the scientific rationales for the government to develop control strategies.

Methods: Data was collected from National Leprosy Prevention Management Information System, the China Information System for Disease Control and Prevention, and field- special investigation. Based on the final evaluation targets of "National leprosy-control plan (2011-2020) ", 12 indicators of the plan including overall objectives, work indicators and effect indicators namely, the number of registered cases, prevalence rate of all the 93 counties, the training rate of leprosy prevention and control skills, the rate of regular treatment, the rate of treatment for adverse reactions, the rate of annual examination of close contacts, the rate of early detection of leprosy cases and the rates of leprosy knowledge were evaluated. The assessment results were compared with the final evaluation targets of the nation.

Results: By the end of 2020, there were 50 registered cases with a decrease of 50.98% compared to the cases in 2010. The prevalence rate of leprosy in all counties was less than 1/100,000. Training rate of leprosy prevention and control skills was 100% in Zhejiang Province. In 2020, the rate of regular treatment for leprosy cases, the rate of treatment for adverse reactions, the rate of annual examination of close contacts, and the rate of early detection of leprosy cases were all 100 percent. The proportion of newly detected cases with grade 2 disability, the number of cases of new disabilities occurring within 2 years of initiation of anti-leprosy treatment were both 0. The leprosy knowledge of the public and close contacts were 91.67% and 98.12%.

Conclusion: All the 12 indicators had reached the national final evaluation targets in Zhejiang Province.

Keywords: Leprosy, Final evaluation

#0100/ ILCABS1071

ROADMAP TO ACHIEVE ZERO TRANSMISSION OF LEPROSY IN INDIA

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Introduction: The National Leprosy Eradication Programme, India went through various stages of planning and implementation of different strategies. Decreasing prevalence and incidence in India achieving towards the status of leprosy-free India. With a view to accelerate the progress under NLEP, there is need to develop

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the roadmap to further strengthen active case detection, treatment compliance, quality surveillance, routine monitoring, and supervision in order to ensure 100% reporting and management of leprosy-affected persons in the country. Now, in the current scenario, the objective of NLEP has now shifted from reducing the prevalence of registered cases to reduction in the absolute number of new cases detected and to reduce the G2D among them. Certainly, Roadmap for Leprosy free India. will help in strengthen the programme towards achieving the ultimate goal of leprosy free India. Roadmap is a guiding document to achieve the goal.

Goal: Leprosy Free India in 10 years

Objectives: 1) Detecting Hidden Cases and interrupting transmission

2) Grade 2 Disability percentage should be reduced to 1.5 % and sustaining the same at district level

3) Zero transmission of cases in next 10 years

Methodology for Development of Road map: Central Leprosy Division has identified 15 thematic areas under NLEP. A committee of 82 leprosy resource persons including 15 group coordinators assigned for 15 groups coinciding with each thematic area under NLEP, each team work on their concerned thematic area under the leadership of the group coordinator who will present the final draft in front of the entire committee. TOR for the coordinators and the group members are set

Expected Key Outcome plan from thematic groups to achieve the gaol are as follows: Molecular Epidemiology, GIS tagging of cases mechanism, Monitoring Framework, Monitoring and Evaluation plan of Road map implementation (Interim Evaluation),

Keywords: Roadmap, NLEP, Leprosy free

#0101/ ILCABS1072

EFFECTIVENESS OF DIGITAL DISABILITY REGISTER (DDR) UNDER NATIONAL LEPROSY ERADICATION PROGRAMME IN PROVIDING DISABILITY PREVENTION AND MEDICAL REHABILITATION SERVICES

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Introduction: Leprosy is feared because of the occurrence of disabilities it causes. The problem in social, economic, and human terms is enormous. A comprehensive approach for rehabilitation is needed to maximize the benefits for the individual, family, and society at large.

Medical Rehabilitation like DPMR services (Physiotherapy, soaking, scrapping, oil massage of affected limb (self-care counselling), lepra reaction management, MCR foot-ware & RCS surgery for deformed limb etc.) are being provided by the Health Dept. of States/UTs under NLEP. Number of persons living with leprosy-related disabilities and impairments and services provided by the health dept. are in physical registers (Disability registers) at block CHC/District level & there were no state/national compilation. Central leprosy division has taken an initiative to compile same & develop a Digital Disability Register (DDR) in 2022.

Objectives: To know the effectiveness of Digital Disability Register (DDR) in providing DPMR services

Methodology: A google form is developed to capture the data from States/UTs about all disable persons affected by leprosy (both new, old, G1 & GII) and services provided to them by health dept. As on 1st June

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2022 more than 16,000 disability person details are captured in the DDR and descriptive analysis with the help of excel was done.

Results: Out of 26,173 disability Persons entered in the DDR, 67% are male and 32.3% are Female. 79.6% are old disable cases, 17.4% are New disable cases and 3% are under treatment disable cases. 96.1% of Disability persons were MB category and 3.9% are PB. 66.5% are with Grade II Disability and 33.5% are Grade I Disability. Site of Disability was in Hand 69%, Foot 67.5% and eye 3.3% is observed.

Different DPMR Services provided to disabled persons are Self Care counselling (72.9%), MCR Foot wear 65.5%, Ulcer treatment 24.8%, Steroid 12.6 % and Other<br

Keywords: Key Words: Disability, Register, DPMR Services

#0102/ ILCABS1073

STRENGTHENING THE NATIONAL LEPROSY ERADICATION PROGRAMME (NLEP) ACTIVITIES UNDER NATIONAL URBAN HEALTH MISSION (NUHM) TO ADDRESS THE CHALLENGES FACED IN URBAN AREAS- A CONCEPT PAPER

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Introduction: NLEP aims to achieve the 'Leprosy Free' status by 2030 in India with zero transmission and zero new cases for leprosy.The implementation of NLEP activities in urban area is challenging due to growing urbanization and slum population, cultural and social diversities, migration and floating population. Grade 2 disability % among new cases was reported higher in urban areas (3.07%, 3.27%) as compared to rural areas (2.39%, 2.37%) in the year 2020-21 & 2019-20 respectively. Further, poor treatment compliance among urban poor and vulnerable section led to the lower treatment completion rate in urban areas (91.6%, in 2020-21 and 92.6% in 2019-20) as compared to rural (96.5% in 2020-21 and 95.6% in 2019-20). National Urban Health Mission (NUHM) focuses on providing equitable and quality primary health care through HWCs, UPHCs, UCHCs and outreach services to the urban population with a focus on poor and vulnerable sections of community. For improving NLEP services in urban areas, there is a need to adopt multi pronged strategies.

Objective: To strengthen the interventions under NLEP through NUHM to improve leprosy services in urban areas.

Key Interventions: NLEP service provisions in rural areas should be rendered in urban through the health facilities existing under NUHM. Evidence based strategies like improving coordination of NLEP and NUHM at state & district level, capacity building among urban HR, optimum utilization of ASHA and MAS for community awareness and mobilization is of prime importance. Strengthening of joint monitoring and supervision of NLEP activities under NUHM and convergence with urban local bodies should be implemented.

Conclusion: Urban figures contribute significantly to the national data for leprosy. A clear, problem-specific action plan and compliance will strengthen the leprosy deliverable through urban health services.

Keywords: Leprosy, NLEP, Urban health, NUHM, UPHC, UCHC

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#0103/ ILCABS1076

NATIONAL IMPLEMENTATION OF ANTI-MICROBIAL RESISTANCE SURVEILLANCE UNDER NATIONAL LEPROSY ERADICATION PROGRAMME IN INDIA- A CONCEPT PAPER

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Background: Antimicrobial resistance is one of the major public health problem in India. As per the World Health Organization report data on AMR surveillance for leprosy from countries between 2009 and 2015, 19 countries indicated that 5.1% of the tests on relapse patients tested were positive for rifampicin. Brazil and India reported more than 10 Leprosy cases with rifampicin resistance between 2009 and 2015.As per the World Health Assembly resolution on Anti-Microbial Resistance (AMR) in 2015 together with a global action plan, according to which the Global Leprosy Strategy and the National strategic plan of India, advised the monitoring of drug resistance in leprosy as a key component also, they highlighted the importance to have a mechanism for AMR surveillance in leprosy after four decades of use of MDT in the treatment of leprosy

Status in India: In the current scenario out of 5.2% of relapse cases in India 2.1% are Resistant towards the MDT. The Rifampicin resistance is marked higher among all MDT with 4% resistance followed by Dapsone with 3.1% resistance. Historically, before 2005 there were few Anti-Microbial resistance cases due to effective implementation of the program activities and adoption of newer strategies in terms of early case detection, prompt treatment/ treatment completion and providing the other program services thus result in achieving the leprosy elimination at National level (in 2005). But, at the sub national level elimination is yet to be achieved. AMR surveillance system is one of the key strategy in identifying resistant leprosy cases, hotspot areas and prompt intervention.

Concept: This concept note gives a brief about establishment of AMR surveillance system in India. The presentation is to share the concept and collect feedback from all the leprosy experts to make this surveillance system more appropriate in Indian context.

Keywords: AMR, MDT, Leprosy

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CLINICAL ASPECTS

#0104/ ILCABS9

ASSESSMENT OF THE SAFETY OF COVID-19 VACCINE AMONG LEPROSY PATIENTS RELEASED FROM TREATMENT- A CASE SERIES

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Introduction: Leprosy, a chronic infectious disease, is caused by Mycobacterium leprae. COVID-19 vaccine is one of the most important strategies for the prevention of COVID-19 and the reduction of disease severity. The vaccine has displayed a good clinical safety profile and tolerability. However, its safety profile in clinically cured cases of leprosy is still lacking.

Objectives: In this series, the medical status of leprosy patients released from treatment (RFT) following COVID-19 vaccination was observed.

Methods: RFT patients presenting to our leprosy clinic for regular follow-up were identified. Only clinically cured patients who had received the COVID-19 vaccine (of their own volition) after RFT were included. Development of any kind of solicited or unsolicited adverse reactions was noted.

Results: A total of 26 patients were identified by us. The rate of reactogenicity in our study was 26.9% (7 out of 26). While 5 (19.2%) patients had solicited injection-site reactions (pruritus, erythema, edema, pain, and induration), 4 patients out of these 5 also had solicited systemic adverse events, namely, fever and myalgia. The remaining 2 cases had an unsolicited reaction in the form of mild erythema nodosum leprosum (ENL) which resolved with short course of NSAIDs and low dose steroids. Both cases were male patients over the age of 60 (62 and 65) years. None of the patients developed any other lepra reactions during the ensuing follow-up period.

Limitations: Absence of a controlled study, histopathological and immunological analysis.

Conclusions: The present series is the first of its kind to explore the safety profile of the COVID-19 vaccine in leprosy RFT cases. Our series concluded that clinically cured cases of leprosy are not at increased risk following immunization. However, patients with lepromatous leprosy require intensive attention following vaccination due to the risk of ENL.

Keywords: COVID-19 Vaccine, Reactogenicity, Leprosy, Vaccine Safety, ENL

#0105/ ILCABS50

PEDIATRIC LEPROSY - A TIP OF AN ICEBERG!

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Introduction: Leprosy is the oldest disease known to mankind but Still prevelant in certain endemic areas in India.Pediatric leprosy is an important epidemiological index for determining the level of transmission of the disease in the community.Leprosy in children is more important because of its potential to cause deformities,

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which if not detected early can lead to serious psychosocial impact on child and family.This study aimed to analyse prevalance and clinical spectrum of childhood leprosy and highlight the importance of examining close contacts and impact of detection and treatment of leprosy in the country.

Material and methods: This Retrospective study included patients presenting to the dermatology department of a tertiary care hospital attached to a medical college during the years 2005-2021

Results: 1390 patients with leprosy were analyzed of which 1188 were adults and 202 were chidren. Children constituted 14.5% of the patients.Of 202 children with leprosy 114 were boys(56%)and 88(44%) were girls with male to female ratio of 1.29:1.Moat common age group involved was 12-18 years.most common presenting feature was hypopigmented skin lesion(97.5%).77(38.1%) patients had a single patch.146 (72.2%)patients were diagnosed clinically with borderline tuberculoid leprosy,10(4.6%) patients were borderline lepromatous leprosy,5(2.47%) patients were diagnosed as pure neuritic leprosy.126 (62%) patients were diagnosed with multibacillary leprosy, 76(38%) patients were diagnosed with paucibacillary leprosy.positive family history was observed in 26 (12.8%)patients.Most common nereve involved was ulnar nerve.15(7.4%) children had lepra reaction of which 13 had type 1 reaction.

Limitations: It's a retrospective hospital data based study

Conclusion: A high proportion of childhood leprosy cases indicate active transmission and warrants awareness among the community members and healhcare workers in terms of early detection and treatment of childhood and aduly leprosy.This helps in preventing transmission, development of grave deformities and associated social stigma among the community members.

Keywords: Pediatric leprosy, Childhood leprosy

#0106/ ILCABS59

SKIN LESIONS ON REACTION AS PATIENT SELF-HELP PROXY INDICATOR OF NERVE ABNORMALITIES IN LEPROSY

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Introduction: Lepra reaction puts patients at risk of nerve damage and deformities. A patient self-help monitoring tool which allows prompt referral and intervention during reaction is important.

Objectives: This study aimed to determine the utility and acceptability of a self-assessment tool using inflamed skin lesions as proxy indicator of nerve abnormalities; and determine if nerve proximity to inflamed lesions increases the risk of these complications.

Methodology: A cohort of Filipino patients were monitored before and during reaction, with both reaction types included. Using a self- assessment tool, skin lesions were independently evaluated by the patient and the clinician; while nerves were assessed by anotherr staff. Skin lesions and nerves were scored and correlated based on a 0-15 severity scale. Nerves were noted as near or distant from an inflamed lesion. Monitoring was conducted until a year after MDT completion.

Results: A total of 314 inflamed skin lesions matched with same number of nerves near and distant from the lesions were monitored. Mean lesion score was 2 without reaction; 5 at peak of reaction. Lesion scores by the patient and the clinician were comparable (P=0.1771). Nerve scores remained low in the absence

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of a reaction, and when reaction occurred in the skin lesion distant from the nerve. However, nerve scores were significantly higher when the skin lesions near the nerve became inflamed (0.24 vs 1.03; P<0.0001). There were seven cases of visible disabilities and nerves involved were located near inflamed skin lesions. No deformity was associated with nerves distant from inflamed lesions.

Most patients considered the tool highly acceptable and important.

Limitations: Short surveillance period

Conclusion: This study demonstrates the acceptability and utility of a self-assessment tool using inflamed skin lesions as proxy indicator of nerve abnormality; likewise, the higher risk of deformity and abnormality among nerves near inflamed skin lesions.

Keywords: Self-assessment tool, Inflamed skin lesions, Nerve abnormalities

#0107/ ILCABS72

CHILDHOOD LEPROSY IN THE LAST DECADE: A LIGHT AT THE END OF THE TUNNEL

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Introduction: Childhood leprosy is one of the key indicators that can be used to determine the case's active transmission in society. Because children have nascent/impaired immunity, they are more vulnerable to the effects of the disease, therefore analyzing the prevalence of childhood leprosy helps measure the success of the area's leprosy control programs.

Objectives: To determine the incidence and clinical-epidemiological pattern of childhood leprosy in a South Indian tertiary care center in the last decade.

Methods: A retrospective analysis of Hansen's disease aged less than 15 years of age was carried out from April 2010 to April 2022. The Clinico-epidemiological pattern is analyzed and recorded.

Results: There is a decreasing trend in the incidence of childhood leprosy (7.9 percent). Males were the most commonly affected gender (54%), while the most commonly impacted age group was 11 to 14 years. Paucibacillary cases accounted for almost 73% of all cases. The most common type of presentation was a single solitary lesion. The most prevalent subtype of leprosy is borderline tuberculoid (46%), accompanied by tuberculoid (46%).

Limitations: Limited data of 12 years from a tertiary care center were analyzed.

Conclusion: The prevalence of childhood leprosy has decreased significantly during the last decade. This decrease can be ascribed to two sources. It could be attributable to the success of the leprosy control program or to underreporting of cases in the area.

It is also critical to maintaining efforts for leprosy awareness and control, as well as more participation in the active detection of prevalent cases.

Keywords: Childhood leprosy, Postelimination era, Clinico-epidemiology, Leprosy control

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#0108/ ILCABS73

ATYPICAL PRESENTATIONS OF LEPROSY : MORE TO EXPLORE

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Introduction: Atypical presentations of Leprosy continues to bewilder clinicians.

Objectives: To describe atypical clinical presentations of leprosy in 4 cases involving brachial plexus, cervical cord, genitalia and muscle tendons.

Materials and methods: Clinical examination, nerve conduction velocity (NCV), histopathology and Polymerase chain reaction(PCR) testing for Mycobacterium. *M. leprae* was performed in all cases. In three cases, magnetic resonance imaging(MRI) and Ultrasonography(USG) was additionally done. All cases were managed with multidrug therapy (MDT) and oral steroids.

Results: Case1-12-years-old male presented with hypoaesthestic patches and clawing of left hand. NCV showed non-recordable left ulnar SNAPS, left sided arm compound muscle action potential (CMAPs) showed reduced amplitude and conduction velocity. It was diagnosed as a case of borderline tuberculoid Hansens disease (BTHD) with left medial cord brachial plexopathy. Motor weakness resolved after nine months of treatment.

Case 2-24-years-old male with hypoaesthetic patches, left ulnar clawing and hypereflexia showed focal cord oedema at C5/6 level on MRI. The final diagnosis was BTHD with ulnar nerve abscess and cervical cord involvement. The cord edema disappeared after nine months of treatment.

Case 3- 41-years-old male presented with edematous plaque on preputial skin, causing phimosis a month after the start of MDT. It was labelled as a case of mid borderline downgrading to borderline lepromatous Hansens disease with type 1 reaction causing phimosis which resolved after two months of treatment.

Case 4-59-years-old female presented with hypoaesthestic plaque and a cystic swelling on right wrist. It was diagnosed as BTHD with tenosynovitis, PCR from swelling was positive for *M. leprae*. The swelling resolved after four months of treatment.

Limitations: Pathological confirmation of the CNS or proximal nerve lesions is lacking.

Conclusion: Neurological examination and radiological investigations like USG and MRI should be included in workup of leprosy patients. Neurophysiological tests may detect involvement of plexus/nerves earlier than radiological.

Keywords: Spinal cord involvement, Brachial plexopathy, Phimosis, Tenosynovitis, Leprosy, Polymerase chain reaction.

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#0109/ ILCABS95

ERYTHEMA NECROTICANS IN THE SETTING OF HUMAN IMMUNO DEFICIENCY VIRUS (HIV) INFECTION.

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Introduction: Leprosy reactions are rare expression of immunological perturbations that interrupt the usual chronic course and clinical stability of patients with leprosy. Erythema necroticans (ENe) is an uncommon manifestation of type II erythema nodosum leprosum (ENL) reaction encountered in lepromatous leprosy (LL). Severe ENL can become vesicular or bullous and break-down to form ulcers and is termed erythema necroticans.

Description: A 45- year-old retroviral disease (RVD) positive man who is on highly active anti- retroviral therapy (HAART) for 4 years on TLD (tenofovir, lamivudine, dolutegravir) complained of painful solid elevated lesions all over body along with fever for 40 days. On examination multiple discrete tender erythematous papules, nodules, of sizes 0.3- 2cm present over face and ears. Plaques studded with nodules of sizes 0.3- 15cm present over extremities, trunk and back. Necrotic crusted ulcers seen over chest. Bilateral ulnar claw hand with guttering over dorsa of both hands seen. Glove and stocking hypoesthesia was present. Motor examination revealed enlarged and tender ulnar nerve and common peroneal nerve. Slit skin smear showed bacteriological index - 6+, morphological Index - 20%, solid fragmented granular index - S0F1G2. Biopsy was suggestive of LL and ENL and was hence diagnosed as LL hansen's with ENe. He was managed on oral steroids, apremilast and antileprosy medications. As rifampicin is cytochromeP450 inducer, dolutegravir dose was doubled.

Conclusion: This case of leprosy reminds clinicians of this era that leprosy is not a disease of the past and thus systemic and multidisciplinary approach should be considered.

Coexistence of MB leprosy and HIV should prompt the clinician to look for drug interactions between leprosy therapy and HAART. HIV can increase the chances of type II lepra reaction though not hansen's disease proper. Hence vigilant care is necessary to look for and treat impending lepra reactions.

Keywords: Lepromatous leprosy, Erythema nodosum leprosum, Erythema necroticans, HIV.

#0110/ ILCABS100

ERYTHEMA NODOSUM LEPROSUM-AS THE PRESENTING MANIFESTATION IN MULTIBACILLARY LEPROSY

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Introduction: Leprosy is an ancient disease that is still with us,despite the WHO's drive to eliminate it worldwide.Leprosy is a chronic disease with,in general, long incubation period.It has a wide clinical spectrum

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determined by the host immune system. It may lead to diasability, particularly during acute exacerbations called reactions.We will present 3 patients with tender erythematous skin lesions who were originally diagnosed with a febrile illness and treated.subsequently,they were diagnosed to suffer from leprosy.

Objective: To make physicians aware that ENL(Erythema Nodosum Leprosum)should be in differential diagnosis in any patient with tender and painful erythematous lesions of the skin. This ENL could be the presenting manifestation of Borderline Lepromatous or Lepromatous leprosy

Patients/Material and Methods: Three Patients presented with tender and painful erythematous lesions of the skin with no proper diagnosis.Their history revealed acute and chronic episodes.A careful clinical examination was done,and biopsy taken.

Results: The Clinical examination and the history taking lead to a differential diagnosis of leprosy,sweet syndome and panniculitis.Histopathology suggested ENL.Fite faraco stained acid fast bacilli and slit skin smears were positive.A diagnosis of leprosy with ENL was made.

Limitations: Since it is a case study nothing can be said about the prevalence of ENL as the first manifestation of leprosy.We were unable to classify the spectrum.

Conclusion: ENL as a symptom of leprosy can be missed by unsuspecting physicians.Tender skin lesions with fever should ring a bell.Early diagnosis and timely treatment may prevent disabilities and increase the quality of life.

Keywords: Erythematous skin lesions, ENL, Early diagnosis, Diabilities

#0111/ ILCABS104

MISDIAGNOSED CASES IN LEPROSY: A RETROSPECTIVE ANALYTICAL STUDY

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Introduction: Leprosy is a great mimicker and delay in diagnosis is often attributed to mis- or missed-diagnoses, which have tangible implications on clinical and social aspects of disease.

Objectives: Aim was to estimate prevalence of misdiagnosed cases of leprosy and determine duration of delay in diagnosis.

Material and methods: Retrospective study was carried out in tertiary centre after ethics approval and informed patient consent over one year. Previous treatment records of all leprosy patients were accessed. Duration of disease before making diagnosis of leprosy and previous diagnoses and treatment/s with their source/s were noted.

Results: Records of 78 patients were accessed, from which 19.23% (n=15) patients were treatment naïve, 34.61% (n=27) were referred with suspicion of leprosy while 46.15% (n=36) were initially misdiagnosed. Mean delay from onset of symptoms to diagnosis was 17.2±10.5 weeks. Sources of misdiagnosis were indigenous medicine in 69.44% (n=25), local physician/medical officers in 61.11% (n=22), OTC pharmacists in 52.77% (n=19), private dermatologists in 41.66% (n=15) and other medical specialists in

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27.77% (n=10) patients. Most frequent misdiagnosis made was "eczema" in 47.22% (n=17) cases; followed by "skin allergy", "worms", tinea and unspecified diagnoses. Interestingly, three cases of histoid leprosy were initially misdiagnosed as cutaneous sarcoidosis. One patient with BT Hansen's with ocular leprosy was misdiagnosed as Vogt-Koyanagi-Harada syndrome by rheumatologist. One patient diagnosed with ANCA-vasculitis was later diagnosed with lucio leprosy. Misdiagnosis was clinical in 69.44% (n=25) and clinical as well as histopathological in 27.77% (n=10) cases. Slit-skin smears and biopsy with Fite-Faraco staining were employed in only 19.44% (n=7) and 11.11% (n=4) cases respectively. Commonly prescribed treatments included topical steroid±antibiotics, oral antibiotics, antifungals and corticosteroids.

Limitations: Retrospective design, possibility of missing patient records, recall bias

Conclusion: Observed leprosy incidence is the tip of iceberg. High index of suspicion, community education and medical training is imperative.

Keywords: Misdiagnosis, Delay in diagnosis

#0112/ ILCABS105

DIAGNOSING AND TREATING LEPROSY IN A NON-ENDEMIC SETTING IN A NATIONAL CENTRE, LONDON, UNITED KINGDOM 1995-2018

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Background: Leprosy is rare in the United Kingdom (UK), but migration from endemic countries results in new cases being diagnosed each year. We documented the clinical presentation of leprosy in a non-endemic setting.

Methods: Demographic and clinical data on all new cases of leprosy managed in the Leprosy Clinic at the Hospital for Tropical Diseases, London between 1995 and 2018 were analysed.

Results: 157 individuals with a median age of 34 (range 13-85) years were included. 67.5% were male. Patients came from 34 different countries and most contracted leprosy before migrating to the UK. Eighty-two (51.6%) acquired the infection in India, Sri Lanka, Bangladesh, Nepal and Pakistan. 30 patients (19.1%) acquired leprosy in Africa, including 11 from Nigeria. Seven patients were born in Europe; three acquired their leprosy infection in Africa, three in South East Asia, and one in Europe. The mean interval between arrival in the UK and symptom onset was 5.87 years (SD 10.33), the longest time to diagnosis was 20 years.

Borderline tuberculoid leprosy (n=71, 42.0%), and lepromatous leprosy (n=,53 33.1%) were the commonest Ridley Jopling types. Dermatologists were the specialists diagnosing leprosy most often. Individuals were treated with World Health Organization recommended drug regimens (rifampicin, dapsone and clofazimine).

Conclusion: Leprosy develops after residence in a leprosy endemic area. The number of individuals from a leprosy endemic country reflect both the leprosy prevalence and the migration rates to the United Kingdom. Clinicians need to recognise the symptoms and signs of leprosy.

Keywords: Clinical features, Epidemiology, Diagnosis, Treatment, Imported leprosy

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#0113/ ILCABS133

STUDY OF PROFILE OF IMMUNOLOGICAL MARKERS IN NEW LEPROSY CASES IN RELATION TO PROGRESSION OF NERVE FUNCTION IMPAIRMENT.

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Title: To Study Immunological markers in leprosy in relation to deformity.

Introduction: Though MDT has decreased the burden of disease, Nerve function impairment in leprosyis challenging as many patients are left with permanent disability. Early identification and treatment of nerve impairment to prevent leprosy disability is important for disease eradication. Antibody response to Mycobacterial antigens, nerve antigens and cytokines could collectively contribute to NFI in leprosy .This study aimed to correlate immunological markers in sera of leprosy patients as potential markers for their association with Nerve function impairment.

Objective: To analyze Antibodies to Mycobacterial/ nerve components and serum cytokines in association with Nerve Function Impairment (NFI)

Patients/methods: Newly diagnosed 200 leprosy cases were included after a written informed consent. Clinical charting for type of disease, Sensory- Motor assessment of hands& feet, Thermal, Vibration &Cold sensation testing for peripheral nerves, Grading of Neuropathy (NFI, Nerve tenderness) and Sensory-Motor Nerve Conduction studies for peripheral nerves was done . Antibodies to PGL-1, LAM, Ceramide, S100 and TNF α levels were measured using ELISA at onset, at 6 months and at 1 year . Association of changes in antibodies levels with increasing or decreasing NFI was evaluated.

Results: Higher level of LAM antibodies was observed in sera of cases with no deformity and those with Grade I impairment as compared to cases with Grade II deformity .Following treatment higher mean level of LAM antibodies was found in cases with No NFI than those with NFI. Significant differences in anti-Ceramide levels were noted in cases with GRADE 1 NFI vs.GRADE 2 NFI. Higher mean level of S-100 antibodies was observed in Cases with early Grade 1 NFI as compared to Cases without NFI and Grade 2 NFI.

Conclusion: Concomitant increase in these markers in patients may signal impending

Keywords: NFI, DEFORMITY, MDT

#0114/ ILCABS142

CLINICAL, BACTERIOLOGICAL AND MOLECULAR OBSERVATIONS IN RELAPSES IN LEPROSY

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Introduction: Though leprosy has been declared eliminated events such as relapses pose clinical, operational and epidemiological challenges. Emerging cases of multidrug-resistant *M. leprae* are threat to goal of zero

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leprosy. Our continued work on investigations of relapses, we share experience on clinical, bacteriological and molecular observations.

Materials & Methods: Patients who have completed treatment/under follow-up reporting with new and/or recurrence of lesions attending/referred to our Referral Centre in Mumbai were investigated.

From 2013 to 2022, we recorded 65 patients (57 males, 8 females) with new/recurrence of lesions or suspected relapse.

DNA extracted from skin biopsies and PCR performed for RLEP PCR. DNA sequences of identified regions of *M. leprae* folP1, rpoB and gyrA, responsible for resistance to dapsone, rifampicin and fluoroquinolones, were analyzed.

Results: Among 65 relapses, 49 had new lesions, 13 T2R, 5 histoid lesions and 5 neural involvements. Histopathology showed BT in 24, BL-LL in 35.

Thirty-eight (58%) were smear positive on relapse, 31 had BI of > 3+, mean RFT was 15 years. Twenty-eight were smear negative, mean RFT 8 years. In 22, positive at onset, (12 positive,10 negative) on relapse. In 12, negative at onset, all except 1 were negative on relapse.

Fifty-six investigated for molecular drug resistance, 45 were sensitive to rifampicin (RFP), dapsone (DDS) and ofloxacin (OLF). Among 11(20%), 2 were resistant to dapsone (BI-neg,1+), 3 resistant to RFP (BI-neg,5+,5+) and 1 to both RFP & OLF (BI-neg), 5 resistant to OLF (BI- neg,2+,5+,6+,4+), mean RFT 15 years.

Conclusion: Multidrug resistance to two bactericidal drugs in relapse is cause of grave concern. MDR in smear negative, highlights importance of undertaking testing all relapses. Resistance to Ofloxacin, used as second line drug is matter of concern. Detection and retreatment are important for early interruption, chain of transmission and suitable line of treatment.

Keywords: Leprosy, Relapses, Drug resistant, MDR, Molecular PCR, Recurrent lesions

#0115/ ILCABS154

MYCOBACTERIUM LEPRAE AND MYCOBACTERIUM LEPROMATOSIS ON IMMUNE REACTIONS AND CLINICAL OUTCOMES IN HANSEN'S DISEASE: A SINGLE-CENTER RETROSPECTIVE ANALYSIS

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Introduction: Lucio's phenomenon (LP) the least common but potentially most severe reaction, is a necrotizing vasculopathy associated with significant morbidity and mortality risk.Previously, *M leprae* was thought to be the sole pathogen responsible for Hansen's disease(HD) and all immunologic reactions. However, a novel pathogen, M lepromatosis, was found to cause HD in some patients mostly in Mexico and Central/South America.

Objectives This study sought to compare the prevalence of immunologic reactions and clinical outcomes in HD caused by *M. leprae* and M. lepromatosis.

Patients / material and methods: We performed a retrospective analysis of HD patients the Los Angeles County HD clinic 2011-2021. Records were reviewed for demographics, immunologic reactions, clinical

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outcomes, and tissue real-time polymerase chain reaction (qPCR) using unique repetitive elements for *M. leprae* (RLEP) and M. lepromatosis (RLPM). X2 test were applied. To adjust for multiple hypothesis testing, Bonferroni correction was applied, with threshold for significance set at 0.0045.

Results: Thirty-eight HD patients had available qPCR results (*M. leprae*, n= 27; M. lepromatosis, n=11). All M lepromatosis patients were from Mexico, whereas greater geographic diversity was observed for *M. leprae*. Compared to *M. leprae*, patients infected with M. lepromatosis had a significantly higher percentage of LP (81.8% vs 3.7%, p<0.001), whereas RR and ENL did not significantly differ. Furthermore, a greater percentage of patients infected with M. lepromatosis underwent amputation (36.3% vs. 0%, p=0.001) and hospitalization (45.4% vs. 3.7%, p=0.001) compared to those with *M. leprae*

Limitations: This study is limited by the retrospective single-center design

Conclusion: association between M. lepromatosis and LP using RLPM, is important due to the aggressive and potentially fatal nature of LP. The higher prevalence of amputation and hospitalization observed for M. lepromatosis may be attributable to LP.

Keywords: M. lepromatosis, Lucio's phenomenon, Reactions

#0116/ ILCABS163

DIAGNOSIS OF PURE NEURITIC LEPROSY USING CLINICAL, HISTOPATHOLOGICAL AND MOLECULAR BIOLOGICAL INVESTIGATION- A CASE SERIES

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Introduction: Pure Neurtic Leprosy (PNL) is a variant of leprosy characterized by isolated involvement of peripheral nerve trunks without any skin lesions. Hence, demonstration of lepra bacilli is essential for definite diagnosis of pure neuritic leprosy (PNL) in nerve biopsy. Since they fall towards the tuberculoid spectrum of the disease, nerves always do not show bacilli. In such scenarios, additional molecular diagnostic tools like polymerase chain reaction (PCR) have proven to be useful in diagnosing doubtful cases.

Methods: Patients attending the outpatient department of Schieffelin Institute of health Research and leprosy Centre were enrolled in the study. Diagnostic evaluation comprising clinical, histopathological and Molecular Biological investigations were done.

Results: 6 patients with complaints of ulnar tingling sensation and reduced sensation in both palms and soles were subjected to clinical and laboratory investigations. Slit skin smears to ascertain the bacteriological index was done for all 6 patient and was found to be negative for all. Nerve biopsy was done in one patient and . PCR for *M. leprae* using Rlep repetitive gene and MH6 was performed in all six cases and was found to be positive for all patients.

Conclusions: While diagnosing doubtful cases like Pure Neuritic Leprosy, where usually smears are negative, it is imperative to use clinical histopathological and PCR techniques to confirm the diagnosis. A positive PCR increases the sensitivity of detection of *M. leprae* especially where sometimes, AFB cannot be demonstrated on histopathology.

Keywords: Nerve biopsy; Polymerase chain reaction (PCR); Leprosy; Pure neuritic leprosy.

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#0117/ ILCABS175

RIDDLE OF HANSEN'S DISEASE AND ITS MASQUERADORS-PERPLEXITY YET TO BE SOLVED

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Introduction: Different manifestations of leprosy are known since time immemorial ranging from anesthetized hypopigmented patch to paraesthesia, motor weakness painful tender subcutaneous nodules, etc. But even in today's era, newer and atypical presentation never fails to amaze us with a clinical presentation that does not conform with the cardinal signs, thereby delaying diagnosis and treatment leading to increased patient morbidity. Herein, we report a series of patients in which leprosy was not kept as a differential diagnosis at first owing to their atypical clinical presentation.

Objective: To Identify atypical presentation and morphologies of Hansen's disease.

Patients-patients presenting to dermatology outpatient department with a varied range of complaints not biding to classical leprosy features but later on diagnosed as Hansen disease were included.

Material and methods: patients presenting to the dermatology outpatient department were thoroughly evaluated with a detailed clinical history and examination. Post evaluation, they were subjected to curtained investigations including a skin biopsy. Patients who were not responding to the initial prescribed treatment and later on found to be cases of Hansen disease or those with a presentation like other dermatoses but histopathology is suggestive of Hansen disease are included in this study.

Results: Patient initially diagnosed as a case of tinea faciei, topical steroid damaged face, sporotrichosis, erythema multiforme, peripheral vascular disease, genital ulcer disease, scrotal contact dermatitis, Mucormycosis, Lupus erythematosus, sweet syndrome, leukamoid reaction, DRESS syndrome, lupus vulgaris, etc were recruited. Later on all of these were found to be leprosy cases and appropriate multidrug therapy was given to them post which there was a significant improvement.

Conclusion: Diagnosis of Hansen's disease needs a keen suspicion for the disease and clinicians need to be more vigilant to detect cases with unusual presentations.

Keywords: Hansen's disease, Atypical presentation

#0118/ ILCABS177

UNVEILING THE CLINICODERMOSCOPIC AND HISTOPATHOLOGICAL CORRELATION OF HISTOID HANSEN'S DISEASE: A CASE SERIES

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Introduction: Histoid leprosy, an uncommon variant of lepromatous leprosy has characteristic histopathological findings and bacterial morphology. It develops either de novo or in patients following monotherapy or incomplete multi-drug therapy for lepromatous leprosy. It's difficult to diagnose because it resembles a number of dermatological disorders and, in many cases, lacks key characteristics such as loss of sensation. Dermoscopy being a noninvasive tool can be used effectively in inflammatory and infective disorders to solve this puzzle.

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Objectives: To evaluate the dermoscopic patterns and its histopathological correlation of Histoid Hansen.

Methods: We conducted a hospital based observational study among patients diagnosed with Histoid Hansen disease over a period of 1 year. They were evaluated clinically followed by dermatoscope of 10x magnification in polarized mode and later confirmed with histopathological examination.

Results: A total of 5 cases were diagnosed during this period.3 of them presented as denovo Histoid Hansen and 2 following irregular MDT. Well demarcated small papules seen over extremities and ear lobes were seen in all cases. Bacteriological index was in the range of 4-6(mean-5). Histopathology showed diffuse dermal infiltrates composed of spindle shaped histiocytes and dermoscopy showing linear branching vessels were observed in all cases. Crown vessels, Shiny white streaks and follicular plug were the other dermascopic findings seen in two cases.

Limitation: Short duration of follow up

Conclusion: In post elimination era of leprosy, occurrence of Histoid Hansen highlights missing or delay in the diagnosis and remains as a threat for the eradication of leprosy.

Dermoscopy can be an effective tool in diagnosis, as it reflects the histological features of the disease.

Keywords: Histoid Hansen, Dermoscopy, Linear Branching vessels, Spindle shaped histiocytes, Shiny white streaks

#0119/ ILCABS178

CLINICO HISTOPATHOLOGICAL CORRELATION: IN EMERGING SPECTRUM OF LEPROSY

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Introduction: Leprosy is a chronic granulomatous skin disease caused by Mycobacterium leprae which affects cooler areas of skin and peripheral nerves. Leprosy has been eliminated as a public health problem in India on January 1, 2006. However, emerging cases are attributed to migration of population due to urbanization and associated severe social stigma that leads to prejudice against patients and their families. Clinical presentation and associated disabilities differ depending on the host immune status. Histopathological examination with Fite-Faraco staining of skin biopsies helps in accurate identification of leprosy spectrum.

Objectives: To study the epidemiological and clinical subtypes of leprosy and to evaluate the correlation of clinical with histopathological subtype using special stain.

Materials and Methods: A cross-sectional study done over a period of 5 years from January 1st 2017 to April 31st 2022. Skin biopsies of newly clinically diagnosed cases of leprosy using routine and special stains along with clinicopathological correlation was studied.

Results: A total of 32 patients were studied between 10-70 years of age with a mean age of 34.25 years. Male:Female was 1.2:1. Majority (72.9%) were migratory illiterates from low socioeconomic strata. The most common presenting lesion was a hypopigmented macule (41.46%) followed by nodules (29.26%) and 37.7% patients had clinical alterations in peripheral nerves. Clinically 22.7% of them were classified as grade-1 and 11.3% as grade-2 disability. On histopathology, Borderline tuberculoid leprosy was the most common type followed by

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Lepromatous leprosy and Indeterminate. Clinical and histopathological concordance was seen in 62.12% of cases and Fite-Faraco positivity was found in 38.21%. The concordance was highest in lepromatous spectrum.

Limitations: Less number of patients and retrospective study.

Conclusion: Clinical examination with histopathology and special stains in significant for better understanding of various spectrum of leprosy. Thus, concordance with histopathology facilities early diagnosis, appropriate management and prevention of deformities.

Keywords: Clinical, Histopathological, Leprosy

#0120/ ILCABS198

A 10 YEAR RETROSPECTIVE REVIEW OF NEW LEPROSY CASES PRESENTING AT A TERTIARY REFERRAL HOSPITAL

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Introduction: Despite success in reducing disease burden and maintaining leprosy elimination status at a national level, detection of new leprosy cases in the community indicates persistent local transmission and obstacles for leprosy-eradication plans.

Objective: To analyze the trends and patterns of new leprosy cases diagnosed at tertiary leprosy care services over 10 years.

Materials and methods: A 10-year (2012-2021) retrospective chart review of newly detected leprosy cases was performed. General and clinical demographics were analyzed using SPSS statistics 22 including Chi-square test analysis.

Results: From 2012-2021, a total of 1429 new leprosy cases were recorded, of which 65% were males and 35% were females. Age at diagnosis ranged from 2-95 with an average of 37.5 years and 7.4% child cases. More than half were smear positive (53%); and 85.7% of total cases were prescribed MB-MDT. The majority of cases were borderline tuberculoid (BT; 47%) and borderline lepromatous (BL; 20%) with maximum annual numbers in 2021 of BT (n=100) and lepromatous leprosy (LL) cases (n=37). Approximately 30% of new cases were disabled, with 18% having grade 2 disability and 12% having grade 1 disability. Type 1 and Type 2 reactions were present at diagnosis in 3.8% and 1.5% of new cases, respectively. Disability grade at diagnosis was statistically associated with gender (p=0.001).

Limitations: Case presentation at leprosy referral services can be skewed toward those with concurrent complications such as reactions, neuropathy and disability development.

Conclusions: High rates of smear positivity and MB cases demonstrate continuing prevalence and community transmission of leprosy. In addition, detection of new cases with grade 2 disability suggests delays in leprosy diagnosis. Effective screening and active surveillance are imperative to maintain elimination and progress towards eradication status.

Keywords: Diagnosis, Disability, New cases, Leprosy

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#0121/ ILCABS204

RETROSPECTIVE REVIEW OF LEPROSY RELAPSE CLINICAL PROFILES

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Introduction: Validation of leprosy relapse can be difficult, especially in smear negative patients or those with an inadequate treatment history.

Objective: To study trends of the disease's initial clinical form on relapse cases.

Materials and Methods: A retrospective chart review was conducted of cases with suspected relapse from January 2012 to December 2021. The presence of solid bacilli in a slit skin smear, presence of viable *M. leprae* by mouse foot pad assay, and histopathological examinations were used to determine relapse.

Results: A total of 216 of 282 (77%) suspected relapse patients referred to a leprosy referral center were confirmed as relapse. The mean duration from completion of initial leprosy treatment to relapse was 15.1 (range-1.5-44) years. Among confirmed relapse cases, there were 167 males and 49 females with a mean age of 45 years (range=13-84), 173 BI+ cases (80%), and 29 (13%) with reaction at relapse. The duration of relapse following completion of MDT did not significantly differ between males and females ($p>0.05$). Of those with records, 163 were previously classified as MB (163/216, 75%), 36 as PB (36/216, 17%) and 6 as DDS monotherapy (6/216, 3%). In terms of relapse duration, there was no significant difference between the previous treatment regimens: MB average 14.5 years (range-1.5-44) and PB average 16.7 years (range-4.5-40). Sixty-three percent of relapse cases were presented as BL/LL or BL type (135/216) versus 12% BB or BT type. There were 173 BI+ cases (80%), and 29 (13%) had a reaction at relapse.

Limitations: Some patients were unable to provide prior clinical history.

Conclusion: Most relapse cases are highly bacilliferous, indicating late diagnosis. Early detection is imperative to reduce risks of transmission or disability development. More sensitive techniques to detect the viability of *M. leprae* are needed for early diagnosis of relapse.

Keywords: Diagnosis, Leprosy, Relapse

#0122/ ILCABS208

PROFILE OF LEPRA REACTIONS DURING COVID ERA - A CASE SERIES

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Introduction: COVID-19 disease is known to have a significant impact on pre-existing dermatoses, altering their outcome. In Hansen's disease, COVID19 illness is known to demonstrate a variable inter-individual response. In 2020, the Brazilian Society of Hansen's Disease had issued a warning regarding an increased risk Covid infection in individuals being treated for leprosy reaction.1 We came across 14 patients with pre-existing Hansen's disease in a background of COVID infection or vaccination, out of which nine cases were in Type 1 reaction and five cases in type 2 reaction.

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Objectives: To study the clinical course and outcome of lepra reactions in Covid era.

Materials and Methods: patients with pre-existing Hansen's disease in a background of COVID infection or vaccination

Results: fourteen patients (10 males and 4 females) with a mean age of 36.71 years diagnosed earlier with Hansen's disease and presenting to OPD with Lepra reaction. Eight patients were COVID RTPCR positive and six had a history of receiving the vaccination 5-6 days prior to the appearance of reaction. All the patients had a stable course of disease and were on multi drug therapy as per the standard WHO regimen for Hansen's disease on a regular basis. There was no prior history of any superadded infection, trauma or any other vaccination other than covid vaccine in the subjects.

Conclusion: presenting this series of lepra reactions with covid-19 coinfection in which all the patients had a triggering factor for reaction. Each patient had a stable course and outcome of the disease and was treated cautiously with no major complications being observed during the treatment and on follow up visits

No conflict of interest.

Patient consent taken

Keywords: Covid-19, Lepra reaction

#0123/ ILCABS239

CLINICAL PROFILE OF LEPROSY PATIENTS ATTENDING THE OPHTHALMOLOGY OUTPATIENT CLINIC OF A TERTIARY CARE LEPROSY CENTRE IN SOUTH INDIA

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Background: Ophthalmology services at leprosy institutes have helped in identifying many eye-related leprosy impairments early. The aim of the study was to look at the clinical profile of the leprosy patients who attended the Ophthalmology clinic of a tertiary care leprosy center in South India.

Materials & Methods: Medical records of the leprosy patients who attended the Ophthalmology clinic between Jan 2021- Dec 2021 were retrieved. Demographic, clinical, and treatment details of these patients were collected and analyzed.

Results: A total of 154 leprosy patients attended the Ophthalmology clinic in the year 2021 with a male to female ratio of 2.4:1. The majority of patients (n=71, 46%) belonged to the 61-80 years age group. Borderline tuberculoid leprosy was the majority type (n=44, 28.5%), followed by lepromatous leprosy (n=40, 25.9%), borderline lepromatous being next (n=34, 22%), pure neuritic and borderline borderline to borderline lepromatous each with n=10 (6.49%), tuberculoid n=5 (3.24%), indeterminate n=3, (1.9%). 111 patients (72%) were revisit patients on follow-up who were released from treatment. 78 of the patients (50.6%) were diagnosed with cataract, 36(23.4%) were pseudophakic, and another 36(23.4%) didn't have any ocular disease. Refractive errors and glaucoma were the remaining 2.6%. While looking at the leprosy-related ophthalmic manifestations, 102 patients (66.2%) didn't have any complications. Lagophthalmos was the most common ocular complication in 28 patients(18%), followed by corneal scar in 22 patients(14%). Trichiasis, madarosis, uveitis, and dry eye constituted a very low percentage.

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Conclusion: The clinical profile of leprosy patients who presented to the ophthalmology OPD showed age-related cataract as the main ocular diagnosis. Lagophthalmos and corneal scars were the two main leprosy-related ocular complications found among the patients. Leprosy patients didn't have any ocular manifestations which can be attributed to the early diagnosis and treatment of leprosy.

Keywords: Leprosy, Ocular manifestations, Cataract

#0124/ ILCABS247

UNDERSTANDING THE IMPACT OF COVID-19 ON PEOPLE WITH LEPROSY REACTIONS IN EAST JAVA, INDONESIA

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Introduction: In March 2020, COVID-19 was classified as a pandemic by the WHO. As a response, many countries implemented public health and social measures to mitigate the spread of the virus and shifted their healthcare resources to treat COVID-19 cases. Few researchers reported the impact of COVID-19 on leprosy programs but did not provide personal accounts of individuals with leprosy reactions.

Objective: To understand the impact of COVID-19 on people with leprosy reactions by analyzing their treatment-seeking behavior.

Methods: This qualitative study compared the experience of Indonesians with leprosy reactions in 2019 (pre-pandemic) and 2022 (during the pandemic). Study populations included individuals receiving treatment for leprosy reactions aged 17 years old and above. In 2019, 32 people with type-1 and type-2 reactions were interviewed. In 2022, all participants were recontacted and 11 people were willing to participate. Experiences of participants were compared over time and analyzed using thematic analysis.

Results: Thematic analysis revealed four main themes consisting of COVID-19 impact on people in the steroid treatment, treatment-seeking during the pandemic, changes in interactions with healthcare workers, and COVID-19 vaccination. COVID-19 impacted patients who were still in the treatment of steroids. Some chose to buy steroids at their local pharmacy and postpone their visit due to fear of contracting COVID-19. Changes in the patient-doctor interactions (e.g., shorter consultation time and less regular body checks) were experienced by the patients. Confidence to revisit the outpatient was regained after a declining trend of COVID-19 cases and vaccination was widely available. Most patients who consumed steroids were advised to not receive the COVID-19 vaccines to prevent the recurrence of leprosy reactions.

Limitations: Only people with leprosy reactions who were receiving treatment in the hospital were included.

Conclusion: COVID-19 has impacted the treatment-seeking behavior of individuals with leprosy reactions and

Keywords: Impact of COVID-19, Treatment-Seeking Behavior, Leprosy Reactions, Indonesia

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#0125/ ILCABS249

PREVENTION OF GRADE-II DEFORMITY BY INSTITUTION OF SYSTEMIC CORTICOSTEROIDS DURING TREATMENT AND FOLLOW UP OF LEPROSY CASES – A CASE SERIES

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Introduction: Grade-II deformity is a major complication affecting 32% of leprosy patients worldwide associated with significant morbidity. Systemic corticosteroids can prevent Grade-II deformity if administered at the right moment during treatment with Multi Drug Therapy (MDT) and after release from treatment (RFT). A systematic follow-up of the patients during the long treatment phase and the follow-up period is required.

Objectives: A reduction of Grade -II deformity can lead to reduction of DALY (Disability Adjusted Life Years).

It can reduce the need for reconstructive surgery (RCS) among Grade-II deformity cases.

Material and Methods: A case series of four leprosy cases were selected in North 24 Parganas, West Bengal, India between October 2021 to February 2022. Among the patients, two patients were given MB ADULT MDT. Another two patients had undergone RFT two months ago around October 2021 to November 2021. It was noticed that all of them were suffering from Type I Lepra Reaction (pain and swelling in the hands along with claw hands in three patients and bilateral claw hands and left foot drop in the last one) .

All the patients were administered systemic corticosteroids for a period of 3 months. They were followed up at an interval of 2 weeks.

Results: The cases were followed up for 3 months. Physiotherapy was demonstrated to the patients and it was found that the Grade-II deformity could be prevented.

Limitations: Small sample for conducting a case series study.

Limited time duration of the study.

Conclusion: Timely detection of Lepra Reaction and prompt administration of systemic corticosteroids can prevent Grade-II deformity thus eliminating the need for RCS.

Keywords: Systemic corticosteroids, RFT, DALY, RCS, Lepra Reaction, Physiotherapy

#0126/ ILCABS269

CLINICO-EPIDEMIOLOGICAL PROFILE OF GERIATRIC LEPROSY PATIENTS OF EASTERN INDIA: A RETROSPECTIVE HOSPITAL BASED CROSS-SECTIONAL STUDY

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Introduction: Geriatric populations are susceptible to leprosy infection with masked clinical signs due to lower immunity Aim and objective:To analyze the clinical-epidemiological profile of patients of geriatric

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leprosy and find out the reasons for delayed diagnosis and treatment. Material and methods: A retrospective record based study was conducted in a tertiary care center from January 2021 to May 2022. The clinic-demographic data of biopsy confirmed leprosy cases aged > 60 years were obtained from leprosy clinic record. Various reasons for the delay in treatment were also recorded. Simple statistics was used for analysis. Results: Out of 499 leprosy cases, 37 (7.4%) cases belonged to the geriatric population. The male and female ratio was 3.6: 1. Age between 60-65years had 51% (19/37) cases, followed by 24% (9/37) cases in 66-70years. The median duration of illness was 18 months (range 1 to 240 months). Most of the patients were illiterate (24%) and below the 10th class (32%). 73% (27/37) cases presented as a new case, and 16% (6/37) were continuing treatment. The predominant occupation was a farmer and homemaker. The ulnar nerve was the most common nerve to be thickened in 81% (30/37) cases, followed by the common peroneal nerve in 64% (24/37) cases, the radical cutaneous nerve in 46% (17/37) cases, and posterior tibial nerve in 27% (10/37) cases. Borderline tuberculoid leprosy was the "most common type" in 49% (18/37) cases, followed by Lepromatous leprosy in 27% (10/37). 40% (15/37) had grade 2 disability. Common reasons for the delay in treatment were financial constraints, lack of family support,andpersonalsuperstitiousbeliefs. Limitation:Retrospective studyConclusion: Geriatric leprosy needs special attention as they are more prone for deformities and because of low immunity there is high chance to develop multibacillary leprosy and potential source of infection to the community.

Keywords: Clinical, Epidemiology, Geriatric leprosy, Delayed diagnosis and treatment

#0127/ ILCABS277

STEROIDS GIVEN FOR LEPRA REACTIONS INCREASES THE RISK OF RELAPSE AFTER RELEASE FROM TREATMENT: A 10 YEAR RETROSPECTIVE STUDY FROM A TERTIARY CARE CENTER

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Title: Steroids given for lepra reactions increases the risk of relapse after release from treatment: A 10 year retrospective study from a tertiary care center

Introduction: Steroids are commonly given for lepra reactions especially for neuritis. This may contribute to relapse after treatment.

Objectives: The primary aim of this study was to elucidate if steroids given for lepra reactions increases the risk of relapse after stopping treatment for leprosy.

Materials & Methods: This is a 10 year retrospective descriptive study done in a tertiary care center. The data were obtained from the NLEP cards. Data was mainly focused on relapse cases and cases on steroid therapy prior to relapse. Data were expressed in mean and frequency and the Chi squared test was used to denote significance ($P<0.05$).

Results: There were a total of 499 cases in the study period (n=499). There were a total of 29 relapse cases (5.81%), 24 males and 5 females. The commonest age group affected was 41-50 (8 cases). The mean duration of relapse was 1.17 years (From RFT to relapse). Borderline tuberculoid was the commonest to relapse, 13 cases. The commonest type of HD was BT in the entire study population (227/499). A total of 38 patients

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(38/499) were given steroids during their therapy for leprosy. The 29 patients who relapsed later, 13 patients were on systemic steroids and this was significant (P=0.037). Neuritis was the commonest indication for steroids, 26 cases. The mean duration of steroid therapy was 4.78 months, while no patients were on steroids at RFT. 10 patients who relapsed, had duration of steroid therapy more than 5 months and this co-related with relapse and was significant (P=0.001).

Limitations: Retrospective study and small sample size.

Conclusions: Steroids given for lepra reactions and its duration of therapy increases the chances of relapse.

Keywords: Relapse, Steroids, Leprosy

#0128/ ILCABS295

ADVERSE EFFECT OF THALIDOMIDE IN CHRONIC ENLS AMONG PATIENTS AFFECTED WITH LEPROSY

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Adverse effect of thalidomide in chronic ENLs among patients affected with leprosy

Introduction: Type 2 reaction (Erythema Nodosum Leprosum) is serious complication of leprosy treated with steroids .However, there are subset of patients in whom steroids cannot be administered for various reasons. As a steroid sparing medicine, thalidomide is extremely effective and safe. Thus, it becomes important to study the adverse effects of this agent. We have used Thalidomide for ENLs and in this study we describe the adverse drug reactions (ADRs) in 11 patients from 2018- 2020. We also discuss the mode of management of these ADRs and its outcome post treatment with thalidomide.

Objectives: To describe the ADRs attributable to thalidomide and its management in the treatment of ENLs.

Methodology: A retrospective chart analysis was conducted and those treated with thalidomide for ENLs between 2018 to 2020 were selected. Data entry was done and analyzed in MS excel. The variables studied were adverse effects, mode of management and disease outcomes.

Results: 11 male patients were selected for the study, ranging from 12 to 42 years of age. The detailed ADRs and treatment outcomes will be discussed under the following headings: Profile of ADRs, duration and dose of therapy, mode of management and treatment outcomes. The ADRs were classified into neurological, vascular, cutaneous, GI, lab parameters and miscellaneous headings.

Limitations: This is a retrospective study with inferior levels of evidence compared to prospective studies. Since we had no females in this cohort, it would be important to compare ADRs of females vs males.

Discussion: Thalidomide is a safe drug and can be used as a steroid sparing agent. Patients should be monitored closely for thalidomide related adverse effects. National leprosy programs should include thalidomide in the list of essential medicines in the in management of chronic ENLs.

Keywords: Chronic type 2 reaction, Thalidomide, Adverse reaction, Steroid sparing drug.

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#0129/ ILCABS310

CLINICOHISTOPATHOLOGICAL CORRELATION IN LEPROSY: A STUDY AT A RURAL BASED TERTIARY CARE CENTRE.

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Introduction: Leprosy is a chronic infectious disease involving skin and peripheral nerves. It is present in different clinicopathological forms depending upon immune status of the host. This study has been conducted to know the correlation between clinical and histopathological diagnosis of leprosy.

Objectives: To study the clinical and histopathological features in patients of leprosy and to find out the correlation of clinical diagnosis and histopathological diagnosis.

Material and Methods: This was a prospective, observational study conducted in the department of dermatology at a tertiary care centre .All the patients who were suspected as leprosy clinically were enrolled in a predesigned proforma after written informed consent and were subjected to histopathological examination,AFB. Clinical diagnosis of the leprosy cases using Ridley & Jopling scale was correlated with the results of histopathologic examination of their respective biopsies.

Results: A total of 119 patients were enrolled in which the majority of patients were in the age group of 20-40 years 57(47.89%). 77(64.70%) were males and 42(35.29%) were females. Clinically majority of patients belonged to tuberculoid leprosy in 31(26.05%) cases. Histologically, tuberculoid leprosy was the most common type in 32(26.89%) cases. Maximum clinicohistopathological correlation was seen in IL (100%) followed by TT (83.87%), BL (63.15%), LL (56.25%), BT (27.58%) and minimum in BB (0%). Overall concordance of diagnosis was seen 53.78%.

Limitations: This was a single centre study, result may not be generalisable to other health care settings. Prospective multicenter studies are needed to confirm the finding of this study.

Conclusion: The histopathological features in leprosy indicate the accurate response of the tissues while the clinical features indicate only the morphological changes due to underlying pathology. Thus, it is logical to expect some disparity between the clinical and histopathological features.

Keywords: Leprosy, Clinical features, Histopathology

#0130/ ILCABS328

CROSS-SECTIONAL STUDY OF EYE CHANGES IN LEPROSY PATIENTS ATTENDING DEPARTMENT OF DERMATOLOGY OF TERTIARY CARE HOSPITAL.

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Introduction: Leprosy is a chronic granulomatous infectious disease caused by 'mycobacterium leprae' affecting peripheral nerves, skin and internal organs. The anterior segment of eye is most vulnerable site of affection, but any part of eyeball and its adnexa are susceptible to invasion by leprae bacilli. Leprosy still remains an important public health problem in many parts of India.

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Objectives: To identify potentially sight threatening lesions due to disease and drugs use in leprosy management and provide early management to reduce morbidity.

Material and Methods: A cross sectional study was done over period of 3years (August 2019-August 2022) in tertiary care hospital. After approval by institutional ethics committee, written informed consent was obtained from patients who satisfied inclusion and exclusion criteria. Patients underwent thorough clinical and ophthalmological examination during presentation, every 6th month and in lepra reactions. All findings were documented and patients were treated accordingly.

Results: A detailed eye examination of 82 patients of leprosy was done during the study period. Out of 82 patients 46 (56%) patients had eye changes. Out of 46, 33(72%) were male and 13 (28%) were female. Most common changes seen over eyebrows and eyelids and most of the patients belong to lepromatous leprosy(41%). Recurrent episcleritis was associated with lepra reaction. Facial nerve palsy was encountered in tuberculoid leprosy and in lepra reaction in lepromatous leprosy. Endophthalmitis was found in a long-standing case of lepromatous leprosy.

Limitations: This study might not reflect true prevalence of eye involvement in leprosy as only patients visiting the institute were included in study.

Conclusions: Early diagnosis, proper implementation of MDT, regular eye checkup and early treatment of leprosy and lepra reaction may decrease burden of eye related morbidity in leprosy patients.

Keywords: Eye involvement, Leprosy, Lepra reactions

#0131/ ILCABS348

ADVERSE EVENTS DUE TO MULTIDRUG THERAPY FOR LEPROSY IN SRI LANKA: THE CHANGING SCENARIO OVER 30 YEARS

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Introduction: Adverse events due to MDT are considered rare and data are usually incomplete.

Objectives: To calculate the rate of adverse event to MDT in a referral centre in Sri Lanka

To compare the data with previous records to analyse trends

Material and methods: Clinical records of all patients managed at Central Leprosy Clinic (CLC), Colombo, from January 2016 to December 2020 were analysed to calculate the rate of adverse events and to identify suspected drugs. This data was compared with available clinic data from various settings in Sri Lanka

Results: There were 472 patents (71%males, average age 39.3 years). Dapsone related adverse events were reported in 10.38% with dapsone discontinued in 5.5%. Haemolysis (6.14%), Hepatitis (2.33%), 3. Dapsone hypersensitivity syndrome (1.27%), agranulocytosis, methaemoglobinaemia and cholestasis were the events reported.

One case each of enteropathy and refusal to continue treatment due to pigmentation were reported with clofazimine.

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In the 1990's only 2.33% reported adverse events in a cohort of 3333 patients at CLC. In 2009 - 11 out of 407 patients 18.5% developed adverse events and incriminating drug was discontinued in 10.5%. Both studies were carried out in the same setting. Haemolysis was the commonest and dapsone was the main culprit drug in both studies. Similar finding were reported from GH Polonnaruwa in 2008- 11 with 10.4 treatment changes. from 2016 -2019 at BH Homagama treatment change was necessary in 25. 47% out of 107 patients. Serious adverse events like fatal agranulocytosis were reported frequently during this period.

2018/19 survey among 40 dermatology units revealed dapsone hypersensitivity (23), agranulocytosis (10), cholestasis (3) and methaemoglobinaemia (4) with 6 deaths.

Limitations: Retrospective data from selected clinics only.

Conclusion: Adverse events (including serious events) due to MDT are not uncommon. Surveillance systems need to be in place to avoid serious outcomes

Keywords: Multidrug therapy, Dapsone, Adverse events

#0132/ ILCABS358

THE COST OF LEPROSY REACTIONS FOR PATIENTS AND HEALTH CARE PROVIDERS

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Introduction: Leprosy reactions are immunological complications in leprosy patients that may occur before, during or even years after multi-drug therapy (MDT) completion. Reactions can be difficult to clinically manage, require multiple and prolonged hospital stays, and severely impact patients and their households. This study investigates total cost impacts from both patient and health provider's perspectives.

Objectives: To determine leprosy reaction presentation and estimate the incurred financial burden on leprosy patients.

Material and methods: Medical charts of newly diagnosed leprosy patients in a leprosy referral hospital were retrospectively reviewed to find the the prevalence of reactions. Cost of treatment for steroids, other medicines, laboratory examination, neurological physiotherapy assessment, travel and doctor consultation were calculated.

Results: 546 medical charts for newly diagnosed patients from 2012 to 2015 were reviewed. T1R was most prevalent (18.7%), followed by Neuritis (8.6%) and T2R (6%). Most of the reactions occurred at diagnosis (74.2%) followed by next ≤1 year (17.6%) and ≥1 year (18.2%). T1R mostly occurred in BT and BL (83.3%), T2R in LL and BL (100%) and Neuritis in BT, TT and PN (76.6%). Most of the T1R (51%) and Neuritis (70.2%) were BI negative. Interestingly, males proportion was higher in Neuritis (78.7%) than non-reaction (60.6%, p=0.01). Total average cost across all fields studied were highest in T2R (415 USD) followed by Neuritis (205.3 USD) and T1R (166.7 USD). Travel cost (48.6%) accounted most of the expenditure.

Limitations: This study calculated data based on medical charts in a non-for-profit hospital which has minimal cost rates and do not include data for in-patients cost, mis-diagnosis in non-leprosy hospitals and loss of income

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Conclusion: Accurate estimation of reaction costs and prevalence may help stake-holders and researchers to gauze the severity of problem and plan for effective budget allocation and research prioritization.

Keywords: Leprosy, Reactions, Economics, Prevalence

#0133/ ILCABS371

KALEIDOSCOPE OF ATYPICAL LEPROSY

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Introduction: :Leprosy was declared eliminated from India in December 2005. Despite the elimination status of leprosy, it is still endemic in some parts of India. Failure of early recognition and treatment leads to unhindered transmission in the community.

Objective: To report various atypical presentations of leprosy.

Patients:Eight patients with atypical presentations of leprosy and lepra reactions over two years.

Results: There were three cases of Borderline Lepromatous Leprosy with the first case having hypopigmented atrophic plaques and was unsuccessfully treated for Granuloma annulare, the second case was Borderline Lepromatous Leprosy with Type 1 lepra reaction and 6 weeks later presented with Erythema Nodosum Leprosum lesions and the third case presented with a provisional diagnosis of Necrotizing Sialometaplasia with palatal perforation. There were two cases of Histoid Leprosy where 1st patient presented with ulcerated nodules over extremities and 2nd case presented with Histoid reactivation and Erythema Nodosum Leprosum lesions 22 years after completing Multibacillary Multidrug Therapy. Three cases of Borderline Tuberculoid Leprosy with the first patient presenting with a single eczematous plaque over the right leg, 2nd patient with psoriasiform plaque involving the whole length of the right lower limb and 3rd patient of suspected scar sarcoidosis with asymptomatic erythematous papules over left ankle. Another case of Lazarine leprosy presented with large ulceration over the erythematous plaques.

Conclusion: In our case series, cases are from a high endemic area which could make it a breeding ground for unusual leprosy presentations. As a result of atypical presentations, patients were initially misdiagnosed and the leprosy treatment was delayed. Hence, the clinician should be aware of the atypical and chronic natureof leprosy, which sometimes confuses the physician. A high degree of suspicion is a must to seek out otherwise misdiagnosed and mismanaged cases of leprosy in endemic areas.

Keywords: Atypical, Leprosy, Clinical Variant

#0134/ ILCABS394

HISTOPATHOLOGY!! AN INDISPENSABLE TOOL IN DERMATOLOGY

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Introduction: Leprosy is a chronic granulomatous disease caused by mycobacterium leprae. It primarily affects the skin and peripheral nerves, but other tissues like mucosa of upper respiratory tract, reticuloendothelial system, testis and eyes are also affected. We came across varied presentation of leprosy.

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Case description 1: A 20 year old male presented with multiple erythematous silvery scaly plaques with itching over abdomen, lower back, lower legs with glove and stoking pattern anaesthesia. Auspitz sign, AFB were negative. Differentials were psoriasis and borderline leprosy. Biopsy revealed borderline lepromatous leprosy.

Case description 2: A 30 year old male came with multiple small discrete papulonodular eruptions over abdomen back with glove and stocking pattern anaesthesia. Differentials were histoid leprosy & lepromatous leprosy. Biopsy revealed lepromatous leprosy.

Case description 3: A 32 year female came with 4-5 erythematous nodules and plaques over forearms. Sensations were normal & nerves were not palpable. Differentials were kept as sarcoidosis, sweet syndrome, erythema nodosum leprosum and biopsy revealed erythema nodosum leprosum .

Case description 4: A 32 year female presented with multiple confluent erythematous papular itchy lesion over neck, forearm and elbow with skin colored papular lesions over the chest,back and abdomen. AFB was strongly positive. Biopsy revealed histoid leprosy.

Case description 5: A 50 year male presented with recurrent crops of multiple itchy erythematous blanchable wheals over face, neck, trunk & proximal extremities. Bilateral common peroneal, ulnar nerve were enlarged, non tender. AFB was negative. Lepromatous leprosy and urticaria were kept as differentials. Biopsy revealed borderline lepromatous leprosy.

Conclusion: A case of leprosy remaining undiagnosed due to unusual clinical presentation is a major threat for patient as well as community. These bizarre presentations can lead to delay in correct diagnosis unless biopsy was taken.

Keywords: Leprosy, Histopathology, Unusual

#0135/ ILCABS414

PEDIATRIC LEPROSY REVISITED IN THE POST-ELIMINATION ERA

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Introduction: Leprosy in children carries an epidemiological significance and can be considered as an index of the prevalence of disease as well as reflects the efficiency of ongoing disease control programmes. Vulnerability of children to infection with Mycobacterium leprae lies in two major facts: nascent immunity and intra-familial contacts.

Objectives: To study the Clinico-epidemiological profile of pediatric leprosy patients.

Materials and methods: Retrospective study of new cases of leprosy in children (<14years) who presented to tertiary care centre of Gujarat over 3 years.

Results: Out of the total 300 leprosy patients, 4.67% (n=14) belonged to the pediatric age group (<14 years). Males (71.43%, n=10) outnumbered females (28.57%, n=4) with male: female ratio of 2.5:1. The mean age at presentation was 12.15 (±1.82) years, with most patients being in 12–14 years age group. Household contacts were identified in 35.71% (n=5) of cases and the majority of contacts were multibacillary. The most common type of leprosy found in children was borderline tuberculoid (42.86%, n= 6) followed by borderline lepromatous (28.57%, n=4) and tuberculoid (14.29%, n=2). There was 1 (7.14%) patient each of indeterminate leprosy and type 1 lepra reaction. Deformities were found in 21.43% (n=3) patients, with trophic ulcer being the

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commonest followed by claw hand. Both skin and neurological involvement were present in 71.43% (n=10) patients. Slit skin smear was positive in 78.57% (n=11) patients. Out of 14 patients, 13 completed the full course of leprosy multidrug therapy. Side effects encountered during treatment included clofazimine induced pigmentation in 28.57% (n=4) and ichthyosis in 35.71% (n=5) patients.

Limitations: Small sample size

Conclusion: Regular school surveys for early detection of cases is an important tool in achieving goal of elimination of pediatric leprosy. Clustering of familial multibacillary cases suggests that family contact tracing is mandatory in all cases of childhood leprosy.

Keywords: Child, Leprosy, Clinico-epidemiology, Household contacts

#0136/ ILCABS450

THE SITUATION OF GRADE 1 DISABILITY IN LEPROSY AFTER RFT IN BANGLADESH

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Introduction: As per National Leprosy Program report 2021, G2D is about 5.43% of new cases which is in a reducing trend. However, nationally G1D is recorded but not reported. The follow-up system is yet to be strengthened after RFT. In Leprosy, deterioration of nerve function may occur even after successful completion of MDT in different categories of patients.

Objective: To understand the prevalence of post RFT status of G1D at registration.

Materials and Methods: A cross-sectional and retrospective study was conducted using a purposive and convenient sampling method in 2 districts that are registered leprosy cases during 2016-2017. Data was collected from 47 RFT (male 25, and female 22) persons in 2022 through questionnaires, clinical examinations, and Semmes–Weinstein monofilaments for sensory assessments.

Results: 17% (2 female and 6 male) of participants deteriorated to G2D within an average of 5.5 years after RFT, where 87.5% (7) MB and 12.5% (1) PB, 37.5% (3) with ulnar and median paralysis, 12.5% (1) with only ulnar and 12.5% (1) with only median paralysis, 12.5% (1) with bilateral foot drop, and 25% (2) with the plantar ulcer.

- Among the persons who deteriorated to G2D, 87.5% (2 female and 5 male) engaged in physical labor for their earnings e.g., farmer (37.5%), day labor (25%).

- Among respondents, 10 (21.27%) persons had deterioration in sensory function after RFT (2 female and male 8) and are at high risk to turn into G2D.

Limitations: Small sample size covering only two districts.

Conclusion: Study findings suggest that a significant number of G1D persons after RFT are deteriorating towards G2D. Systematic follow-up and care for G1D persons after RFT will reduce vulnerability to become dependable on others (physically and economically). Leprosy actors should take measures to continue follow-up and ensure necessary support for G1D after RFT.

Keywords: Grade 1 disability, Grade 2 disability, Release from treatment.

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#0137/ ILCABS454

LEPROSY UNFOLDING THE IMITATOR

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Introduction: Lupus erythematosus (LE) is a disease with a broad range of manifestations. It can resemble several conditions in clinical practice. However, this "mimic" can be imitated by other diseases, when diagnostic dilemmas increase manifold

Methodology: We report series of five 5 cases, when another disease with protean manifestations, viz. leprosy was misdiagnosed as LE.

They had cutaneous and some systemic features of LE like erythematous skin rash on exposed areas, edema of face and extremities and intermittent fever and arthalgias.

On investigations some had weakly positive ANA, high ESR and mild proteinuria. Patient 1 was diagnosed as LE and treated with oral corticosteroids with poor results.. Patient 2 had skin rash over 1 month with acute exacerbation since 7 days. She was admitted to medical unit with presumed diagnosis of lupus flare and given parenteral corticosteroids. A dermatology opinion was then sought for. In patient 3 a lady with facial rash and intermittent fever undiagnosed untill a suspicion of leprosy led to skin biopsy diagnosis of leprosy confirmed. In patient 4 and 5 plaques on face was confirmed by histopathology.

On clinical examination, however, these patients had findings suggestive of multibacillary leprosy including areas of hyposthesia and thickened, tender nerves. confirmed by skin smears and histopathology.

All responded very well to multibacillary MDT and a slow tapering of steroids in the first two cases .

Conclusion: These cases strongly illustrate importance of keeping a high index of suspicion of leprosy in patients with presumed LE. . Although leprosy is declining in India, it still constitutes an important public health disease and so the need for being aware and doubly vigilant for an optimum and early diagnosis.

Keywords: Leprosy, LE, Mimic, Dermatology opinion, Vigilant

#0138/ ILCABS462

COVID 19 IMPACT AMONG PERSON AFFECTED BY LEPROSY: A 2022 RETROSPECTIVE STUDY

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Introduction: Since March 2020, Bangladesh experienced two waves of COVID-19, and associated lockdowns. Anecdotal evidence suggested that COVID-19 exacerbated the everyday challenges faced by the people affected by leprosy.

Goal: To understand the impact of COVID-19 on the people affected by leprosy in Bangladesh, in terms of their access to health services, financial health care costs, stigma and mental health.

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Patients / material and methods: A survey with people affected by leprosy in one District, with all known patients with grade 2 leprosy-related disability (G2D) in one District in Bangladesh, and a stratified simple random sample from sub-districts of other patients. Descriptive statistics and logistic regression were used to explore risks to poor hospital access and spending on health care.

Results: Among 489 participants, 19.5% and 30.2% were affected by grade 1 (G1D) and G2D, respectively. Overall, 63.3% reported problems with accessing hospital which varied across subdistricts, pointing to structural problems, and 63.7% spending own funds on hospital care. Spending on health care was independently associated with G2D (AOR=1.97, 95%CI 1.04-3.75), problems accessing hospital care (AOR=4.22, 95%CI 2.75-6.48) and poorer health (AOR=1.78, 95%CI 1.31-2.43). Stigma and depression were highly correlated with problems accessing hospital but not with spending on health care. Apart from being assocaited with problems accessing hospital, G2D was also highly associated with severe poverty (income under US$22.5/month), self-reported poor health, stigma and depression.

Limitations: Gender-sensitive questions on mental health issues were not captured.

Conclusion: The pandemic disproportionally affected people with leprosy-related disabilities. They faced barriers accessing hospitals and were more likely to spend their own funds on health care, with possible mediating effects of the feeling of shame / stigma, depression and poverty.

Keywords: Covid 19 impact, Access to health service, Financial cost, Stigma, Mental health

#0139/ ILCABS507

LEPROSY IN CHILDREN – A RETROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE IN SOUTH INDIA

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Introduction: Hansen's disease (HD) persists to be a major public health problem in developing countries including India. Leprosy in children is an important indicator of disease transmission and reflects the failure of the health system to control the disease in the community.

Objective: To study the clinicoepidemiological pattern of leprosy among children.

Methods: A retrospective, hospital-based study was conducted in the Dermatology department of a tertiary care center in south India. The clinical profile of patients (≤18 years), diagnosed to have HD between September 2008 and May 2022 (14 years) were retrieved. The diagnosis of leprosy and classification into paucibacillary (PB) and multibacillary (MB) forms were done according to WHO guidelines and further subdivided as per Ridley-Jopling classification.

Results: There were 35 children from various states of India, with a male to female ratio of 4:3. The age at diagnosis ranged from 4-17 years (mean-9.7 years). Fourteen (40%) were PB and 21 (60%) were MB. There were 5 (14.3%) tuberculoid, 20 (57.1%) borderline-tuberculoid (BT), 8 (22.9%) borderline-lepromatous (BL) and 4 (11.4%) lepromatous (LL) cases. Thirty-two (91.4%) presented with skin patches, of whom 12 had >5 patches. The 3 children without patches presented with erythema nodosum leprosum (ENL) and 1 had pure neuritic-HD. Ten children (28.6%) had type 1 lepra reaction (BT-7, BL- 3) and 6 (17.1%) had type 2 lepra reaction (BL- 3, LL -3), WHO grade-2 deformity was seen in 7 (20%). Skin smears were positive

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in 11 (31.4%) where bacteriological index ranged from 1+ to 4.5+ (mean-2.5+). Seven (20%) reported exposure to a known contact.

Limitations: Retrospective study, lack of follow-up data

Conclusions: The high percentage of MB cases, skin smear positivity, and deformity in our cohort identifies our shortcomings in leprosy control and the need to continue leprosy control activities vigorously to reduce the disease burden.

Keywords: Leprosy children, Paediatric leprosy

#0140/ ILCABS520

CLINICAL, HISTOPATHOLOGICAL, AND BACTERIOLOGICAL ASSESSMENT OF PERSISTENT SKIN LESIONS (PSL)IN TREATED CASES OF HANSEN'S DISEASE

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Since the introduction of multidrug therapy, more than 16 million Hansen disease patients have been treated and a large number of disabilities/morbidities prevented. however, the improvement in skin lesions is variable and in a subset of patients, the skin lesions do not resolve completely or remain unchanged, despite a full course of treatment. and this is a cause of concern to the patient and their relatives as they feel that they have not been cured of the disease.

Objectives and methods: In this cross-sectional single-center study, we tried to ascertain the cause of persistence by studying the clinical,-histopathological, bacteriological, and drug resistance patterns in these patients.

Results: Out of the 238 leprosy patients who visited the leprosy clinic during the study period, 35 patients had persistent skin lesions post completion of MDT. Male predominance was observed and the majority of the patients were in the age group of 18-30 years. Borderline tuberculoid was the most common clinical spectrum observed (71.4%) and the majority of the patients had persistent lesions over photo-exposed sites. The mean granuloma fraction before treatment was 14.7 which was reduced to 5.29 post-treatment and lepra stain positivity also decreased from 20% (pre-treatment) to 5.7% (post-treatment). Patients with high initial BI showed the presence of granuloma even after treatment Despite being SSS negative post-treatment, four patients (11.8%) were noted to have drug resistance (3 to rifampicin and 1 to dapsone).

Limitation: small sample size and cross-sectional study. Some patients received PB-MDT from other centers and pre-treatment biopsy and SSS was not available.

Conclusion: Patients with PSL after completion of MDT should be followed up and undergo a histopathological and bacteriological assessment at regular intervals to monitor the disease activity, relapse, and drug resistance.

Keywords: Persistent skin lesions, RFT, Drug resistance, Autoimmunity

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#0141/ ILCABS533

DIGITAL CARE FOR PEOPLE WITH LEPROSY COMPLICATIONS IN COVID-19 PANDEMIC IN BANGLADESH

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Introduction: Annually 2500 persons suffering from leprosy complications require hospitalized care, provided by 6 leprosy hospitals in 5 districts. Usually, leprosy complication care is difficult to access due to limited-service provision and distance, which creates delay in service and financial burdens for people with leprosy complications. Hospital care is becoming more limited due to leprosy expertise, and funding. Moreover, COVID-19 exacerbated the existing problem of accessing complication care.

Objective: To measure the result of complication management care provided digitally to people with leprosy complications.

Materials & Method: The Leprosy Mission International Bangladesh (TLMIB) and ALO, a national-level Leprosy Peoples Organization (LPO) jointly implemented an intervention "Digital Leprosy Complication Care" in 11 districts during COVID-19. It was a virtual approach to support persons with leprosy ulcers and follow-up through engaging family and local LPO staff by digitally connecting with medical personnel of TLMIB.

Results: Field workers visited persons with leprosy complications at home and used digital video calling platforms like WhatsApp and Imo. Service provided digitally to 120 persons with leprosy complications and continued follow-up support with the persons and families for measuring progress and mental support. Digital care and medication were administered in front of an eligible family member for assisting in an emergency or contact a medical expert. TLMIB doctors received about 300 calls from service users. 70% of recipients expressed improvement and practising self-care. Reduced hospitalized admission, travel burden and cost, suffering and mental risk for family detachment.

Limitations: Travel restrictions in COVID-19.

Conclusion: Digital care created cost-effectiveness and time-saving services with limited resource persons. In addition, diversified services can be offered and experts can connect with women, aged and people living in remote areas. Learning from COVID-19, digital care for leprosy can contribute to both service providers and receivers from various perspectives.

Keywords: Digital care, Persons with leprosy complications, COVID-19

#0142/ ILCABS543

LEPROSY IN CHILDREN

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae, representing a public health issue in some countries.The child proportion among newly detected cases of leprosy is a strong

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indicator of continued transmission of the disease and one of the main targets of the current World Health Organization strategy . Peripheral nerve involvement, which increases the chance of deformities, a serious problem, especially if one considers the age of these patients.

Objective: To describe the profile of all child cases of leprosy with disability and the outcome of the disease .

Method and material: Data was collected from Medical Records Department from period of2017-2022 of all children age up to 14yrs who came for leprosy treatment and analyzed on various aspects of gender, BI, disability grade, reaction, Nerve function impairment and outcome of treatment .

Result: Out of 4838 new and partially treated cases who were started and continued with MDT 311(6.4%) were child cases. Male and female ratio was 1.5:1. Grade 1 disability were 9 and2 disability were 22 .Type 1Reactions and Neuritis were 32 and Type2 reaction were only2 and NFI were 21.Bacteriological index of 45 children were positive and 11children's BI were 4+or more than 4+ .

Among 31 children with disability,10 children completed MDT course, 1 was under treatment,4 were taken treatment from primary health care centre and defaulters were 16 .Among RFT -7(70%) patients showed improvement and 3had no.1 child who was under treatment and 2 defaulted cases also showed improvement

Limitation: this was a retrospective study and data may not be as robust as prospective studies.

Conclusion: Finding positive cases among children is serious concern and needs immediate attention. Early diagnosis and treatment is essential to prevent disabilities and deformities, and reduce the physical, psychosocial, and economic burden of the

Keywords: Children, Disablity, Reactions, Bacteriologicalindex, MDT

#0143/ ILCABS545

ERYTHEMA NODOSUM LEPROSUM IN HISTOID LEPROSY: A SERIES OF SIX CASES

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Introduction: Histoid Hansen's disease is an unusual emerging variant of leprosy. It assumes even greater importance, especially in the national leprosy eradication era in being a reservoir of infection as a result of high lesional mycobacterial load. The diagnostic dilemma may be further compounded when preceded by the rare occurrence of erythema nodosum leprosum (ENL) in this subset.

Objective: The objective of this case series is to identify the number of cases of erythema nodosum leprosum in Histoid leprosy, the risk factors, their varied presentations and management.

Patients: This is a retrospective observational study of six cases of Histoid Hansen's disease who presented with erythema nodosum leprosum (type 2 reaction).

Results: Five patients were de novo and one was treated with dapsone monotherapy. Three patients presented with ENL at their initial presentation, while others had started treatment for leprosy. All the patients were started with multibacillary-multidrug therapy. Four patients were managed with thalidomide along with oral steroids. One patient had hospital admission for laryngeal edema in ENL and emergency management.

Limitations: The number of cases in the present series is limited.

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Conclusion: Histoid leprosy is a rare form of multibacillary leprosy with unique clinical and histopathological features. It represents probable resistant bacilli and highly active lepromatous process. Increased frequency of occurrence of Histoid leprosy with ENL pose a problem to early diagnosis and further increases community spread. Therefore, clinical suspicion, early diagnosis and management of these cases are important for leprosy eradication.

Keywords: Histoid, Erythema nodosum leprosum, Laryngeal edema

#0144/ ILCABS552

A CONFIRMATION STUDY OF DERMOSCOPIC FINDINGS BY COMPARING LESIONAL VERSUS ADJACENT NORMAL SKIN

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Introduction: Leprosy is characterized by cutaneous lesions, peripheral nerve thickening and positive slit skin smear (SSS) for acid-fast bacilli. Dermoscopy is a noninvasive modality, aiding in diagnosis of leprosy, complementary to SSS and biopsy. Clinically lesions can range from single to multiple, hyperpigmented or hypopigmented or erythematous, patch to plaque and nodules. Although lesions improve, it can persist long after completion of treatment.

Our study compares leprosy lesions with adjacent uninvolved skin which aids anatomical matching, thus validating dermoscopic findings in pre/during/post-treatment patients.

Objective: To confirm definitive dermoscopic findings of all spectra of leprosy lesions (before treatment, during treatment and post treatment) by comparing with adjacent uninvolved skin.

Materials and Methods: This prospective, cross-sectional study was conducted in dermatology department of a tertiary care hospital in endemic belt of leprosy for one year. All biopsy proven cases of leprosy before treatment, on treatment and released from treatment were included in the study. In each patient lesion and perilesional uninvolved skin were dermoscopically evaluated.

Results: The study included 40 patients. White structureless areas and decreased pigmentary network were invariably present in all patients. Treatment naïve patients and patients with initial months of treatment additionally showed reduced skin markings, prominent white dots, decreased hair density (more vellus-like fine hair especially in borderline spectrum). Notably, lepromatous spectrum showed pinkish-orange structureless areas. Diffuse scaling and persistence of decreased hair density was specific to post treatment patients.

Limitation: Shorter duration limited the study's potential to evaluate the same patient from the time of diagnosis till follow-up after treatment.

Conclusion: To the best of our knowledge, this is the first study which compares dermoscopic study of lesional with adjacent normal skin, along with evaluation of lesions post-treatment. Our study contributes to newer potential of dermoscopy and delve deeper into the age-old disease of leprosy.

Keywords: Dermoscopy, Leprosy, Lesional versus Normal Skin

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#0145/ ILCABS557

IMMUNE ZONES ZONES IN LEPROSY : A CLINICO-EPIDEMIOLOGICAL STUDY

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Introduction: Leprosy affects mainly those areas of the skin, which have a relatively lower temperature and are more exposed to trauma. Certain zones such as scalp, palms and soles, genitalia, groins, axillae, eyelids, transverse band of skin over lumbosacral area, and midline of back and perineum have been described to be immune to the development of lesions in leprosy. The reason has been attributed to the relatively high local temperature.

Objectives: The study was undertaken to evaluate the prevalence of involvement of immune zones in leprosy and to assess the clinico-epidemiological characteristics of the disease in patients presenting with immune zone involvement.

Material and Methods: 115 leprosy cases were screened for involvement of immune zones in this study. Detailed history, clinical examination, slit-skin smears were carried out on all patients. Those cases presenting with lesions over immune zones were further evaluated for clinical and epidemiological characteristics of disease process.

Results: Immune zone involvement was detected in 31 of 115 cases (27%) with male preponderance (80%). Majority of patients (64%) had lepromatous leprosy followed by borderline tuberculoid (22.5%) & borderline lepromatous (31%). Palms were the commonest site of involvement (74% of cases) followed by Soles (58%), Lumbosacral(55%), Scrotum (45%), Eyelids (19%), Scalp (16%), Genitals (13%) and Groin (3%). Involvement of axilla and perinium is not seen.

Limitations: Skin biopsies were taken to confirm the diagnosis but were not taken from the affected immune zones.

Conclusion: It is not uncommon to find cutaneous lesions of leprosy on unusual sites. However incidence of lesions in these regions is relatively less, especially over axilla and groin. Hence practically no area on the surface of skin is immune to leprosy. There should be clinical awareness regarding these unusual sites, which are relatively immune, rather than absolutely immune to leprosy.

Keywords: Immune zones

#0146/ ILCABS596

HISTOID LEPROSY – A CASE SERIES IN A POST ELIMINATION ERA

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Introduction: Histoid leprosy (HL) is a rare variant of lepromatous leprosy (LL) with unique histopathological findings and a characteristic bacterial morphology. Histoid leprosy (HL) is characterized by cutaneous and subcutaneous nodules and plaques on apparently normal skin. HL occurs in highly bacilliferous patients such as LL or borderline LL and indicates the reservoir of infection. We report the clinical, histopathological and bacteriological features of ten patients with de novo HL.

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Objectives: To evaluate and estimate the clinical aspect of histoid leprosy

Patients / Material and Methods: A cross-sectional study was carried out in our OPD after taking approval from the institutional ethical committee.

Study period: One year (May 2021to june2022).

Inclusion criteria: Patients with histoid leprosy aged 18-50 years who gave voluntary consent.

Results: Our study included 10 patients presented with asymptomatic skin papules on the face and trunk over a couple of years. Their past medical and family history was non- contributory. There were multiple, discreet, shiny, dome-shaped, skin-coloured to erythematous papules and nodules are seen on the face, trunk and extremities. Slit skin smeared showed the bacteriological index of 5+. Skin biopsy was done, and histopathology revealed a sub-epidermal grenz zone under atrophic epidermis and a collection of histiocytes in a whorled pattern in the dermis. A few macrophages are seen in the dermis

Limitations: no conflict of interest

Conclusion: Occurrence of de novo cases of HL from a non-endemic area may pose problems of delay in the diagnosis and threat in the process of eradication of leprosy. It raises the question of the efficacy of conventional duration of multidrug therapy in some patients, thus necessitating studies to closely monitor or follow-up these cases for relapse or transmission of disease among close contacts and measures to control them.

Keywords: Histoid leprosy

#0147/ ILCABS599

ANALYSING PROGRESSION OF NEUROPATHY IN LEPROSY USING NERVE CONDUCTION STUDIES: A PROSPECTIVE COHORT OF 72PATIENTS

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Introduction: Hansen's disease is a chronic infectious disease caused by Mycobacterium leprae which predominantly affects the skin and nerves. Neuropathy is often clinically silent in its evolution making early diagnosis exceptionally challenging. Clinical neurological examination is essentially subjective. Nerve conduction studies are more objective in assessing NFI.

Objectives: To carry out NCS to determine NFI at the time of diagnosis of leprosy and assessment of changes during the course of disease while on treatment.

Material and Methods: (including settings and design and statistical analysis used) Study is a prospective cohort that included 72 untreated patients of leprosy who were subjected to NCS. Parameters were assessed at diagnosis and at 3,6,9,12months of treatment. Statistical analysis was done using SPSS 21.0

Results: Sensory involvement (43.7%) predominated over motor (14.8%) involvement and the observation was statistically significant (P<0.001) at all intervals. The sural nerve (49.3%) and Ulnar nerve (24.3%) were most frequently affected sensory and motor nerves respectively. Velocity was the most commonly affected parameter in both motor (75%) and sensory (68.2%) nerves. In follow-up studies, improvement in parameters was seen more in motor nerves than in sensory nerves but the observation was not statistically significant (p=0.431 & p=0.945 respectively) at the end of one year. The sural nerve showed worsening

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(p=0.479). Comparison of mean values showed both significant improvement and worsening of various parameters.

Limitations: Patients selected in the study were predominantly males and they had a narrow age bracket.

Conclusions: Neuropathy in leprosy is complex and needs to be regularly monitored. As a single test NCS is a very useful objective method to assess a peripheral nerve in leprosy. When used at regular intervals NCS will help us to pick up NFI early thus preventing deformity and disability.

Keywords: Hansen's disease, Nerve conduction studies, Nerve function impairement

#0148/ ILCABS600

A CLINICO-DEMOGRAPHIC STUDY OF LEPROSY IN CHILDHOOD: 10-YEAR DATA FROM A TERTIARY CARE CENTER IN NORTH INDIA

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Introduction: As we aim for a leprosy-free world by 2030, childhood leprosy is important regarding both transmission of disease and performance of leprosy control programs.

Objectives: To study clinico-demographic trends of childhood leprosy at a tertiary care hospital in North India during 2012-2021

Methods: A retrospective study was undertaken to analyze the clinic records of children with leprosy less than or equal to 15 years registered at the leprosy clinic of our institute over a 10-year period. Demographic and disease characteristics including age, sex, history of contact, duration of disease, clinical pattern, reactions, disabilities, relapse, timing of reactions, persistence of skin lesions and presence of BCG scar were noted followed by a descriptive analysis.

Results: 1083 cases of leprosy were registered during this period; 50(4.62%) were children below age of 15. Median duration of symptoms before presentation was 12 months(1 to 96 months range). A high proportion of MB cases, 17 out of 50(34%) was seen. Positive family history of leprosy was noted in 10(20%) cases. Reactions were seen only in 6(12%) patients and there was an equal proportion of type 1 (3/6) and type 2 (3/6). Slit-skin smear was positive in 9(18%) patients. Majority of the patients received WHO MDT-MBR(multibacillary) for children. Disability was seen in 14 (28%) cases; 11(22%) had grade 2 disability. The mean duration of follow-up was 10.88 months after RFT. Persistent skin lesions were seen in 11(22%) cases. BCG scar was present in 39(78%). Out of the total 11 unvaccinated children, 10 were of lepromatous spectrum.

Conclusions: Although there has been a decline in the prevalence of childhood cases, the proportion of MB cases and smear-positive cases are increasing in children and the disability rate continues to be high. BCG vaccination seems protective against multibacillary leprosy, its coverage needs improvement in leprosy endemic countries.

Keywords: Childhood leprosy, Disability, BCG, Leprosy reactions

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#0149/ ILCABS605

"MULTIBACILLARY LEPROSY AND ASSOCIATED IMMUNOLOGICAL REACTIONS IN CHILDREN, EXPERIENCE AT A TERTIARY CARE HOSPITAL"

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Introduction: Despite significant improvement in leprosy treatment since the introduction of Multi bacillary multi drug therapy (MB-MDT) more than three decades ago the global disease burden remains high and detection of new cases occurs every year among all age groups including children. Childhood Leprosy has an important bearing on the epidemiology of the disease and reflects the level of control in a community. Immunological reactions are an important aspect of leprosy that significantly impact the course of the disease and the associated disability.

Aims and Objectives: To describe the clinical epidemiological and immunological features of leprosy in children (<16yrs)

Materials And Methods: Retrospective Descriptive Study at DVL OP, in the time period of January2019 to January2022 in children with a confirmed diagnosis of Leprosy

We assessed socio demographic variables and variables of clinical interest. Contact investigations were done additionally patients were evaluated for immunological reaction during and after one year of completion of treatment.

Results: We identified 69 children most were between the ages 10-16yrs Clinically Multibacillary Leprosy was the most common type identified (53.6%) with a slight male preponderance. Immunological reactions were observed in 19 cases (23.3%) with ENL being the commonest (84.2%). History of contact was present in 17 children (24.6%)

Limitations: Owing to retrospective nature data could only be collected from patients whose records were available, nonetheless this can serve as baseline data to assist policy makers to institute interventions to interrupt transmission.

Conclusion: As found in our study high prevalence of childhood leprosy demonstrates ongoing transmission of *M. Leprae* in the community. Its frequency in early adolescence, predominant clinical forms, reactions and disabilities demonstrates the need for early detection, diagnosis, treatment and contact screening of cases to reduce the burden of the disease and sustain elimination.

Keywords: Childhood leprosy, Immunological reactions, Multibacillary leprosy

#0150/ ILCABS607

IMPACT OF COVID-19 PANDEMIC ON HOSPITAL ATTENDANCE, TREATMENT COMPLIANCE AND FOLLOW-UP OF LEPROSY PATIENTS AT ICMR-NATIONAL JALMA INSTITUTE FOR LEPROSY & OTHER MYCOBACTERIAL DISEASES, AGRA

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Introduction: Leprosy eradication is a challenge despite the commitment of the Government of India through National Leprosy Eradication Program. COVID-19 pandemic from March-2020 and lock-down

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restrictions disrupted the patient's visits to our tertiary care hospital for diagnosis, treatment, physiotherapy, rehabilitation and follow-up services. The data in hospital record for pre-COVID-19 and during pandemic was collected and analyzed.

Description: The collected data during April-2019 to March-2020, a year prior to lock-down, average monthly 110.66 new leprosy cases were diagnosed with highest 173 in July 2019 and lowest 68 in the month of March-2020. The records of the visit from April-2020 to March-2021 shows the average monthly new leprosy cases reduced to 55.08 with highest 92 recorded in March 2021 and none reported during the lock down as an impact of pandemic. The number of follow-ups of registered leprosy patients post-lock-down exhibits more perturbing picture with average 343.9 patients reaching hospital for once-a-month supervised doses and follow-up prior to COVID in 2019 reduced to only 27.5% averaging around 94.25 monthly patients. However the hospital outreached to the missing follow-up patients and sent the MDT to eligible 250 patients by post. As recorded in clinical histories, restricted public transport was the most common reason behind reduced access to care.

Conclusion: In spite of challenges and limitations, the efforts were made by the institute to ensure treatment continuity and identification of lost to follow-up patients but that could only minimally mitigate the impact leaving much of patient population without access to care. We have learnt that tele-health works well for certain appointments like once-a-month supervised doses for otherwise healthy patients from far-flung places.

Keywords: Leprosy, COVID-19 pandemic, Treatment, Hospital, Telehealth

#0151/ ILCABS609

EVALUATION OF ALTERED PATTERNS OF TOUCH SENSITIVITY IN THE DIAGNOSIS AND MONITORING OF LEPROSY USING THE SEMMES-WEINSTEIN MONOFILAMENTS

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Background: Leprosy neuropathy is the most common peripheral neuropathy of infectious etiology worldwide; it is characterized as asymmetric and focal multiple mononeuropathy. Semmes-Weinstein monofilament (SWM) test is a simple method to assess sensory nerve function.

Methods/Results: In this prospective cohort study, a dermatologist carried out hands and feet tactile sensitivity test with SWM in 107 multibacillary leprosy patients at diagnosis and in 76 patients at the end of treatment from 2016 to 2019. At diagnosis, 81/107 (75.7%) patients had some degree of functional disability, and 46 (43%) of them had altered SWM-test in the hands and 94 (87.9%) in the feet. After one year of multibacillary multidrug therapy, the disability decreasing to 44/76 patients (57.9%) and decreasing of the percentual of patients with altered SWM-test to 18% for the hands, and to 28.7% for the feet. At the end of treatment, the number of SMW-test points presented improvement in the hands of 22 (28.9%) patients, and in the feet of 47 (61.8%). In the hands, by SWM-test, radial nerve was significantly asymmetric, while in the feet, the difference between the sum of altered SWM-test points showed significant asymmetry when comparing both sides, highlighting the tibial nerve for the establishment of asymmetric leprosy neuropathy. In Spearman's correlation analysis, a positive correlation with statistical significance was observed between

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the number of hands and feet SWM altered points at diagnosis and the degree of disability at diagnosis (0.69) and at the end of the treatment (0.80).

Conclusion: The patterns of hands and feet tactile sensitivity at diagnosis and their modifications with anti-leprosy MDT define the bacterial etiology of neuropathy, an important tool for the clinical diagnosis and follow up of the disease, highlighting the tibial nerve findings, the most affected nerve among leprosy patients by esthesiometry, with significant asymmetry and focality impairments.

Keywords: Semmes-Weinstein monofilament, Skin sensation, Leprosy, Diagnosis

#0152/ ILCABS635

STUDY OF CLINICAL CO-RELATION OF HIGH RESOLUTION ULTRASONOGRAPHY & COLOUR DOPPLER & USG GUIDED FNAC IN PURE NEURITIC LEPROSY

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Introduction: High resolution USG provides information on morphological alteration and precise location of nerve enlargement. Colour doppler shows intra neural blood flow signifying inflammatory features.

Combination of High resolution USG and USG guided FNAC can be used as a diagnostic tool for Pure

Neuritic Leprosy, as compared to blind

Aims and objectives:

1. To co-relate the subjective clinical findings with High resolution USG of peripheral nerves in patients with clinical neural deficit.

2. To identify morphological alterations in peripheral nerve trunks of patients with neurological deficit.

3. To demonstrate AFB and pattern of inflammatory cellular infiltration in the involved nerves of the above patients

Materials and methods: Clinical evaluation was done by detailed history taking, clinical examination and investigation including; High resolution USG with Doppler, Nerve conduction study and USG guided FNAC from nerves with H&E and Fite faraco stain, and the findings were interpreted. palpatory method and FNAC combined.

Results: Out of 288 nerves examined in 24 patients, neurological deficit observed in 31(10.7%), thickness in 54(18.7%), neuritis in 17(5.9%), echotextural abnormality in 31(10.7%), endoneural blood flow in 14(4.8%), high cellularity in FNAC in 9(37.5%), AFB in 2(8.3%). Significant correlation was found between clinical thickness grading, USG thickness grading and corresponding cytological findings; clinical neuritis, USG findings of neuritis and corresponding cytological findings.

Conclusion: Clinical examination of enlarged nerves in leprosy patients is subjective and inaccurate. High resolution USG followed by USG guided FNAC provides better and more accurate tool for diagnosis of Pure Neuritic Leprosy and assiociated neuropathy.

Keywords: High resolution Ultrasonography, USG guided FNAC, Colour doppler, Pure Neuritic leprosy

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#0153/ ILCABS637

POINT-OF-CARE ULTRASOUND OF PERIPHERAL NERVES IN THE DIAGNOSIS OF HANSEN'S DISEASE NEUROPATHY

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Introduction: Hansen's disease (HD) is the most common cause of treatable peripheral neuropathy in the world that may or may not involve skin manifestations and physical examination based on simplified neurological evaluation is a subjective and inaccuracy procedure. High-resolution ultrasound (HRUS) can be used to evaluate peripheral nerves and is a validated technique of good reproducibility, permitting a detailed and precise exam. Objectives:we proposed to stablish the objective criteria of the measurements of the CSAs absolute values of the peripheral nerves and their indexes of the CSA and TpT in the diagnosis of Hansen's disease neuropathy as compared to healthy voluntaries.

Materials and methods: In municipalities from different regions of Brazil we selected at random 234 volunteer Brazilian patients diagnosed with leprosy to be submitted to peripheral nerve echography and compared to 49 of healthy Brazilian volunteers.

Results: HD assessed by HRUS is a primarily neural disease that leads to multiple hypertrophic mononeuropathy characterized by CSA values exceeding normal limits (Med CT=10.2 mm2; UT=9.8 mm2; UPT=9.3 mm2; CFFH=18.3 mm2; T=9.6 mm2) and the pattern of asymmetry (CSA>2.5mm2 with RR 13) and focality (TPT>2.5 mm2 with RR 6.4) of this thickening has higher sensitivity (76,1%) and specificity (87,8 %) for its early diagnosis that laboratory tests. Analyzing each subject, the percentage of thickened nerves detected among the total number of nerves assessed was higher among HD patients than among healthy individuals (p<0.0001). Individuals with two or more thickened nerves having a 24.1 times higher relative risk (95%CI: 6.74 to 88.98) to have HD.

Keywords: Leprosy, Hansen's disease, Neuropathy, High-resolution ultrasound, Cross-sectional area.

#0154/ ILCABS658

CHILDHOOD LEPROSY: ELEVEN YEAR RETROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE CENTRE OF DELHI

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Introduction: Leprosy being one of the oldest diseases known to mankind, childhood leprosy is a still a significant social and health problem in India. Childhood leprosy indicates active disease transmission and one of the most sensitive performance indicators of the National leprosy elimination programme (NLEP).

Objectives: To study the clinico-epidemiological profile of childhood leprosy

Material and Methods: retrospective analysis of 11 years (2010-2020) records of leprosy patients aged < 18 years in tertiary care hospital. All the cases were biopsy proven except cases having pure neuritic Hansen.

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Results: out of total 349 leprosy cases, 74(21.2%) had childhood leprosy with boy to girl ratio of 2.57:1. Distribution of the patients as per the Ridley- Jopling classification: TT 0; BT 45(60.8%); BB 0; BL 11(14.8%); LL 8(10.8%) and PNL 8(10.8%). There was one case of indeterminate leprosy. A positive family/contact history was obtained in 4(5.4%) cases. Signs of reactions were noted in 13(17.5%) patients while deformity was seen in 19(25.6%) cases.18 cases were on PB- MDT and 56 cases were on MB-MDT.

Limitations: limited data of 11 years from hospital setting.

Conclusion: The rate of childhood leprosy continues to be high. Childhood leprosy indicates active transmission of disease. Late presentation, deformity, social stigma and lack of access to adequate health facilities are the challenges to be dealt with childhood leprosy. Early detection, active search of cases, timely intervention, appropriate prophylactic measures in susceptible children, need to sustain leprosy services are the key factors to the success of NLEP. The educational and vocational rehabilitation of affected children shall be enforced to mitigate the social impact.

Keywords: Childhood leprosy, NLEP, REACTION, DEFORMITY, PB-MDT, MB-MDT

#0155/ ILCABS667

THE MANY FACES OF LEPROSY: A REVIEW OF ORO-FACIAL MANIFESTATIONS IN 100 PATIENTS

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Introduction: Leprosy is a chronic multi-systemic disease with a wide clinical spectrum. India is still observing a rise in cases which may be attributed to challenges pertaining to timely diagnosis and treatment. Oro-facial lesions in leprosy are nonspecific and are often overlooked or misdiagnosed. Also, oral mucosa may constitute an important source of transmission of bacilli.

Objectives: To analyze the occurrence and incidence of lesions occurring on the face and oral cavity in leprosy patients

Materials and methods: A cross-sectional observational study was carried out in all cases of leprosy over two year period. After obtaining consent, descriptive information regarding dermal, mucosal, neural, skeletal, and dental changes occurring on the face was noted.

Results: Of the total 100 patients, mean age was 41.86±6.1 years. 57 were new cases whereas 43 were found to be old cases. Tuberculoid spectrum comprised 12% cases, borderline 28%, lepromatous 20%, patients in reaction 26%, histoid leprosy 12%, and pure neuritic leprosy 2%.

Facial lesions were noted in 90 % of which loss of eyebrows was seen in 15, erythematous oedematous plaques in 14, diffuse infiltration of the earlobes in 10, histoid nodules in 9, saddle nose in 5, and loss of eyelashes in 4 cases.

The mucosa was involved in 30% in the form of macrocheilia in 15, fissured tongue in 10, gingivitis in 8, and intraoral lepromas in 3 cases.

Neural involvement was in the form of anesthetic facial hypo-pigmented patch in 12 cases, unilateral facial paralysis in 10, exposure keratitis in 6, and lagophthalmos in 4 cases.

On analyzing skeletal and dental changes, pre-maxillary atrophy with gingival recession was noted in 4 cases.

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Limitation: Lateral skull and full-mouth radiographs of every patient were not done.

Conclusion: Thorough knowledge of myriad clinical presentations of leprosy is hence necessary to provide optimum health care

Keywords: Leprosy, Oro-facial manifestations, Timely diagnosis

#0156/ ILCABS672

DERMOSCOPY IN LEPROSY SPECTRUM

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Introduction: Leprosy is a chronic granulomatous disease caused by mycobacterium leprae. It mainly affects skin and peripheral nerves. Ridley jopling classified the disease into 5 groups: 2 polar forms, tuberculoid and lepromatous leprosy and three borderline forms, borderline tuberculoid, borderline lepromatous and borderline borderline leprosy. India has the highest burden of leprosy in the world. Dermoscopy is a non-invasive imaging modality which is used to visualize clinical patterns of skin lesions and subsurface skin structures not normally visible to unaided eye. This can be used in the diagnosis of leprosy.

Objectives: To observe the dermoscopic features in leprosy spectrum.

Materials and Methods: 50 leprosy patients, newly diagnosed or within 6 months of MDT were included. Detailed history was taken and examination done. Dermatoscopic examination was conducted using a Dermatoscope, Dermlite-DL4 and images were saved on phone.

Results: Yellowish-orange areas and vascular structures were seen in the entire spectrum of leprosy . Tuberculoid poles of leprosy classically showed loss of hair and skin pigment along with absence of white dots as sweat glands. Lepromatous pole of leprosy on the other hand showed xerosis and scaling in the background of hypotrichosis and increased pigment-network. Leprosy reactions showed erythema and dilated vessels in the backgrounf og respective spectrum of leprosy

Limitations: Only newly diagnosed patients and those within 6 months of MDT treatment was considered for the study and hence pigmentation caused by clofazamine couldn't be studied

Conclusion: Dermoscopic study in patients with leprosy would facilitate quick and definitive diagnosis of leprosy and early institution of therapy especially in reactions.

Keywords: Leprosy, Dermoscopy

#0157/ ILCABS673

MASQUERADING PRESENTATIONS OF LEPROSY

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Introduction: Leprosy can be a great imitator, apart from the common presentations, certain uncommon clinical presentations can delay diagnosis. In those circumstances, histopathology comes to aid with accurate

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and timely diagnosis.We here present four cases having uncommon clinical presentations of leprosy where histopathology was key in establishing the correct diagnosis.

Case 1: A 24 year old male with multiple skin coloured asymptomatic papules, on HPE found to have features suggestive of BT hansens.

Case 2: A 50 year old woman with white patch over the perioral area and lips, on HPE found to be a case of BT hansens.

Case 3: A 58-year-old female presented with asymptomatic persistent swelling of the upper lip and erythematous patch on the left cheek for 3 years. Diagnosed as BT hansens on HPE.

Case 4: 75-year-old male presented with asymptomatic single annular plaque on the right elbow region for 2 months. Diagnosed to be a case of LL hansens.

Discussion: Leprosy has a wide variation in the way it affects different people. Some atypical cutaneous presentations of leprosy are reported which include a single nodule on the face,erythema multiforme-like lesion,erythema gyratum repens-like pattern,lymphadenopathy masquerading as lymphoma,histoid leprosy,Lucio leprosy,zosteriform, segmental, dermatomal leprosy. Early diagnosis is required to prevent further progression of the disease.

Conclusion: In endemic regions it is important to suspect the possibility of leprosy even in atypical presentations so as to avoid wrong diagnosis. Here we report four cases of leprosy with uncommon disease presentations. Histopathology is an important tool in arriving at correct diagnosis and thus should be done in all suspected cases.

Keywords: Atypical, Papules, Annular plaques, Lip swelling.

#0158/ ILCABS674

NEUROPATHY ASSESSMENT FOR LEPROSY USING NEUROTOUCH DEVICE : A PILOT STUDY

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Introduction: Neurotouch is a point of care screening device for peripheral neuropathy. It is a portable hand held battery operated device. It is used to evaluate small and large nerve fibres neuropathy and enable longitudinal tracking for better outcomes. Neurotouch combines the function of five different neuropathy screening devices into one tool. AI powered reports : Enables to efficiently store, manage, analyse and share test results online on secure cloud servers. Early detection and treatment of neuropathy in leprosy is important to prevent disabilities. Sensory nerve function imapirment is often the first symptom of leprosy neuropathy . It is assumed that when sensory impairment is clinically detectable, quite some damage has already been done to the nerves.

Objectives: To determine the risk of Peripheral neuropathy in Leprosy patients, using Neurotouch Device.

Materials and Methods: It was a cross sectional study conducted in Outpatient department of Dermatology at Tertiary hospital. Demographic details and clinical spectrum of patients were recorded . Neuropathy assessment done using Neurotouch device and categorised as high risk, intermediate risk and low risk. **Results:** Maximum of 9 patients were present in the age group of 31-40 years . Males were 73.3% and females

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were 26.6% . Most common clinical spectrum was Borderline Tuberculoid (70%) . Neuropathy assessment for Monofilament revealed High risk in 63.3%, low risk in 33.3% and Intermediate in 0.33%. Vibration perception showed High risk in 30%, low risk in 43.3% and Intermediate in 26.6%. Hot perception revealed High risk in 56.6%, low risk in 43.3% and intermediate in 0. Cold perception showed High risk in 76.6%, low risk in 20% and intermediate risk in 3.3%.

Limitations: Small sample size and No controls.

Conclusion: Early detection and treatment of neuropathy in leprosy is important to prevent disabilities

Keywords: Neuropathy, Neurotouch

#0159/ ILCABS675

SCLEROSIS IN HANSEN - A DIAGNOSTIC DILEMMA???

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Introduction: Leprosy is a chronic infectious disease with varied clinical manifestations. In all its stages it can mimic a great variety of other diseases, so proper history and follow up is must.

Case Series: A 48 year old man presented with multiple hypopigmented patches all over body & glove and stocking anesthesia 15 years back and was diagnosed as lepromatous leprosy with BI -4+. He was relieved from treatment after 2 years of MB MDT. Recently he presented with generalised hyperpigmentation and tightening of skin and claw hand with history of regurgitation of food and breathlessness on moderate work. Split skin smear was negative. Routine blood investigations, Chest xray, PFT, Ba swallow were normal. ANA profile was negative. biopsy showed thinned out epidermis and Dermis showing dense sclerosed tissue with paucity of periadnexal and perineural histiocytes, epitheloid cells and no granulomas. With clinicohistopathology correlation diagnosis of post Hansen morphea like sclerosis was made.

A 40 year old female presented with tightening of skin on face and forearms with single erythematous plaque over left cheek since 3 months. There was history of dysphagia, dyspnea on exertion and raynauds phenomenon. SSS was negative. ANA profile showed Ro-La positivity with raised CPK enzyme. Biopsy from plaque on cheek showed atrophic epidermis with periadnexal and perineural granulomatous infiltrate of epitheloid and langerhan giant cells in dermis. Based on clinicohistopath correlation diagnosis of Scleroderma with Tuberculoid Hansen was made.

Limitations: Small sample size because of rarity of such presentation.

Conclusion: Mechanism for dermal sclerosis in treated leprosy is not known and scarring of reticular dermis is absent in leprosy. The morphological finding of dermal sclerosis in residual lesions of treated leprosy is pitfall and can even present as de novo with Hansen. So pathologists and dermatologists should be aware of this before making a diagnosis.

Keywords: Post hansen, Morphea, Sclerosis, Tightening

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#0160/ ILCABS692

ERYTHEMA NECROTICANS – A CASE SERIES

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Introduction: Erythema Nodosum Leprosum (ENL) are immune mediated reactions interrupting chronic course and clinical stability of leprosy, occurring during/after MB-MDT,characterized by brightly erythematous tender nodules/plaques in crops. Severe ENL can become vesicular/bullous and break-down which is then termed Erythema Necroticans (ENs),mostly seen in lepromatous/borderline leprosy. Here we present 4 cases of this rare entity.

Objective: To emphasize importance of prompt diagnosis and treatment of ENs – ENL's rare variant

PATIENTS

Case 1 : 19/M had generalized deep ulcers with eschar since 2 weeks with associated intermittent fever, joint pain.On MB-MDT irregularly since 7 months.

Case 2 : 15/M K/C/O LL Hansens on 2nd packet MB-MDT, presented with constitutional symptoms and lesions s/o ENLs which ulcerated to form necrotic lesions.

Case 3 : 18/F presented with hyperpigmented multiple scars of various sizes over face, b/l upper and lower limbs since 2 months. She had features of BL Hansens on examination.

Case 4 : 50/M presented with erythematous to hyperpigmented erosions and ulcers predominantly over lower limbs since 3 months. Features were s/o BL Hansens on examination.

Slit skin smear : positive(all 4).

Histopathology : characteristic of ENs(all 4). Fite faraco positive in case 4.

3rd and 4th patients received MB-MDT.

All patients received Tab PREDNISOLONE(tapering fashion).

Our 2nd patient initially received Tab THALIDOMIDE and later METHOTREXATE.

3rd patient additionally received Tab CLOFAZIMINE.

Results: Lesions of all patients subsided with scarring.

Limitations: Limited cases reported due to single centre data.

Conclusion: Though rarely reported in literature, our centre being in leprosy belt, we came across 4 cases of ENs in span of 9 years (2013-2022). This condition is challenging to manage. Early institution of combination therapy of systemic corticosteroids, thalidomide and clofazimine helps preventing scars, occurring in ENs that add to already existing stigma.

Keywords: Erythema necroticans, ENL, Rare variant

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#0161/ ILCABS705

FREQUENCY OF ADVERSE REACTIONS TO DAPSONE IN LEPROSY PATIENTS TREATED WITH MULTI-DRUG THERAPY: A RETROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE IN NORTH INDIA

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Introduction: In 1981, the world health organisation (WHO) recommended multidrug therapy (MDT) consisting of dapsone, rifampicin and clofazimine for the optimum treatment of leprosy. Even though dapsone is an integral part of MDT, it is not devoid the risk of adverse reactions including the possibly fatal dapsone hypersensitivity syndrome (DHS).

Objectives: In this study, we have aimed to elaborate the incidence and nature of the adverse effects of dapsone therapy as a part of MDT in the leprosy patients of a tertiary care centre in India.

Material and methods: This was a retrospective observational study, in which the records of all patients who were registered in the leprosy clinic of department of dermatology of a tertiary care centre from 2010 to 2022 were screened. All patients who experienced adverse effects due to dapsone were included.

Results: A total of 1598 patients of leprosy were screened, out of which 41 patients had developed adverse reactions due to dapsone, with an incidence of 2.56% over a period of 12 years. All the patients received standard WHO recommended multidrug therapy. The most commonly observed adverse effect was deranged liver function tests (2 times above normal range) in 14 patients (overall 0.87%), followed by anemia (fall in hemoglobin>1 g/dl) in 12 patients (0.75%) including one patient with hemolytic anemia and neurological adverse effects (tremors, sedation and neuropathy) in five patients (0.31%). The incidence of DHS was 0.63% (10 patients) with the most common skin manifestation of a maculopapular rash. All the patients were subsequently administered MDT without dapsone along with standard treatment for the adverse effects, without any mortality or serious morbidity.

Limitations: It was a retrospective study, hence data collected was dependent on the accuracy of records.

Conclusion: Dapsone is a safe and essential component of leprosy treatment, with minimal adverse effects.

Keywords: Leprosy, Multi-drug therapy, Dapsone, Adverse effects, Dapsone hypersensitivity syndrome

#0162/ ILCABS740

PROFILE OF EYE PROBLEMS AMONG PEOPLE AFFECTED BY LEPROSY

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Introduction: Eye impairments among people affected by leprosy occur due to direct invasion of the bacilli in the eye, host immune response to bacilli, steroid treatment of reactions, and lack of awareness of the protection of the eyes. Eye problems increase the existing disability associated with leprosy affecting the hands and feet in an individual.

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Objectives: To assess the eye-related problems among people affected by leprosy at the time of diagnosis and post-MDT

Methodology: A retrospective study of a cohort of newly diagnosed and RFT patients attending leprosy referral centers in India from April 2019 to March 2022. The data was obtained from the patient medical records. Descriptive data are summarized.

Results: A total of 1992 (39%) and 3157 (61%) newly diagnosed leprosy patients and RFT patients attended during the study period respectively. The most common eye problem associated among both groups of patients was cataracts (303,5.9%). The proportion of eye problems and complications was similar in newly diagnosed and RFT patients, such as red eyes (1.2%), ectropion (0.16%), and corneal opacity (0.2%). However, there was a difference among patients affected with cataracts (6.38 & 5.57%), lagophthalmos (0.65 & 3.29%), and corneal anesthesia (0.30 & 2.60%).

Conclusion: Cataract was the most common eye problem among people affected by leprosy indicating the need for structured eye care services. Cataract can be identified and is not complex, they can be corrected by surgery. Early diagnosis of neuritis affecting the eye would prevent corneal anesthesia, corneal opacity, and infection of the conjunctiva and anterior chamber of the eye.

Keywords: Eye problems, Cataracts, RFT

#0163/ ILCABS744

IMPACT OF POST EXPOSURE PROPHYLAXIS(PEP -SINGLE DOSE RIFAMPICIN) IN PREVENTION OF LEPROSY IN CONTACTS OF NEWLY DIAGNOSED LEPROSY PATIENTS

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Introduction: Epidemiological studies have shown that chance of finding previously undiagnosed Leprosy patient is 10 times higher in house hold contacts of Leprosy patients than in general population and chance of finding Leprosy among neighbours and social contacts is between three and five-fold. Therefore, contacts should be main focus of future Leprosy elimination strategy..

Aim and Objectives: To assess impact of post exposure prophylaxis(PEP -single dose rifampicin) in prevention of leprosy in contacts of newly diagnosed leprosy patients.

Methods: In 2016, Maharashtra State implemented PEP programme in 16 districts of Maharashtra State on pilot basis in Leprosy Case Detection Campaign(LCDC). In this Campaign,a total of 4134 new leprosy cases were detected and 67,252 contacts were identified, among which 60,685 were given PEP -SDR as per guidelines of Central Leprosy Division. SDR (600mg) can kill 99.99% of viable bacteria. Examination of contacts done by health workers annually. Data collected and compiled by District Leprosy Officers and sent to State Leprosy Office at every month.

Results: SDR Chemoprophylaxis is shown to provide 60% protection against leprosy.

Among the 60,685 contacts (PEP recipients), a total of 8 contacts were diagnosed as new leprosy patients (6 MB, 2 PB) since the yr.2017 to 2022. New case detection among the PEP recipients was found to be 0.01%.

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Conclusion: The operational intervention of PEP among healthy household contacts seems to have an impact with definite decrease in the risk of transmission of infection among contacts.

PEP is also easy to implement and cost effective.

Keywords: PEP-post exposure prophylaxis, SDR-single dose rifampicin, LCDC-Leprosy Case Detection Campaign.

#0164/ ILCABS752

A SINGLE CENTER, OPEN LABEL PILOT STUDY TO EVALUATE THE SAFETY AND EFFICACY OF CC-11050, A NOVEL PHOSPHODIESTERASE 4 INHIBITOR, IN NEPALESE PATIENTS WITH ERYTHEMA NODOSUM LEPROSUM

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Objectives: Erythema Nodosum Leprosum (ENL, also called Type 2 Reaction) is an immunological complication occurring before, during or even years after curative MDT in those affected by borderline lepromatous or lepromatous leprosy. While prednisolone and thalidomide are recognized treatments for ENL, the majority of ENL patients require long term treatment, both drugs have significant side effects, and thalidomide is restricted or prohibited in some countries. Phosphodiesterase 4 inhibitors (PDE4i) are a class of compounds that affect cytokine production, neutrophil function, and antigen processing and presentation; therefore, a PDE4i could have potential for treating ENL. CC-11050 is a non-steroid, anti-inflammatory, PDE4i drug with few observed side effects that was previously trialed and shown to be well tolerated in humans as well as tested against other inflammatory skin conditions.

Methods: A single center, Phase 2, open-label trial was performed to evaluate the safety and efficacy of 200 mg of CC-11050 treatment twice daily over 28 days in 10 males with new or recurrent episodes of ENL. The ENL International Study Group (ENLIST) ENL severity scale alongside standard clinical and laboratory examinations were performed.

Results: All 10 enrolled participants completed the 28 daytreatment period with at least one year follow-up. Participant ages ranged from 18 to 54 years, with 5 presenting with acute and 5 with recurrent ENL episodes. The average ENL severity score declined from 13+/-3.8 on Day 0 to 2.2 +/- 2.2 on Day 28. Altogether, 16 mild or moderate adverse events were reported during the trial period.

Conclusion: The last therapeutic agent for ENL treatment was developed about 50 years ago; and there is an imperative need to identify new therapies against ENL with fewer side effects. In this trial, CC-111050 was well tolerated and effective for resolving an ENL episode with 28 days treatment.

Keywords: Erythema Nodosum Leprosum, Leprosy, CC-11050, Phosphodiesterase 4 Inhibitor

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EPIDEMIOLOGY AND CLINICAL FEATURES OF LEPROSY IN THE ERA OF COVID

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Introduction: Leprosy also known as Hansen disease is a chronic granulomatous infection caused by a Bacillus Mycobacterium Leprae.It primarily affects the skin and peripheral nerves, can also affect muscles, bones,eyes testes and other internal organs.

Objectives: This is a descriptive retrospective study done to assess the clinical presentation of leprosy in the past 2 years during covid pandemic.In addition to observe the diverse clinical features, the study was done to observe the effect of covid 19 on leprosy.

Materials and Methods: This is a retrospective observational study over the period of 2 yrs from march 2020 to march 2022, done in a tertiary medical centre in South India.Patient information and data including age, sex,nationality,area of residence,type of the disease and signs and symptoms at the time of diagnosis were collected from the registry.The diagnosis of leprosy was based on clinical manifestation,Slit skin smear and histopathological examination.Qualitative variables are categorized and presented as frequencies and percentages.Quantitative variables are presented as mean and standard deviation.The data were analysed using SPSS version 16.Ethical committee clearance was obtained.

Results: A Total of 31 patients were diagnosed with leprosy during the 2 yr period from march 2020 to march 2022.Out of 31 patients 5 were females(16.1%) and 26 were male(83.8%).Majority of them were in the 21 to 50 yr age group(90%).Only one patient is less than 18 yrs(3.22%) and 2 patients were more than 50 yrs(6.45%).Majority of them were from West Bengal(Eastern part of INDIA).

Ridley and Jopling's system was used for classification. Borderline tuberculoid affected the highest number of infected subjects (41.93%), followed by lepromatous leprosy(35.4%).Other types were Boderline Borderline(6.45%),Borderline lepomatous(6.45%),pure neuritic(6.45%)and Indeterminate(3.2%). Patients presented with various clinical features ranging from hypopigmented macules to nodules,ulcers, deformities and loss of sensation. 80 % of the patients presented with skin manifestations and Neurological involvement was present in all.

Keywords: Leprosy, Multi-bacillary, Lepromatous leprosy, Covid

#0166/ ILCABS792

ATYPICAL PRESENTATIONS OF LEPROSY: CASE SERIES

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Introduction: Leprosy is a great mimicker with varied presentations. Atypical presentations are not uncommon and may present diagnostic challenges. In those circumstances, histopathology comes to the rescue by aiding with accurate and timely diagnosis. We report series of four cases having atypical presentations.

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Case Series: First case 37 years male presented with erythematous oedematous lobulated plaques all over body for 4 months mimicking CTCL. No glove and stocking anaesthesia and neuritis present. Second case 54 years male presented with multiple plaques with central depression mimicking perforating granuloma annulare over the hands, legs, trunk and abdomen for 4 months. No glove and stocking anaesthesia and neuritis present. Third case 59 years male of RFT Hansen's disease, patient presented with multiple pus filled lesions over arms, neck, trunk and abdomen for 2 days resembling AGEP. Fourth case 38 years female presented with nontender upper lip swelling for 4 months mimicking granulomatous cheilitis/angioedema. Later presented with hypoesthetic patch over the submental region. The diagnosis in these cases were confirmed by histopathology followed by slit skin smear.

Limitations: Biopsy not done for fourth case because of consent issues

Conclusion: In endemic areas for leprosy, it is imperative to keep in mind the diverse presentations of leprosy so as to prevent delay in diagnosis and start treatment at the earliest .

Keywords: Atypical cases, Leprosy, Cutaneous T-Cell Lymphoma, Perforated granuloma annulare, Acute generalized eosinphilic pustulosis, Granulomatous cheilitis

#0167/ ILCABS804

RETROSPECTIVE HISTOPATH PROVEN HISTOID LEPROSY: CASE SERIES OF 12 PATIENTS : CLINICAL, EPIDEMIOLOGICAL, ASSOCIATED SYMPTOMPS, REACTIONS AND COMORBITIES.

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Introduction: Rare variants of leprosy pose a diagnostic challenge and histoid leprosy is one such form of disease with unique clinical and histopathological features. Histoid leprosy is a presentation of multibacillary leprosy, which exists on lepromatous spectrum. De novo cases also exist.

Objectives: To study the epidemiological and clinical characteristics of patients, associated comorbidities and course of disease during treatment.

Methods: Undertook this study including patients registering with the leprosy clinicfrom 2015 to 2018. Data regarding demographic details, clinical features, treatment, complications and course following treatment were maintained during treatment.

Results: 12 cases registered during 3 years

male preponderance with a male/female ratio of 4 : 1.

The anatomical areas of involvement: thighs, buttocks, arms, forearms and legs in descending order of frequency.

De novo histoid lesions: appeared in 4 patients

Contact history: found in 3 out of 12 patients

MORPHOLOGY of nodules: skin coloured, erythematous mostly on normal skin . ERYTHEMATOUS Plaques were also seen.

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average B.I 5+ and M.I (10%)

ASSOCIATED SYMPTOMS: pruritus, madarosis, infiltration of ear lobes (4/12), paraesthesia, oedema of legs (5/12)and joint pain

nerve involvement: ulnar nerve most commonly involved

Type 2 reaction on start of MDT seen in 3out of 12 patients.DEFORMITY: Grade 1 deformity in 3/12 patients

completion of 1 year of MDT was in 100% of cases . Responsement to treat : subsidence of most histoid lesionion, marginal reduction in B.I

Limitation: Patients lost to follow up after MDT, long duration of case series, small number of subject, registered at multiple centres, overlap of data

Conclusions: Due to unusual and rare presentation, diagnosis is missed, and consensus is missing on treatment and course of disease, this case series sheds a light and will help in better understanding of rare entity

Keywords: Histoid leprosy, Case series, Morphology and epidemeology

#0168/ ILCABS838

ENIGMA OF THE GRANULOMA

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Introduction: Hansen's disease is often misdiagnosed due to its varied symptoms. Although a masquerader, once diagnosed treatment is easy and gratifying. We present 3 cases of leprosy with unusual presentation.

Patients:

Case 1:19y/o/male presented with discrete asymptomatic papulonodules and swelling on bilateral feet since 9 months with inconclusive histopathology. Subsequently developed shiny papules over the back with thickening of peripheral nerves and impaired temperature sensation raising suspicion of Histoid leprosy. Histopathology revealed a pseudoencapsulated mass with spindle shaped histiocytes in storiform arrangement, lymphocytes and giant cells confirming this diagnosis.

Case 2: 42/y/ofemale presented with multiple ulcers on the dorsum of her right hand with swelling and tenderness of middle finger with no response to antibiotics. This raised a suspicion of leprosy and examination revealed thickened nerves and reduced temperature perceivability. Histopathology depicted several infiltrating perineural granulomas confirming diagnosis of Borderline Tuberculoid Hansen in reaction.

Case 3:22/y/o pregnant female presented with multiple, itchy, nodular lesions over dorsum of right foot since 8 months, not preceded by trauma and unresponsive to antibiotics. There were no discharging sinuses or lymphadenopathy. Sensory and motor examination were normal and histopathology was inconclusive. Repeated sections revealed diffuse mixed cellular infiltrate with foamy macrophages suggestive of infective granulomatous condition. Slit skin smear revealed weakly positive morphological index. Mycobacterial and fungal tissue cultures were negative. Tissue for Ziehl-Neelsen staining revealed plentiful weakly acid fast bacilli in cluster confirming diagnosis of leprosy.

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Results: Multibacillary treatment in all cases showed improvement.

Conclusion: Leprosy is caused by acid-fast bacteria, Mycobacterium leprae. As new case detection rate in India has fallen, its index of suspicion has decreased. Atypical presentation in leprosy commonly poses a challenge. Nerve examination is is always a must and one must rely on their clinical acumen and histopathological diagnosis for starting treatment.

Keywords: Masquerader, Papulonodules, Ulcers, Perineural granuloma, Ziehl-Neelsen stain

#0169/ ILCABS852

CHILDHOOD LEPROSY-A CLINICO EPIDEMIOLOGICAL STUDY FROM A TERTIARY HEALTH CENTRE

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Introduction: children are believed to be the most vulnerable group to most of the infectious diseases and they are vulnerable to mycobacterium leprae due to their weak immunity.childhood leprosy is an indicator of active disease transmission in the community and can be considered an index of the prevalence of disease.

Objective: To know the incidence,duration,spectrum,reactions and deformities in childhood leprosy during the period from may 2018 to may 2022.

Materials and Methods: A retrospective analysis of all leprosy cases <15 years during last 4 years (may 2018 to may 2022) attending the outpatient of our hospital was carried out.detailed history and examination findings recorded were analysed.The age at onset,domicile,history of contact with leprosy case,gender,other relevant symptoms were noted.detailed note of the examination findings like number of skin lesions,peripheral nerve thickening,signs of reaction and deformity.Histopathology findings were correlated.cases were classified according to the Ridley-Jopling classification.

Results: 13 cases of childhood leprosy were recorded out of the total 93 leprosy cases during the study period.multibacillary cases were 4,while paucibacillary cases constituted 9.history of familial contact was elicitable in 2 cases. Male female ratio noted was 1.6:1(m-8,f-5)majority of cases belonged to tuberculoid spectrum .single lesion was noted in 10 out of 13 patients.the distribution of lesions in the decreasing order of frequency were extremities,face followed by trunk.Histopathology showed granulomatous reaction in 6 patients. only one patient developed type 1 reaction.no deformity was noted.

Limitations: limitation of the study included retrospective design.

Conclusion: The rate of childhood leprosy continues to be high.Lack of proper access to health facilities,ignorance among the general population,high susceptibility due to immature immune system etc makes this population highly vulnerable.childhood leprosy still continues to a significant proportion of the total case load,denoting the continuing active horizontal transmission of leprosy.

Keywords: Childhood leprosy, Retrospective

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#0170/ ILCABS857

STUDY OF DRUG RESISTANCE IN *M. LEPRAE* ISOLATES FROM REACTIONAL LEPROSY PATIENTS

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Introduction: Drug resistance is a potential disrupter of any communicable disease. Reactions occur in leprosy patients all of the sudden during treatment with MDT and it is known to occur due to upgradation of cell mediated immunity. Recently, many reports have reported drug resistant strain of *M. leprae* in reactional cases in India.

Objective: To find out trend of drug resistant strains of *M. leprae* in reactional cases.

Methods: We screened a total of 56 reactional (T1R/T2R) cases from The Leprosy Mission hospitals in India. Slit- skin scrapings were collected from all the subjects. DNAs were extracted and drug resistant testing was done by PCR targeting genes associated with drugs (Rifampicin, Dapsone and Ofloxacin) in *M. leprae* followed by Sanger sequencing. Detailed profiling will be also presented at the conference.

Result: We observed resistance to Rifampicin in 3/56 (5.3%), to Dapsone in 6/56 (10.7%) and to Ofloxacin in 5/56 (8.9%) patients from TLM hospitals in India. Among them 2/56 (3.5%) were found to be resistant to dapsone and ofloxacin.

Limitation: Small sample size.

Conclusion: Based on the above findings we recommend setting up of a mechanism for drug resistant surveillance in reactional cases along with relapse cases to stop the transmission of drug resistant *M. leprae* in the community.

Keywords: Drug resistance, Reactions, Leprosy, Multidrug therapy

#0171/ ILCABS862

LEPROSY AND SOIL-TRANSMITTED HELMINTHS PART 1: INDICATORS AND CLINICAL OUTCOMES

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Introduction: Ninety-four percent of annual new leprosy cases are diagnosed in populations co-endemic for soil-transmitted helminths (STH). Chronic STH infection can induce long-term immune modulation

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and suppress host cellular immunity. Antihelminthic (deworming) treatment can disturb or eliminate STH-induced immune suppression, thereby, allowing host immunity to shift towards reconstitution of cellular immunity. Our previous study demonstrated significant inverse associations of STH-coinfection in new leprosy cases presenting with reactions. Subsequently, a second larger study was performed.

Objectives: To further investigate the associations of STH co-infection, deworming, and leprosy clinical indicators and outcomes.

Methods: New leprosy cases, new leprosy reaction cases and household contacts were interviewed and screened by qPCR for STH co-infections common in Nepal at intake and quarterly for up to 2 years. Participants were provided deworming treatment, ivermectin and albendazole, at intake and 6-monthly during the study. WASH training was also provide at intake.

Results: Participants were enrolled (442/595) from 2016-2019 across three groups: new leprosy without reaction (230/230), new reaction (104/150) and household contacts (108/225). STH co-infection of ≥ 1 species was present in 38% of leprosy cases and significantly associated with BI positivity ($p< 0.05$), BI scores ($p=0.0013$), grouped Ridley-Jopling ($p< 0.001$) and across Ridley-Jopling classifications ($p=0.0016$, $p< 0.0001$). At 3 months after deworming, 70% of STH-positive leprosy cases tested STH-negative. Of new leprosy cases diagnosed without reaction, 42 (38%) developed leprosy reaction after deworming with BI significantly associated ($p< 0.0001$).

Limitations: Target enrolment could not be reached due to devastating earthquakes and the pandemic.

Conclusions: Overall, results indicate significant association of STH co-infection with leprosy clinical indicators, BI and Ridley-Jopling classification, which are directly related to disease duration, long-term immunological response towards *M. leprae*, *M. leprae* growth, and increased risks of negative clinical outcomes including reactions and neuropathy.

Keywords: Leprosy, Ridley-Jopling Classification, Bacillary Index, Reactions, Soil-transmitted helminths, Deworming

#0172/ ILCABS883

CHILDHOOD LEPROSY: A RETROSPECTIVE DESCRIPTIVE STUDY FROM A TERTIARY HOSPITAL

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Leprosy is a chronic mildly infectious disease which is caused by the organism Mycobacterium leprae. Childhood leprosy indicates active transmission in the community. It has been a major public health problem in many developing countries despite the availability of an effective treatment. Despite achievement of elimination status of leprosy in 2005, the reported prevalence of childhood cases continue to be high.

Objective: To assess the clinical profile, demographic data and describe the clinical presentations and complications of childhood leprosy in a hospital in Eastern UP, North India during January 2017 to December 2021 in children below the age of 18 years over the five year study period.

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Method: A retrospective descriptive study of children less than 15 yes of age diagnosed with leprosy and receiving treatment from our hospital were included in the study. Socio -demographic, clinical and treatment details were collected using a pre-set proforma.

Result: A total of 115 cases of childhood leprosy were reported during the 5 year period. Children were predominantly from 10 – 15 age group. Male children 58 (50.4 %) and females- 57 (49.5 %). 9(7.8 %) children had lepra reaction and 5 (4.3%) children had acute neuritis. 4 (3.5%) children had visible deformity.

Limitation: Due to the small sample size, the findings cannot be generalized

Conclusion: The need of early detection and active search programs are emphasized

Keywords: Children with leprosy

#0173/ ILCABS910

DERMOSCOPY AND BIOPSY OF CLOFAZAMINE INDUCED PIGMENTATION

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Introduction: Clofazamine is a red iminophenazine dye,is used in the treatment of leprosy. Side-effects are red-brown pigmentation of skin and conjunctivae, with darkening of skin lesions to slate-grey or black, thus highlighting the lesions more; A reddish blue hue is seen in patients within 2 weeks of taking the drug and the dark brown pigmentation of the skin develops a few months later. It remains as long as the patients take the drug and discontinuance of the drug leads to clearance of most of the pigment within 6–12 months, although traces of pigment have been seen as long as 4 years or more. The postulated cause is a drug-induced reversible ceroid lipofuscinosis with some contribution from the presence of the drug in tissues.

Aims and Objectives: To demonstrate the pigmentation induced by clofazimine as long as the patient is on clofazimine therapy in the regimen and to differentiate from other causes of pigmentataion

Method: Clinical, Dermoscopic examination and biopsy of suspected cases on clofazimine, of the lesion

Limitations: smaller sample size

Results: Out of the 10 patients, 3 were famale. 7 were male. 8 pateints were on MBMDT. 2 patients already completed MBMDT. We noticed blanchable erythema and blue-gray peppering in a reticular or hexagonal pattern in 9 patients..Dermoscopically, pigmentation showed a black background, honeycomb pattern and yellow to white globules. In biopsy for most of patients, increased epidermal melanin along with a selective accumulation of pigment within the macrophages, adnexa and dermal collagen was noticed along with ceroid lipofuscin

Conclusion: We report the dermoscopic features and biopsy of clofazimine-induced pigmentation of a leprosy plaque. A comparative dermoscopic study may be able to differentiate between clofazimine-induced pigmentation and its clinical mimics.

Keywords: Clofazamine, Pigmentation, Dermoscopy, Biopsy

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#0174/ ILCABS960

BORDERLINE LEPROMATOUS LEPROSY WITH TYPE 2 LEPRA REACTION AS THE FIRST PRESENTATION: AN UNUSUAL CASE

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Introduction: Leprosy is a chronic granulomatous disease involving both skin and nerves. Type 2 lepra reaction is a Th2-mediated type III hypersensitivity reaction in leporsy, which is usually seen in lepromatous leprosy(LL) and borderline lepromatous leprosy(BL) after anti-leprosy treatment, but rarely in newly diagnosed patients. Here we report a rare case of a BL with type 2 lepra reaction as the first presentation.

Description of the case: A 53-year-old woman had fever, fatigue, and dizziness with red patches and erythematous tender nodules on legs 6 months ago. The diagnosis was unknown after presenting to the hospital. After symptomatic treatment, the lesions did not improve significantly. Similar skin lesions subsequently appeared on arms. She also had loss of eyebrows, armpit hair and pubes and paresthesias of both feet for 2 months. Histopathological examination revealed histiocytes and foam cells infiltration in the dermis. A skin smear stained according to the Ziehl–Neelsen method revealed acid-fast bacilli in clusters. The diagnosis of BL leprosy with type 2 lepra reaction was made. The patient underwent WHO multidrug therapy(MDT) regimen.After 1 month of treatment, the skin infiltration and weakness in the legs had diminished.

Conclusion: Since leprosy has wide variations in its clinical manifestations, the patients with type 2 lepra reaction as the early clinical manifestation may be misdiagnosed as erythema multiforme, Sweet syndrome, erythema nodosum, etc. This case highlights the need of clinicians to be aware of the possibility of leprosy when the skin lesions is characterized by erythematous tender nodules, and pay attention to the medical history, physical examination and histopathological investigation."

Keywords: Lepromatous leprosy, Type 2 lepra reaction

#0175/ ILCABS962

REFRACTORY ERYTHEMA NODOSUM LEPROSUM COMPLICATION IN A BORDERLINE LEPROMATOUSLEPROSY PATIENT: A CASE REPORT AND LITERATURE REVIEW

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Background: Erythema Nodosum Leprosum (ENL) is an immune-mediated inflammatory complication occurring in 50% lepromatous (LL) leprosy patients and 5–10% borderline lepromatous (BL) leprosy patients. Individuals with ENL usually present erythematous skin nodules with systemic symptoms. Corticosteroids and thalidomide are considered as the first line therapy applied to control inflammation and relieve pain. At present, the technical guidelines for ENL recommended by World Health Organization (WHO) and other institutions are mostly based on clinical practice, but less supported by randomized clinical trials. There are no clear guidelines for the treatment of chronic and recurrent ENL.

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Methods: We collected and summarized the clinical data of a 47-year-old-male BL patient who developed ENL after 7 months' multi-drug therapy. The clinical manifestations were prominently presenting with ENL and neuritis. This patient experienced intermittent recurrence of ENL for 7 years with continuous corticosteroids therapy, a short time treatment with thalidomide and therapies according to his symptoms. A literature review was included to help find the effective and individualized treatment for this refractory and chronic ENL patient.

Results: Two randomized controlled trials (RCT) and three reviews about ENL therapy were identified. Thalidomide was an effective treatment of leprosy with ENL through the inhibition of TNF-α, stimulation of T cell-mediated IL-2 production and inhibition of neutrophil aggregation. Account for the complications, apply corticosteroids to control inflammation and relieve pain. Blood pressure and blood glucose were monitored during the treatment. After 7-year continuous corticosteroids therapy and a short time treatment with thalidomide along with conventional therapy, the patient's clinical manifestations of ENL and pain had been relieved.

Conclusion: Our case indicated that continuous corticosteroids therapy was warranted along with thalidomide.

Keywords: Erythema Nodosum Leprosum, Leprosy, Treatment

#0176/ ILCABS1014

CLINICAL ANALYSIS OF 43 CASES OF LEPROSY REACTION IN LEPROSY MULTIDRUG THERAPY

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Objective: The aim was to understand the clinical characteristics and related factors of patients with leprosy reactions during multidrug therapy (MDT), and to provide basis for leprosy prevention and treatment.

Methods: Relevant information of all leprosy patients registered in the LEPMIS in Shandong Province who have completed MDT and have suffered leprosy reactions during the period 2006-2020, were collected. General descriptive and Spearman's correlation statistical analysis were used to evaluate the characteristics of leprosy reaction and its correlation with relevant factors in SPSS 23.0.

Results: Among patients treated with MDT, the incidence of leprosy during MDT was 13.7%. A total of 43 study subjects were recruited, including 39 (90.7%) new cases and 4 (9.3%) relapsed cases. 3 cases were BT (7.0%), 14 cases were BL (32.5%), and 26 cases were LL (60.5%). A total of 69 times leprosy reaction occurred in 43 patients during MDT, with an average of 1.6 times per case. (34.9%) of patients suffered at least two times of reaction 34.9%. Nine (20.9%) cases suffered type I reaction, 27 cases (62.8%) suffered type II reaction and 3 cases (7.0%) suffered mixed reaction. The first time reaction in 26 (60.4%) cases occurred during the first 8 months of MDT. Spearman analysis showed that the times of leprosy reactions during MDT was positively correlated with education level (rs=0.383, p=0.011) and negatively correlated with diagnosis time (rs=-0.323, p=0.035).

Conclusion: The incidence of leprosy reactions during MDT is relatively high. Reactions are more common in LL and can occur repeatedly, type II reaction is more common, mostly occurring within the first 8 months

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of MDT. The number of reactions is related to education level and time of diagnosis. And it is crucial to diagnose and manage reaction as early as possible.

Keywords: Leprosy; Leprosy reactions; Multidrug therapy

#0177/ ILCABS1040

OBSERVATION OF CLINICAL EFFECT OF PREDNISONE COMBINED WITH THALIDOMIDE IN THE TREATMENT OF TYPE-2 LEPROSY REACTIONS

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Objective: To observe the clinical effect of thalidomide combined with Prednisone in the treatment of type-2 leprosy reactions.

Method: 62 patients with type-2 leprosy reactions admitted in our hospital were selected and divided into the control group and the observation group by random allocation.The clinical effect and adverse reactions of two groups were compared.

Result: The effective rate of the observation group was 93.5%, which was higher than the control group(74.2%),and the difference was statistically significant(P 0.05).The incidence of adverse reactions in the observation group was 3.2%,which was lower than 19.4% of the control group,and the difference was statistically significant(P0.05).

Conclusion: Prednisone combined with thalidomide is effective and safe in the treatment of type-2 leprosy reactions,which is worthy of clinical recommendation.

Keywords: Thalidomide, Prednisone, Type-2 Leprosy Reactions

#0178/ ILCABS1069

MOTOR NEURON DISEASE MIMICKING HANSEN'S DISEASE

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Pure neuritic leprosy (PNL) present as nerve involvement in the form of nerve deficit or nerve thickening, without any cutaneous lesions, with a negative skin smear and no other identifiable pathology. Diagnosed by nerve biopsy.The diagnosis of pure neural leprosy is more complex, since it involves the exclusion of other clinical processes that also result in peripheral neural lesions, such as diabetes mellitus, hypothyroidism, collagenosis, vasculitis, syphilis, AIDS, and other less common diseases, such as amyloidosis and motor neuron diseases. Here we are discussing a case of rare motor neuron disease Hirayama disease which mimick pure neuritic leprosy.

Keywords: Pure neuritic leprosy, Neuropathy, Hansens disease, Hirayama disease

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#0179/ ILCABS1070

DENOVO HISTOID HANSEN'S DISEASE PRESENTING WITH UVEITIS AS A COMPLICATION

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A Case Report of "Denovo Histoid Leprosy with Eye involvement" was detected in the spouse of a Female patient with Lepromatous Leprosy.

This case is presented to emphasize the importance of Contact -Screening and also for the rarity of Denovo Histoid variant of Leprosy.

Keywords: Histoid Hansen's, Lepromatous Leprosy, Uveitis, Contact Screening

#0180/ ILCABS1081

HAEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS (HLH) IN LEPROSY: CHALLENGING SCENARIO

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Introduction: Leprosy is oldest disease known to mankind with chronic and unpredictable course having distinct clinical, histopathological features based upon individual immunity. Recurrent type 2 lepra reaction in lepromatous pole is difficult to treat at times. Development of haemophagocytic lymphohistiocytosis (HLH) makes it more challenging and life threatening. HLH is a dysregulated activation and proliferation of macrophages, leading to uncontrolled hemophagocytosis, cytokine storm, and ineffective immune response characterized by fever, lymphadenopathy, hepatosplenomegaly, cytopenias, liver dysfunction, and hyperferritinemia. The disorder is classified into primary or genetic HLH syndrome and secondary or reactive HLH syndrome with underlying infection, autoimmune or rheumatologic, malignant, or metabolic conditions. There are only two case reported till now.

Description of the case: We report two such cases who had turbulent course during the treatment of leprosy. First case was a middle aged lady in late postpartum phase on regular therapy for Hansen's disease with type 2 lepra reaction who developed features of HLH syndrome. Second case was a young male who was on multidrug therapy for leprosy for lepromatous leprosy along with tapering dose of oral steroid following his second episode of type 2 reaction. He rapidly deteriorated following bouts of fever with severe weakness. On evaluation revealed features of HLH. Both the cases were successfully managed by systemic steroid and addition of intravenous immnunoglobulines along with multidrug therapy in intensive care setting.

Conclusion: These cases aim to highlights that having high index of suspicion, awareness of clinical and laboratory parameters by practicing dermatologist and multispecialty consultations are keys in the management of HLH.

Keywords: Hansen's disease, Type 2 reaction, Haemophagocytic lymphohistiocytosis

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#0181/ ILCABS1082

RARE CLINICAL PRESENTATION OF LEPROSY: GERMANE TO FIVE CASES REPORTED IN A TERTIARY CARE CENTRE

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Introduction: Leprosy can have a variety of clinical presentations. Leprosy affects different people with wide spectrum of variations.The most common clinical presentation can be easily identified whereas the uncommon clinical presentations of leprosy delay the diagnosis. In such cases the histopathological picture arrives with the diagnosis. Below are the five rare clinical presentations of leprosy presented to a tertiary care centre in India.

Objective: The objective of the present case series is to throw light on the most atypical manifestations of leprosy.

Patients / materials and methods: In this case series, we included five-cases of leprosy presented to the outpatient department in a tertiary care centre in India.

Case-1: a 45year old male presented with erythematous scaly plaques few being hyperpigmented over the trunk and lower limbs since 1year and decreased sensation over the extremities since 7 months.

Case-2: a 40year old male presented with erythematous scaly plaques and papules over the forehead and back.

Case-3: a 35year old male presented with edema, erythema and purpura over the arms, legs,face and chest.

Case-4: a 38year old male presented with palpable purpura over the legs and trunk along with constitutional symptoms.

Case-5: a 25year old presented with skin to yellowish brown coloured painless plain nodules over back,arms,legs and earlobe since 2years.

Results: On biopsy, the histopathological examination: case-1&2 showed features of psoriasis and borderline lepromatous leprosy, case-2&3 showed leukocytoclastic vasculitis with features of diffuse lepromatous leprosy, case-5 showed features of historic leprosy. Slit skin smear was supportive.

Limitations: No limitations.

Conclusion: Leprosy is a great mimic. Apart from the reactions which are the emergencies in leprosy, these atypical presentations are to be quickly considered and promptly treated. The endemic areas to be screened rigorously as all the five patients presented in these case series hail from

Keywords: Leprosy, Varied Presentations

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SOCIAL ASPECTS

#0182/ ILCABS5

MAINSTREAMING LEPROSY DISABLED THROUGH DISABLED PEOPLE ORGANIZATION IN BANGLADESH

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Objectives: Leading Disabled People Organizations by the people with leprosy disabilities independently in 4 districts of North West Bangladesh.

Methods: 700 SHGs with 6500 group members (55% leprosy affected people) have established at the end of 2019 by TLMIB. 220 disabled people have been selected as executive committee members (Leaders) to manage 24 DPOs in northern 4 district of Bangladesh. The Chairman of the 28 DPOs have been given full responsibility to lead and manage 700 SHGs and their 24 DPOs to manage by their 220 association leaders.

Results:

1. SHGs sustained by the leadership of association **Chi Square** 20.50 Tabular 7.81
2. Economical functions of SHGs members sustained by association **Chi Square** 98.82 Tabular 5.99
3. Livelihood of SHG members improved by association support **Chi Square** 4.18 Tabular 5.99
4. Health hygiene of SHG members improved by association support **Chi Square** 75.41 Tabular 5.99
5. Ulcer rate of leprosy disabled of reduced by association support **Chi Square** 15.30 Tabular 5.99
6. Average income of SHGs increased by association support **Chi Square** 10.68 Tabular 3.84

Conclusion: Community Based Rehabilitation program with people with disability focusing leprosy with Self-Help Group (SHG) approach and sub-district level association that is formed by the representative of SHGs and led by the leaders of sub-district level association have failed. The major reason may by COVID19 pandemics of almost full project period and disregard of the SHG members and sub-district association leaders. The association leaders were able to collect huge financial benefits for their SHG member but not able to protect their SHGs to disfunction.

Keywords: Mainstreaming, DPOs leading by leprosy disabled, Self-Help Group approach

#0183/ ILCABS58

RAPID TEST IN LEPROSY – ITS ACCEPTABILITY AMONG PATIENTS AND CONTACTS

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Introduction: A rapid diagnostic test (RDT) is a promising tool to detect leprosy. It is handy and field-friendly. However, there remains a knowledge-gap on its acceptability among its target population.

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Objective: To determine the acceptability of an immunologic, lateral flow-based rapid diagnostic test among patients, house contacts (HC) and community contacts (CC).

Methodology: A cohort of Filipino subjects who participated in a serodiagnostic screening test for leprosy were surveyed regarding their perception and acceptance of the screening tool (RDT), a combination of PGL-I and LID-1 (ML2331, ML0405) which requires blood draw and serum samples from subjects. After the 20-minute procedure, subjects were surveyed on their acceptability and perception about the screening tool.

Results: A total of 1,200 subjects participated in the survey- 200 patients (92% MB); 600 HC and 400 CC. Survey responses were as follows:

Acceptance- Subject acceptance was very high - 98.5% of patients, 98% of HC and 96% of CC were highly in favor of RDT as a diagnostic and screening tool for leprosy.

Preferred Frequency & Monitoring Coverage- Majority of patients preferred monthly monitoring until cure; while contacts preferred "as needed only" approach of monitoring. Most patients preferred confining the screening test strictly within the household due to social stigma. They were not in favor of community screening using the tool.

Participation in Future Studies- Most subjects were interested – 96% of patients, 86% of HC and 90% of CC were interested in participating future RDT-related studies.

Perceived Importance and Benefits of RDT- 98% of patients, 96% of HC; 95% of CC considered the tool "highly important and beneficial."

Limitation: Lack of prospective follow-up data for comparison

Conclusion: RDT is a highly acceptable screening tool among its target population. Highest rate of acceptance was observed among patients, followed by house contacts and community contacts, respectively.

Keywords: Rapid diagnostic test, Acceptability, Patients, Contacts

#0184/ ILCABS84

MODERN MEDICINE, SEXUAL RIGHTS, AND RELIGIOUS FREEDOMS FOR LEPROSY PATIENTS: THE GANDHIAN INSTITUTIONS FOR LEPROSY, INDIA, 1930-1950.

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From the 1920s Gandhi began his visits to missionary leprosy asylums, where he learned of the modern scientific understanding for leprosy, and of other practices which were prevalent, such as compulsory segregation of male and female inmates, and proselytization. The origin of the Gandhian discourse on human rights of leprosy patients, as well as his own imbibing of a scientific understanding of leprosy, drew from these visits.

I examine two case studies. First, the Naini Leprosy Asylum in Allahabad, where Sam Higgenbottom was Hon. Superintendent, working with his wife Ethleen Cody. They defied the missionary policy of compulsory sexual segregation and allowed marriage of inmates. Their discussions with Gandhi on permitting intermixing of the sexes, and Gandhi's subsequent discussions in his journal Harijan (1935) on sexual and reproductive rights of leprosy patients, are among the great dialogues in the history of human rights of the leprosy affected. This interaction has never been examined.

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The second case study is of the Maharogi Seva Mandal (MSM), the first Gandhian institution for leprosy (1936), which implemented a new vision. It had a hybrid lineage, drawing from both the Gandhian ashram culture and the Christian missionary leprosy asylums. The MSM was an institution of modern medicine, allowing freedom of worship, without mandating sexual segregation. It set a standard of a stigma- free vision of leprosy, which impacted all the leprosy centers that Gandhians subsequently established. The Gandhi Memorial Leprosy Foundation (1951), founded after Gandhi's tragic assassination, took forward this legacy and pioneered the modern medicine for leprosy in India.

What impact did the leprosy bacillus have on Gandhi's vision, and what were the unique contributions of the Gandhian institutions for leprosy? The conference logo of Gandhi looking into a microscope is integral to his legacy, and it needs to be discussed.

Keywords: Gandhi, Modern medicine, Stigma, Human rights

#0185/ ILCABS85

EFFECTIVENESS OF ART THERAPY ON THE SUBJECTIVE WELL-BEING OF IN-PATIENTS AFFECTED WITH LEPROSY

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Background & Purpose: Stigma and fear associated with leprosy affect the subjective well-being of the patients. The low subjective well-being can further affect their mental health. There has not been any intervention studies conducted among leprosy patients related to their mental health. But focusing on the mental health of the leprosy patients is as important as treating their physical disabilities. Studies have suggested that art therapy has a significant effect on the quality of life and also on the subjective well-being of patients in hospitals. Hence, art therapy was chosen to enhance subjective well-being of leprosy in-patients.

Objective: To assess the subjective well-being of the hospitalized leprosy patients. To analyze the effectiveness of art therapy in hospitalized leprosy patients

Methods: This study was carried out in two phases using theEx-post facto research design &quasi experimental design. Initially, thesubjective-well beings of the hospitalized leprosy patients were assessed by survey method using SubjectiveWell-being Inventory which is a 40 item questionnaire which measures feelings of well-being. Those who scored below average in the subjective well-being inventory were selected for the administration of art therapy. The art therapy was provided in 8 sessions. Subjective well-being was reassessed after the therapy.

Results: The subjective well-being of the leprosy in-patients was found to be decreased. The administration of art therapy had a significant improvement in the subjective well-being. The subjective well-being scores of the patients who had caregivers were higher than the patients who did not have caregivers.

Limitation: The study had limited participants and also was carried out in a short period of time. The sustenance of the effect of the therapy is questionable even though there was a marked significance

Conclusion: The art therapy has a significant effect on the subjective well-being of the in-patients affected with leprosy.

Keywords: Well- being, Art therapy, Leprosy

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#0186/ ILCABS97

STRENGTHENING INDIVIDUAL AND FAMILY RESILIENCE AGAINST LEPROSY-RELATED DISCRIMINATION: A PILOT INTERVENTION STUDY

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Introduction: Leprosy and related stigma can negatively affect the psychological well-being of affected persons and their families. Resilience is a capacity and learning process that incorporates many of the core skills and abilities which may enable people to address stigma and discrimination.

Objectives: To develop and pilot an intervention to strengthen individual and family resilience against leprosy-related discrimination.

Material and methods: We used a before-after study design with a mixed methods approach. A 10-week family-based intervention was developed. The study was conducted in Odisha and Telangana state, India. Participants were recruited using purposive sampling. Two questionnaires were used: the CD-RISC (resilience) and the WHOQOL-BREF (quality of life). In addition, semi-structured interviews were conducted post-intervention. Data were collected at baseline, a few weeks after completion of the intervention, and in the Odisha cohort, again six months after completion. Paired t-tests measured differences pre-and post-intervention. Qualitative data were thematically analysed.

Results: Eighty participants across 20 families were included (23 persons affected and 57 family members). We found a significant increase in CD-RISC scores for persons affected and family members from Odisha state (baseline 46.5, first follow-up 77.0, second follow-up 70.0), this improvement was maintained at six-month follow-up. There was no increase in CD-RISC scores post-intervention among participants from Telangana state. WHOQOL-BREF scores were significantly higher at follow-up for persons affected in both states, and for family members in Odisha state. No families dropped out of the study. In qualitative feedback, all participants described drawing benefit from the programme. Participants especially appreciated the social dimensions of the intervention.

Limitations: Our study was substantially affected by COVID-19 pandemic.

Conclusions: This pilot study showed that 10-week family-based intervention to strengthen resilience among persons affected by leprosy and their family members was feasible, and has potential to improve resilience and quality of life.

Keywords: Resilience, Quality of life, Stigma, Discrimination, Family-based intervention

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#0187/ ILCABS126

SMALL-SCALE LIVELIHOOD OPPORTUNITIES FOR WOMEN IN MARGINALIZED LEPROSY COLONIES - LESSONS LEARNT DURING COVID PANDEMIC

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Introduction: Women from leprosy affected families in marginalized colonies, suffer double disadvantage. Through self-help groups, Sasakawa-India Leprosy Foundation (S-ILF) has been engaging with women to ensure empowerment.

Objective: The effect of loss of income during Covid pandemic was felt more severely in the setting of marginalized leprosy colonies. S-ILF encouraged 40 women across four states in India to adopt small-scale livelihoods. We undertook an assessment of the impact of this intervention through telephonic interview with the beneficiaries.

Material & Methods: Face masks being mandated during the pandemic, need for bulk mask-making arose. Women in age group of 24 – 55 years, grouped into 6 self-help groups (2 each in Odisha and Bihar; and 1 each in Madhya Pradesh and Delhi) were trained in mask-making using online platform. The raw material for the same was provided by S-ILF.

Results: While doing routine household chores, these women produced 5000 masks in a month, each earning an average of Rs. 1250 (USD 16) per month. The masks were procured and distributed by S-ILF in its intervention colonies.

All women reported this part-time engagement as useful, since it contributed to the overall family income, especially during the time of crisis. In this manner the intervention, impacted over 120 indirect beneficiaries including family members.

The engagement has helped boost their confidence and they are determined to take additional work for their self-help group, such as tailoring to cater to nearby market places. Their financial contribution to the overall family income had enabled status elevation at family-level and served as motivation to other women in the colony.

Conclusions: Small-scale businesses through self-help groups have allowed women in the colonies to attend to family responsibilities, while at the same time contributing to the overall income. This has led to confidence-building and is an important tool for empowerment.

Keywords: Leprosy, Marginalized, Self Help Group, Empowerment, Livelihood

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#0188/ ILCABS131

APPLICABILITY OF THE FINDINGS FROM JOB CHARACTERISTICS MODEL IN THE CONTEXT OF LEPROSY INSTITUTIONS AND TREATMENT TOWARDS ACHIEVING ZERO LEPROSY IN INDIA.

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Introduction: As per Hackman and Oldham's theory of Job Characteristics Model, Core Job Dimensions influences the psychological experiences of workmen, together which further influences the Personal and Work Outcomes. A study was conducted on this theory in Indian context.

Objective: To illustrate the findings of the study on Hackman and Oldham's Job Characteristics Model and demonstrate its applicability in the context of Leprosy Treatment Centers to accelerate the productivity towards achieving zero leprosy.

Materials and Methods: A multicentric cross sectional study was conducted in India on selected state-run, charitable, and corporate hospitals, using nonprobability convenience sampling methods. A total of 2488 health care workers (paramedical and non-medical) were interviewed using Job Diagnostic Survey with 5 and 7 points Likert's scale comprising of 83 variables from 7 segments.

Results: 1. It's revealed Skill Variety, Task Identity and Task Significance have high mean score whereas Autonomy and Feedback were moderate.

2. In Personal and Work Outcomes, Internal Work Motivation, Social Satisfaction, Supervision and Growth Satisfaction had high mean value whereas General Satisfaction and Job Security showed moderate and Pay/ Emoluments being very low.

3. Critical Psychological States and Specific Satisfactions of the respondents were low, according to them were less satisfied due to lesser pay, lack of job security and individual growth.

Limitations: The study is not conducted on Leprosy Treatment Centers, but the findings of the study are likely applicable to Leprosy Treatment Centers as well.

Conclusion: The above findings are more obvious among Leprosy Treatment Centers as well. Therefore, to get better Personal and Work Outcomes from Leprosy Treatment Centres there is an immediate need for future research considering the Job Characteristics Model on leprosy institutions to fulfil the above lacunae with systematic psycho-social inputs towards achieving zero leprosy in India.

Keywords: Job Characteristics Model; Organizational Development; Personal and Work Outcomes; Job Satisfaction; Leprosy;

#0189/ ILCABS135

EMPOWERING PERSONS AFFECTED BY LEPROSY AND THEIR FAMILIES TO ADDRESS SOCIO-ECONOMIC CHALLENGES IN LEPROSY COLONIES

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Introduction: Lack of awareness about leprosy has perpetuated long-standing stigma and discrimination. This has a negative impact on every aspect of one's life including health and socio-economic. Leprosy colonies

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are an example of such neglect as they continue to lack basic civic amenities like access to clean drinking water, electricity, roads, toilets, sewage and garbage disposal. Overall development of colonies is integral to mainstreaming process. The biggest challenge to addressing these basic qualities of life issues relates to low self-esteem and the sense of dependency on others.

Description: Sasakawa-India Leprosy Foundation (S-ILF) has taken the initiative to empower residents of leprosy colonies, enabling them to identify gaps, provide the tools to address challenges and motivate them toward the attainment of their entitlements and rights. A series of empowerment workshops have been conducted across 31 selected colonies in the states of Karnataka, Madhya Pradesh, Odisha and West Bengal. The program has benefitted more than 1500 households in these colonies. The impact of such workshops has been manifold. Residents have successfully benefitted from social security schemes of local, state and central governments through improvements in electricity, drinking water, housing, sanitation and roads. This was made possible through positive and persuasive interactions with public representatives and government officials. On a personal level, persons affected by leprosy have gained confidence and have brought a positive change in behaviours.

Conclusion: Initiatives aimed at the empowerment of affected persons can lead to sustainable changes in their lives. Dignified quality of living can be an important means of combating stigma and discrimination by ensuring mainstreaming. The United Nations 'Principles and guidelines for the elimination of discrimination against persons affected by leprosy and their family members' state that such persons who have been empowered and who have had the opportunity to develop their abilities can be powerful agents.

Keywords: Leprosy, Empowerment, Stigma, Discrimination, Socio-economic

#0190/ ILCABS140

CHANGING PERCEPTION AND IMPROVING KNOWLEDGE OF LEPROSY: AN INTERVENTION STUDY IN CHANDAULI AND FATEHPUR DISTRICTS OF UTTAR PRADESH, INDIA

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Introduction: Since ancient times leprosy is perceived negatively, resulting in stigmatization. Visible impairments, religious and cultural beliefs, fear and lack of knowledge of leprosy are the main causes of this negative perception.

Objectives: The objective is to evaluate interventions to change perceptions and improve knowledge of leprosy of contacts of index cases and community members in Chandauli and Fatehpur districts, Uttar Pradesh.

Material and methods: A pre-post mixed methods intervention study was conducted in two districts. Based on six steps of quality intervention development (6SQuID), two interventions were designed: (a) posters that provide information on leprosy and challenged misconceptions (b) meetings with persons affected by leprosy, community members and stakeholders. Mixed methods design containing in-depth interviews, focus group discussions, and questionnaire containing a knowledge measure (KAP), Explanatory Model Interview Catalogue community stigma scale (EMIC-CSS) and Stigma Distance Scale (SDS) were used to

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assess impact of interventions. Quantitative data were analysed using stepwise multivariate regression, and qualitative data were analysed using open, inductive coding.

Results: 1067 participants were included in Survey 1 (pre-intervention) and 843 participants in Survey 2 (post-intervention). In Survey 1, 13% of participants had adequate knowledge of leprosy versus 53% in Survey 2. Responses showed stigmatizing community attitudes in 86% (Survey 1) and 61% (Survey 2) of participants and negative personal attitudes in 37% (Survey 1) and 19% (Survey 2). The number of posters seen was associated with KAP, EMIC-CSS and SDS scores in Survey 2 ($p<0.001$). The interventions were effective in increasing knowledge of all participant groups, and in changing community and personal attitudes of contacts and community members.

Limitations: A randomized controlled design was not feasible. The observed changes may not be entirely attributable to the interventions.

Conclusion: Contextualized posters and community meetings were effective in changing the perception of leprosy and in increasing leprosy-related knowledge.

Keywords: Leprosy, Perception, Stigmatization, Contacts, Community meetings, Contextualized posters

#0191/ ILCABS155

QUALITY OF LIFE IN PATIENTS WITH LEPROSY USING WORLD HEALTH ORGANISATION QUALITY OF LIFE BRIEF VERSION (WHOQOL-BREF) QUESTIONNAIRE AND FACTORS AFFECTING IT

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Introduction: Leprosy continues to account for 60% of global burden despite the availability of effective multi-drug therapy for more than three decades in India. Also, the social stigma associated with the disease leads to decreased self-esteem thus impacting their quality of life. There are very few studies assessing the quality of life (QoL) in leprosy patients and even more few studies assessing the factors affecting it. So, this study was undertaken to study the same.

Objectives: To assess the QoL in patients with leprosy WHOQOL-BREF questionnaire and to find out the correlation of QoL with socio-demographic and clinical profile of patients.

Materials And Methods: This was a hospital-based, cross-sectional study conducted on 64 leprosy patients attending the dermatology out-patient department of a tertiary centre after Ethics Committee approval. All patients, diagnosed with leprosy, above 18 years of age and willing to give informed consent were included. The socio-demographic data and the disease profile were documented. The QoL was assessed WHOQOL-BREF questionnaires. Data was analyzed using parametric test, R test, Chi-square test and Z test and Pearson's correlation coefficient (r) was used to test for the correlation between QoL scores.

Results: The mean WHOQOL-BREF score for overall QoL was 2.94 ± 0.8. Psychological domain was the most affected and the social relationship domain was the least affected. Low socio economic status, lack of

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education, lepromatous spectrum, presence of leprosy reactions had significant difference in psychological, social domains. The presence of deformity had a statistically significant effect on all the domains.

Limitations: Relatively small sample size.

Conclusion: Leprosy negatively affects the QoL of those affected. As Leprosy reactions, lepromatous spectrum and deformities significantly affect the QoL, early detection and timely management of the disease is the need of the hour to decrease the deformities and thus improve the quality of life of leprosy patients.

Keywords: Quality of life, Deformities, Socio-demographic factors

#0192/ ILCABS169

ARE WE PROMOTING STIGMA BY UTTERING THE WORD "LEPROSY"? - A QUALITATIVE STUDY

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Background: Multiple psychiatric morbidities have been identified among the leprosy-affected persons. In low resource leprosy endemic countries, there are few mental health services due to limited political and financial commitments. There is inadequate evidence about the global prevalence of mental disorders and the treatment needs of the leprosy-affected persons, making it difficult to intervene effectively to minimize its impact.

Objective: To explore reasons for mental health issues and stigma experienced by leprosy-affected persons.

Methodology: A qualitative phenomenological study was conducted with a purposive sample of 31 leprosy-affected persons who were diagnosed in the last 5 years. Terminally ill patients and those unwilling to sign consent were excluded.

Data were collected by conducting semi-directive interviews using a validated open-ended questionnaire till the saturation was achieved. Data were translated, transcribed and analyzed using the basic interpretative qualitative framework and NVivo12 software.

Results: The participants who were told – they have leprosy experienced anxiety, depression, stigma, and preferred self-isolation. They had fear of death, getting worse, spreading disease to family members, outcast by society, getting divorced, or being neglected by family and neighbors'.

However, the leprosy-affected participants with low awareness about the disease had a belief that they have a 'skin disease' and experienced less or no anxiety, depression, stigma and related fear.

Both the group of patients either completed the treatment or taking the MDT regularly.

Limitations: Recall bias in the case of RFT patients

Conclusion: The disclosure of leprosy diagnosis appears to be an event that triggers the stigma and other mental health issues among the leprosy-affected persons. Using mixed methodology this study will further explore the reasons of mental health issues among the leprosy-affected persons and possible ways to mitigate them.

Keywords: Stigma, Discrimination, Anxiety, Depression, Leprosy, Mental Health

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#0193/ ILCABS203

MENTAL WELLBEING OF PATIENT AFFECTED BY LEPROSY

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Introduction: Leprosy is a chronic disease which has long term consequences related to impairment and disability resulting in mental health problems. Nepal is the one of the highly endemic countries and most of the people affected by leprosy are living in poverty which has increased their risk of psycho social and mental health problems.

Objective: Assess the level of mental wellbeing among patients with leprosy and evaluate the association of mental wellbeing with related factors.

Material and Methods: A descriptive study was conducted among patients admitted in a leprosy hospital. A total of 50 leprosy patient were selected by purposive sampling. Data was collected through a standardized, translated and validated tool; Warwick Edinburgh Mental wellbeing Scale. Data analysis was done using SPSS software version 22.0

Results: Out of the total, 32% of the patient had low mental wellbeing and 68% of patients had medium mental wellbeing while none of the patients had high mental wellbeing. Among the total, 36% of males had low and 64% had medium mental wellbeing while 27% female had low and 73% had medium mental wellbeing. Although there was a difference in mental wellbeing by gender, it was not statistically significant.

Limitations: A sample size and the fact, the sample was taken from Leprosy ward limits the generalizability of this study. An influence of external factors like presence of family member could effects the responses of individual.

Conclusion: Most of the patients had medium and low level of mental wellbeing which clearly demonstrated that patients with Leprosy need mental health care along with physical care during the course of their treatment. It is essential to identify individuals who are at risk for mental health problem. The findings showed that there is a dire need of mental health interventions

Keywords: Mental Wellbeing, Leprosy

#0194/ ILCABS211

AN EMPIRICAL STUDY ON DRIVERS OF MOTIVATION OF THE HEALTHCARE WORKERS FOR LEPROSY

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Introduction: Motivation and faith of the healthcare workers is the foundation on which the Leprosy program rests. It is challenging to work in the area of Leprosy which is abhorred with myths and misconceptions. The study attempts to find out the determinants of motivation of the healthcare workers .

Franco et.al. (2002) found out three layers of influence on motivation of healthcare workers: a) Individual level determinants 2) Organizational level determinants and 3) Determinants stemming from the society.

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The above determinants will be examined in the context of leprosy.

Objectives: 1. To enlist the internal factors that motivate healthcare workers.

2. To find out the influence of organizational climate on the healthcare worker motivation.

3. To studythe influence of transformational leadership style of team leaderson worker motivation .

4. To find out the significance of positive interaction with social community and worker motivation .

Research Methodology:

Mixed method design will be adopted to capture a thematic understanding of determinants of motivation to work in the area of leprosy and also to arrive at a quantitative evaluation of the same in the study sample.

An initial pilot study of the six healthcare workers helped design the qualitative questionnaire schedule.

The research design, quantitative questionnaire and interview schedule was based on a framework of determinants of healthcare motivation (Franco, 2002)

Data will be collected from health workers from select government and private hospitals in Hyderabad. Stratified random sampling technique will be used.

The data will be analyzed using Pearson Correlation of motivation with the four factors listed above.

Limitations: Self serving bias and respondent bias.

Conclusion: The study may have implications for policy framers and administrators in the healthcare sector as it looks at healthcare worker motivation in a holistic manner.

Keywords: Motivation, Healthcare Workers, Leprosy, Determinants of Motivation, Individual level determinants, Organizational level determinants societal level determinants

#0195/ ILCABS227

SCHOOL DROPOUTS AMONG LEPROSY AFFECTED: NEED FOR FOLLOW-UP OF CASES, REASONS AND COUNSELLING

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Introduction: Among the children who visit counselling centres after diagnosed of leprosy considerable number report to have discontinued their education due to social stigma and related problems. The counselling centre of urban metro tertiary care hospital have made efforts to analyse and document along with the process of counselling the reasons for discontinuation of school. The reasons found as per the perceptions of the dropouts are analysed in this paper.

Aims and Objective:

1. To estimate the approximate proportion of school dropouts among the leprosy affected children

2. To analyse the reasons as per the respondents perceptions for dropping out from the school.

3. To suggest possible NLEP interventions that can be incorporated for follow up of school defaulters and fulfil counselling needs.

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Materials and Methods: The study was conducted on about a total of 70 children who visited counsellor over a period of 4 years from 2017-2020, have been studied

Results: From the total sample school drop-outs included 22 (31.4%) boys and 7 (10%) girls whereas 52(74.3%) boys and 18 (25.7%) girls visited counselling centre. Out of the total dropped out(29 children) 8(27.6%) boys and 2 (6.9%) girls resumed their education after follow up and counselling but the rest on aggregate 65.5% of the dropouts not resumed because of various reasons viz. stigma and fear of discrimination even discriminated due to their deformity, reaction.

Limitation: This study was carried out based on the data of a single centre.

Conclusion: Treatment of the child cases is not effective unless we follow up them and provide regular counselling of the parents to make sure that every child continue schooling and prevent dropouts of both the genders.

Keywords: Leprosy, Child, Counseling, School-dropouts.

#0196/ ILCABS232

SELF-CARE PROGRAMS FOR PEOPLE LIVING WITH LEPROSY: A SCOPING REVIEW

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Introduction: Effective self-care is a key approach for the management and prevention of ulcers for people living with leprosy. Understanding the complexities related to the design and implementation of self-care interventions is key to improving future interventions.

Objective: The aim of this scoping review is to synthesize the existing evidence on self-care for the prevention and management of ulcers amongst people living with leprosy.

Methods: We conducted a scoping review using PubMed, Web of Science and Infolep. Studies were included in the review if they reported on a self-care intervention and if they: i) included individuals living with leprosy ii) reported on leprosy specific self-care activities iii) reported on the development, implementation and evaluation of self-care programs.

Results: The initial search identified 476 articles from the three databases and 15 articles fulfilled our eligibility criteria. The self-care programs and interventions were conducted in eight low and middle-income countries. All interventions included were developed by 'organizing authorities' external to the community including governmental and non-governmental organizations. Interventions included education and training either directly with people living with leprosy or with health workers who implemented the intervention. Seven studies reported on clinical outcomes defined as reductions or healing of cracks, wounds or ulcers on hands and feet. A control group was only included in one study and the quality of intervention data varied greatly.

Limitations: A limited search strategy was employed, focusing on only three databases and limiting the search terms to self-care and leprosy. Given the broad range of terminologies used to describe programs that are essentially self-care, we might have missed some relevant studies.

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Conclusion: The findings of this review suggest that self-care interventions for people to leprosy can lead reductions in cracks, wounds and ulcers. However, more research is required to address pending questions about self-care

Keywords: Self-care, Leprosy, Review, Ulcer care, Capacity building

#0197/ ILCABS244

IMPACT OF MENTAL HEALTH PROGRAM ON NTD: A 2-ARMED COHORT STUDY ON THE PEOPLE AFFECTED BY LEPROSY AND LYMPHATIC FILARIASIS IN BANGLADESH

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Introduction: Neglected tropical diseases (NTDs) are increasingly recognized as major drivers of psychosocial morbidity in affected individuals. Lepra Bangladesh provided different socio-economic and psychological support to reduce the severity of depression and tried to find out what happened if the support is not present in control group through a comparison with experimental group.

Objectives: The main aim of this study is to see the impact of mental health issues in intervention area(Arm B) and non-intervention area(Arm A), identify the mental health needs of people affected by NTDs and to call for the use of psychosocial and counseling interventions to address those needs.

Patients/materials and Method: A non-randomized 2-Armed Cohort study was implemented in March 2020, after one year of implementing the Mental Motivators Project in 4 districts of Bangladesh. Primary measurements aimed to assess the levels of depression, through PHQ9 scoring questionnaires, among people affected by Lymphatic filariasis (LF) and leprosy from existing self-help groups (SHG) of target districts.

Results: The severity of depression was mainly observed in Arm-A (i.e. new districts), as no change was observed in Arm-B. Whilst severe symptoms reduced from 10% to 0% among people affected by LF, severe symptoms decreased from 19% to 0% among leprosy participants in Arm-A. The strong effects of the intervention observed in Arm-B may be explained by the additional activities implemented since 2016, compared to Arm-A. Finally, no variation was observed in Arm-B, probably due to the maximum effect reached through the intervention package.

Limitations: Gender biased, participants feeling shy to respond to sensitive questions and the availability of remote respondents are the challenges in the study.

Conclusion: Continuous support, strong follow up mechanism and building the group ownership with people affected by leprosy and LF reduced mental health outcomes and ensure better living conditions.

Keywords: Neglected Tropical Disease(NTD), Mental Health, Cohort Study, Patient Health Questionnaire(PHQ-9), Leprosy, Lymphatic Filariasis

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#0198/ ILCABS264

ASSESSMENT OF ANXIETY DISORDER OF THE TARGETED BENEFICIARIES (PEOPLE AFFECTED WITH LEPROSY/ PEOPLE WITH DISABILITY AND MARGINALIZED PEOPLE) BEFORE THE IMPACT PROJECT INTERVENTION IN THREE DISTRICTS OF NEPAL

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Introduction: Many studies have indicated that people with leprosy, people with disability and marginalized people have mental health problems. People those belonging to lower socio-economic status and those with any level of disability due to leprosy are at risk of developing depression and/or anxiety.

Objective: The objective of this study is to assess the anxiety level amongst the beneficiaries including people affected with leprosy, people with disability and marginalized people before the project implementation so that the intervention could be designed to address the psychosocial state of the beneficiaries.

Methods: This study involved the data collection using the General Anxiety Disorder-7 (GAD-7) questionnaire. A total of 813 participants of age 18 years and above were enrolled. Data was analyzed to see the anxiety level of the participants.

Result: 66% of the participants were female and 34% were male. Majority of the participants (86.5%) were married, whereas only 13.5% were unmarried. 28% of the participants were leprosy affected people, whereas 31% were people with disability and rest 41% were marginalized people including parents of people with leprosy and disability. 18% of the participants have mild anxiety,72.9% have minimal anxiety, 6.6% have moderate anxiety and 2.5% have severe anxiety.

Limitation: As this is only a baseline survey of a particular location, the result couldn't be generalized to whole Nepalese community. A well designed study is required to assess the anxiety level.

Conclusion: This survey highlighted that majority of the beneficiaries have mild anxiety so interventions which can address the problem should be implemented. This will helpful to manage the problem before the anxiety level of the beneficiaries' deteriorates further.

Keywords: Leprosy, Anxiety, GAD-7, Disability, Marginalized, Mental Health Problems

#0199/ ILCABS278

IMPACT OF LIVELIHOOD INITIATIVES ON SOCIO-ECONOMIC STATUS OF PERSONS AFFECTED BY LEPROSY AND THEIR FAMILY MEMBERS.

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Introduction: Persons affected by leprosy residing in marginalized colonies, depend on begging or manual labor as their source of income. Sasakawa-India Leprosy Foundation (S-ILF) works towards economic empowerment as a tool to mainstream affected persons and their families. With support from Bajaj Auto Limited, S-ILF implemented a livelihood project in four districts (Amravati, Kolhapur, Sangli and Solapur) of Maharashtra, India for a period of 3 years (2019-22).

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Objective: To study the impact of livelihood generation activity in changing the socio-economic status of persons affected by leprosy and their family members.

Methods: We assessed key socio-economic indicators at baseline as well as through an endline survey of beneficiaries, using a semi-structured interview schedule.

Results: The project supported 108 beneficiaries living in nine leprosy colonies (71 males and 37 females). Livelihood support entailed training on entrepreneurship development, business planning, marketing and financial assistance in the form of seed money. Seed grant of up to Rs. 40,000 (USD 515) per beneficiary was provided (total- Rs. 4.2 million). Small-scale businesses included vegetable-selling, grocery-shop, masala-making, tiles-fitting, centering and construction, dairy, food stall, beauty parlor, among others. Grants were released in tranches ensuring utilization for the intended purpose. Begging was significantly reduced through the intervention. The project aimed at creating a colony development fund (CDF) to be used as a revolving fund for support to other residents and overall development of colony. All intervention colonies opened their CDF accounts. By March 2022, 107 beneficiaries had started contributing to the CDF account, totaling Rs. 1.33 million (32% of original grant).

Conclusion: Socio-economic rehabilitation through provision of livelihood support has positive impact on the life of persons affected by leprosy and their families, enabling dignity, demonstrated through weaning from such practices as begging. CDF helps to bring ownership and ensure sustainability of efforts.

Keywords: Leprosy, Socio-economic, Livelihoods, Rehabilitation, Dignity, Leprosy colonies

#0200/ ILCABS285

TITLE: A CROSS-SECTIONAL STUDY OF PSYCHOSOCIAL BURDEN OF LEPROSY AND ITS ASSOCIATION WITH VARIOUS CLINICAL AND DEMOGRAPHIC FACTORS AT A TERTIARY CARE HOSPITAL.

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Objective: To study the psychosocial impact in terms of anxiety, depression and dermatology life quality index (DLQI) in patients of leprosy and their association with various factors.

Methods: After obtaining institutional ethics committee approval, all adult patients diagnosed as leprosy from December 2020 to February 2021 were included in the study. The patients already diagnosed with a psychiatric illness were excluded. Patient's were assessed based on Hamilton rating scales for anxiety and depression along with DLQI questionnaire. Results were analysed for clinical and social factors associated with these.

Results: 40 patients were included in the study; a total of 28 patients (70%) had either anxiety or depression (anxiety > depression). DLQI was affected in 36 (90%) patients. Social stigma and chronicity of the disease were the most common factors associated with poorer mental health. Poor family support and presence of reactional states were significantly associated with anxiety, depression and poorer DLQI. Education levels were positively correlated with severity of anxiety, depression and DLQI. Female gender and presence of deformities were significantly associated with anxiety. Employment status and marital status weren't found to be significantly associated with anxiety, depression or DLQI.

Conclusion: Leprosy been historically associated with social stigma and isolation that still persists in various parts of the world. Despite the availability of effective treatments, the psychosocial impact of this crippling

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disease is something that is not routinely weighed upon. This study highlights the dire need of addressing the psychological aspects along with the physical aspects of the disease. As the study suggests, it becomes utmost important on a dermatologist's part to inculcate effective counselling techniques while treating these patients and refer them to a mental health expert when needed.

Keywords: Mental health, Anxiety, Depression, DLQI,

#0201/ ILCABS290

CAPTURING CULTURE-SPECIFIC STIGMA DYNAMICS BY UNDERSTANDING 'WHAT MATTERS MOST': PRELIMINARY RESULTS FROM INDONESIA AND NIGERIA

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Introduction: Research suggests that while stigma is a universal phenomenon occurring across contexts and cultures, the experiences and outcomes of stigma are influenced and defined by local cultural dynamics. Research by Yang et al. suggests that the impact of cultural context on stigma can be understood by elucidating the interactions that 'matter most' and define 'personhood' within a cultural group.

Objectives: The aim of this study is to capture culture-specific stigma dynamics by understanding 'what matters most' among people with leprosy, LF and depressive disorder in Indonesia and Nigeria

Patients / material and methods: This study adopts a qualitative approach. Data in Indonesia has been collected and data Nigeria is currently being collected. In both study sites, we aim to conduct 30 interviews and 10 FGDs with people living with stigmatized conditions and 20 interviews and 4 FGDs with health professionals and family members. Participants were purposively selected.

Results: Preliminary findings from Indonesia show that achieving personhood included key engagements within the family and community. In the family, this specifically included responsibility among men (e.g., providing for the family) and a caring role within the household among women (e.g., through caring for children). In the community, personhood was achieved by being helpful, kind and polite and engaging in 'gotong royong'. Preliminary findings from Nigeria also highlight the caring and supportive roles of women and financial support from men in the family and the community.

Limitations: This study was conducted in one subculture in Indonesia and Nigeria, which limits the generalizability.

Conclusion: This novel perspective of operationalizing 'culture' in the study of stigma will enable better planning of how to increase participants' ability to engage in core lived daily activities central to their culture, which is fundamental to recovery from stigma.

Keywords: Stigma, Discrimination, Indonesia, Nigeria

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#0202/ ILCABS301

SOCIAL TRANSFIGURATIONS, IMAGINED WELLNESS AND THE ILLNESS TRAJECTORY: A COMPARATIVE CASE STUDY OF ERYTHEMA NODOSUM LEPROSUM

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Introduction: In medical anthropology, 'transfiguration' is a conceptual tool to describe the complexities of sociality and health. This theory posits that various life experiences are integral to the illness experience and can change over time. By examining the lived experiences of leprosy reactions through the framework of social transfigurations, this paper reflects on the meanings and imaginations of wellness and the challenges and realities of living with a severe, stigmatising disease.

Methodology: A comparative case study was conducted to examine two similar yet contrasting experiences of individuals living with type 2 leprosy reactions (ENL). The cases were analysed using thematic analysis.

Description of cases: Two adults (male, Indonesia; female, India) diagnosed with severe ENL and similar prognosis. Both individuals were married with children and unemployed at the time of research participation. Health outcomes varied between both participants - the Indian female recovered, whereas the Indonesian male passed away. A comparative analysis illustrated that individual experiences with ENL are unique and the illness trajectory can be long and uncertain. The actual illness experience can conflict with individual and community perceptions and anticipations of wellness. The provision of social support is also integral to recovery, but it can be dependent on existing cultural and value systems. These systems include gender norms, familial responsibilities in the provision of home care, and trust in healthcare providers. Socioeconomic status is also vital as individuals from a low-income background experience additional hardships in accessing hospital care. Together, these experiences can delay help-seeking and worsen individual prognosis, but social imaginations of wellness can play an important role in the provision of social and financial support.

Conclusion: The lived experiences of illness are a complex interplay between social transfigurations and the illness trajectory, revealing the importance of imagined wellness and social support in living with an uncertain disease.

Keywords: Leprosy Reactions, Erythema Nodosum Leprosum, ENL, Social Transfiguration of Wellness, Indonesia, India

#0203/ ILCABS306

SOCIO-ECONOMIC STATUS AND ISSUES OF LEPROSY COLONIES IN AN ENDEMIC STATE OF CHHATTISGARH IN INDIA

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Introduction: The state of Chhattisgarh is endemic for leprosy and yet to achieve elimination as a public health problem. There are a total of 33 leprosy colonies in the state spread across 32 districts. Sasakawa-India

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Leprosy Foundation (S-ILF) works towards mainstreaming persons affected by leprosy and their families residing in marginalized leprosy colonies through socio-economic empowerment. Exploring the living conditions of residents in the colonies provides a rationale to provide services as well as serves as a baseline measure to assess outcome of interventions.

Objectives: We conducted a study to assess the socio-economic and health status of the residents in leprosy colonies in Chhattisgarh.

Methodology: Using a semi-structured interview schedule, we carried out a household survey in the 31 out of 33 leprosy colonies of Raipur, Durg, Dhamtari, Raigarh, Janjgir-Champa, Korba, Rajnandgaon and Bilaspur districts.

Results: The total population was 6,620 population within 2,169 households; 1,513 residents (22.8%) among them were found to be directly affected by leprosy. Drinking water facility through government water supply was available in 27 colonies and proper electricity connection in 21 colonies. Thirteen colonies did not have ownership of land. A mere 158 (7.2%) households had availed of government housing scheme, the remaining continued to live in kutcha (non-permanent) houses. More than half of the residents (3910) worked as daily wage labourers. Thirteen percent (917) of the population continues to beg. About 10 percent (618) people are affected by ulcers due to leprosy.

Conclusion: Socio-economic rehabilitation and empowerment of persons affected by leprosy is an important tool to mitigate stigma and discrimination. A thorough knowledge of the living conditions and issues is important to plan appropriate interventions in these marginalized colonies.

Keywords: Leprosy, Socio-economic aspects, Empowerment, Livelihood, Rehabilitation

#0204/ ILCABS330

COMPARISON OF REGULAR VERSUS IRREGULAR LEPROSY PATIENTS ON MDT TREATMENT

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Introduction: In spite of all efforts of health workers in counselling new leprosy patients on the importance of regular MDT treatment, there is high incidence of noncompliance.

Objectives:

- To find out the reasons of regularity and irregularity of leprosy patients.
- To assess the knowledge and attitude of the regular and irregular patients.

Materials and Methods: 50 patients on MDT who were regular for MDT treatment and another 50 who were irregular were selected. A questionnaire was used to understand reasons for regularity and irregularity of patients and also to study the demographics of such patients.

Results: 31% of the irregular respondents are illiterate, significantly higher than the illiterates who are regular. 36% of the regular respondents feel that taking treatment regularly will cure the disease quickly, whereas 41% of those who are irregular for MDT feel that the disease cannot be cured 32% of those who are irregular for

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their MDT said they do not have enough financial resources to take regular treatment. It was also noted in the study that the irregular respondents (24%) do not inform family members about their diagnosis because fear of stigma. Of the remaining who confided about the disease to their family members, 17% of them do not live with their family because the family members afraid that the disease will spread to them.

Conclusion: Patients who are illiterate are likely to be irregular. Financial reasons and lack of family support lead to noncompliance. People who feel that the disease is not curable are usually irregular. Identifying those with above traits at diagnosis and focusing on them with regular and frequent counselling can help to improve compliance. Lack of family support because of fear of the disease and stigma still lead to isolation of Leprosy affected.

Keywords: MDT, Compliance, Irregular, Stigma

#0205/ ILCABS350

SOCIAL PARTICIPATION AND QUALITY OF LIFE AMONG PEOPLE AFFECTED BY LEPROSY

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Introduction: Leprosy is a chronic infectious disease and it still remains a public health problem in India. Leprosy-related disabilities affect the social participation of an affected individual as well it determines the quality of life. Hence, this study aimed to assess the difference between the quality of life and participation restrictions of people affected by leprosy.

Methods: A cross-sectional study was conducted with 358 people affected by leprosy above the age of 18 years and who were reporting at a tertiary leprosy referral hospital, Purulia, West Bengal, from April to July 2017. A Semi-structured questionnaire was used to interview the participants concerning their socioeconomic and disease status. The World Health Organization Quality of life (WHOQOL-BREF) scale was used to measure the quality of life and the Participation Scale (P Scale) was used to measure participation restriction.

Results: Of the 358 respondents, 146 (41%) were female, 214 (60%) were aged between 18 to 45 years and 144 (40%) had a physical disability (grade 2). The Independent t-test performed to examine the difference in the quality of life with participation restriction of the respondents revealed that there was a statistically significant difference in participation restriction in all the four domains; physical health [p-0.00], psychological health [p-0.00], social relationship [p-0.00] and environment health[p-0.00]. The respondents who had no participation restriction had higher mean scores in all the four domains of quality of life than those who had participation restriction.

Conclusion: This study found that people who had no participation restriction had reported good quality of life compared to persons who had suffered participation restriction. Early detection and management would reduce the risk of participation restriction and it will improve the quality of life of people affected by leprosy.

Keywords: Social Participation, Quality of life, Disability, Leprosy

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#0206/ ILCABS355

A STUDY ON IMPROVEMENT OF QUALITY OF LIFE AMONG LEPROSY AFFECTED PEOPLE IN ENDEMIC DISTRICTS IN NEPAL

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Introduction: Leprosy was declared eliminated in Nepal in 2010. However, since then, the number of new leprosy cases has been steadily rising. Despite efforts to eradicate leprosy, a prevalence rate of 0.69 cases per 10,000 was recorded in fiscal year 2019/20. The HEAL Nepal initiative aims to improve the health, well-being, and dignity of leprosy patients. The study was conducted to assess the Quality of Life(QoL) of people affected by leprosy.

Methodology: WHOQoL-BREF tool was used to examine the increases in percentage points scored on the Quality of Life (QoL) tool for 285 respondents with men (140) and women (145) diagnosed with and treated for leprosy during October 2019 to August 2021. The tool comprises of a total of 26 questions with two aspects examined separately: individual's overall perception of quality of life and an individual's overall perception of their health. The four domain scores denote an individual's perception of quality of life in each domain with scores scaled in a positive direction;; higher scores denote higher quality of life.

Result: Physical domain scored 60 on a scale of 0-100 in each domain of WHOQoL-BREF, whereas it scored of 56 in the baseline. The environment domain had a score of 58, compared to a baseline of 50. Likewise, the psychological domain scored 53, compared to 50 at the start. Conversely, the social ties domain score 47, compared to 56 and at the start. In the mid-term evaluation, the social domain was reduced. From 2.4 to 2.95, the overall quality of life score improved. This suggests that the project's actions were successful in improving the overall quality of life of leprosy patients.

Conclusion: The study showed that QoL improved through early case detection, treatment and management of complications to prevent disability, empowerment of SHG members which resulted to improve QoL.

Keywords: Key words: Disability, Discriminations, Leprosy, Quality of life, Social stigma, World health organization quality of life-BREF

#0207/ ILCABS369

STIGMA EXPERIENCE, MENTAL WELLBEING, DEPRESSION AND SOCIAL PARTICIPATION AMONG PERSONS WITH DISABILITY DUE TO LEPROSY AND LYMPHATIC FILARIASIS IN NORTH INDIA

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Introduction: A large study was undertaken in Jaunpur District, Uttar Pradesh, and Bokaro District, Jharkhand, India, to establish the prevalence and geographic distribution of persons with disability due to leprosy and lymphatic filariasis (LF). The severity of impairments was also established. Over 11,000 persons were enumerated and mapped between September and December 2021.

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Objectives: The study reported here investigated the extent to which women and men with LF- or leprosy-related disability perceive and experience stigma and the extent to which their mental wellbeing and social participation are affected.

Methods: A random sample of over 400 persons was interviewed regarding stigma perception and experience (SARI Stigma Scale), mental wellbeing (WEMWBS), signs of depression (PHQ-9) and social participation (Participation Scale Short Simplified).

Results: 201 persons with leprosy-related and 240 with LF-related disability were interviewed, of whom 51% were women. A community reference sample was also included (n=98). The level of stigma experience was high; the mean SARI score was 16.4 (95% CI 14.2-18.7) among leprosy-affected and 10.2 (8.7-11.7) among LF-affected respondents. 45% and 50% had low mental wellbeing, respectively. Signs of moderate to severe depression were reported by 39% and 38%, respectively, while 41% in both NTD groups reported moderate or severe participation restrictions. In the community group, only 14% had low mental wellbeing, 14% moderate depression (none moderately severe or severe) and 6% moderate or severe participation restriction.

Limitations: Analysis of qualitative data is still in progress so only quantitative data are presented.

Conclusion: The study enumerated over 11,000 persons with leprosy- or LF-related disability in the two study districts. In a representative sample, stigma experience was high, up to 50% had low mental wellbeing, over one third had signs of moderate to severe depression and 40% moderate to severe problems with social and work participation in both NTD groups.

Keywords: Leprosy, Lymphatic filariasis, Disability, Stigma, Mental health, Social participation

#0208/ ILCABS382

PERCEPTION OF STIGMA OF LEPROSY AMONG SELF-HELP GROUPS OF EASTERN NEPAL: A QUALITATIVE STUDY

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Introduction: Although Nepal has sustained elimination of leprosy as a public health problem at the national level, the consequences of leprosy are still abundantly present. Due to stigma, leprosy has extensive negative impacts on all area of people's lives. Self-Help Groups (SHG) play a very important role in reducing the stigma present in the community, whereas stigmatization depends on culture and community. The objective of this study was to assess the level of stigma perceived by people affected by leprosy.

Methods: Explanatory Model Interview Catalogue (EMIC) questionnaire (perceived stigma) and participation scale (social participation) were administered in 75 participants of Self-Help Groups of two districts - Morang and Sunsari. Furthermore, 3 focus group discussions (FGD) with 8-10 participants were conducted.

Results: The presence of visible deformities due to leprosy was one of the most important factors for stigma in rural community. The intention of hiding physical deformities and disease due to fear of potential discrimination further increases the stigma. The existence of discrimination still prevails, but to a lesser extent in comparison to earlier days. It was found that SHGs have started saving and credit schemes and comprise of a mix of people affected by leprosy, widows, elderly people, those in poverty and people with disabilities. The

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SHG members revealed that they were satisfied with their affiliation, it gives them self -confidence, dignity, and economic strength.

Conclusion: Inclusive participation in SHGs by people affected by leprosy and people with other disabilities contributes to a reduction in perception of stigma and discrimination and increases self-respect and dignity. In addition, the reduction in stigma in the SHGs in Morang and Sunsari might be due to the community engagement, regular follow up and awareness activities of Heal Nepal project, implemented by The Leprosy Mission Nepal and Funded by UKaid Match Grant YFMF-SESJ-LU.

Keywords: Heal Nepal, Leprosy, Stigma, Self-Help Group (SHG), Discrimination

#0209/ ILCABS396

ASSOCIATING SOCIODEMOGRAPHIC AND CLINICAL VARIABLES WITH NON-SPECIFIC PSYCHOLOGICAL DISTRESS AND DEPRESSION AMONGST PERSONS AFFECTED BY LEPROSY

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Introduction: India constitute about 60% of new cases of leprosy globally each year with nearly 120000 being diagnosed each year. More than 65% percentage of Indian population lives in rural India.Psychological distress adversely impacts daily functioning of persons affected by leprosy. whilst combatting stigma, stereotyping, exclusion, discrimination experiences in routine life and dealing with leprosy reactions, risk of developing deformities and disfigurement. Common mental health conditions including depression are known to affect persons affected by leprosy. No studies have reported sociodemographic and clinical variables associating with self-reports of psychological distress and depression amongst persons affected by leprosy in rural India.

Objective: To report on sociodemographic and clinical profiles of persons affected by leprosy reporting depression and psychological distress

Methods: As part of an ongoing project in a rural district of North India, persons affected by leprosy availing care services are being evaluated with structured sociodemographic and clinical proforma alongside Kessler Psychological Distress Scale- 10 and Beck Depression Inventory. This convenient sample includes consenting persons affected by leprosy aged 18-60 availing of hospital or community-based care services. Diverse participation based on age, gender, education, disability, chronic reactions, occupation, economic background etc. has been emphasized.

Results: Results from the cross-sectional assessments are being collected and will be presented at the conference.

Limitations: This study has a cross sectional design. Participants have been selected purposively and, in a respondent driven fashion. However, considering the stigma associated with leprosy and the urgent need to report on mental health challenges faced by persons affected by leprosy, this appears the best method of recruiting participants.

Conclusion: This study is amongst the first reports highlighting psychological distress and common mental health conditions amongst persons affected by leprosy in rural India.

Keywords: Leprosy, Psychosocial, Distress, Depression

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#0210/ ILCABS398

IMPACT OF NURSING SCHOLARSHIP PROGRAM FOR CHILDREN OF LEPROSY AFFECTED FAMILIES RESIDING IN LEPROSY COLONIES

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Introduction: In terms of aspirations, girls belonging to leprosy affected families residing in marginalized colonies, express strong desire to become nurses. This remarkable intention stems from their personal experience having to look after their parents or colony residents' ulcer care needs and lack of proper care by healthcare providers. Since 2011, Sasakawa-India Leprosy Foundation (S-ILF) has been providing merit-based scholarships for undergoing nursing course. This is a pan-India program.

Objective: We undertook an analysis of the Nursing Scholarship program through interviews with scholars.

Methodology: A total of 571 applications have been received under the Scholarship Program. Based on merit-cum-interview, 146 scholarships have been provided till date. The state-wise break-up reveals majority of selected scholars are from the states of Tamil Nadu (26), Chhattisgarh (23), Bihar (21), Madhya Pradesh (15), Uttar Pradesh (14), West Bengal (13), Jharkhand (10), Maharashtra (10), Orissa (5), New Delhi (4), Uttarakhand (2), Haryana (2) and Telangana (1). Out of the total enrolled, there were five drop-outs (2 passed away and 3 were not able to cope up with the course) and 51 have completed their course successfully. Currently, 48 are in jobs in private and public healthcare sector and 3 are pursuing further studies. Monthly salary ranges from 10,000 INR – 60,000 INR (128 USD to 773 USD). These scholars have become role models in leprosy colonies and have helped to motivate other children towards pursuing higher education.

Conclusion: Girls from leprosy colonies usually drop out after completing high school due to lack of financial resources. S-ILF's Nursing Scholarship Program bridges the gap between their circumstances and their aspirations to become dignified, responsible and financially independent women. The program has not only changed the lives of scholars and their entire families, but also colonies and society through their contribution as healthcare provider.

Keywords: Leprosy, Nursing Scholarship, Education

#0211/ ILCABS406

UNDERSTANDING THE LIVELIHOOD ASPIRATIONS, OCCUPATIONAL AND SKILL PREFERENCES OF PERSONS AFFECTED BY LEPROSY/DISABILITY IN THE DISTRICTS PRAYAGRAJ AND BARABANKI OF UTTAR PRADESH AND JANGIR CHAMPA IN CHHATTISGARH.

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Introduction: Chattisgarh state has a large tribal population and still endemic to leprosy, 70% of the marginalized population are engaged in casual wage labour.

Uttar Pradesh is the largest State in India in terms of population contributes about 16.49% of total country population. 65% of the marginalized population are engaged in casual wage labour.

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People affected by leprosy and/or disabilities in both the states experience high level of stigma and discrimination, this has resulted in deprivation of livelihoods and earning options for persons affected by leprosy and/or disabilities. The present study was initiated in the project area during the project duration.

Objective: To understand the livelihood aspirations and, occupational and skill preferences of persons affected by leprosy/disability of the project districts of Uttar Pradesh (Prayagraj) and (Barabanki) and Chhattisgarh (Jangir Champa).

Methodology: The Study adopted a mixed methodology for data collection - primary data and secondary data. The primary data collection was done using structured tools -structured interviews using data collection questionnaires and Focal group discussions . Data was analysed using data analysis techniques and Microsoft excel. Extensive review of secondary data was done to supplement the primary data.

Limitations: Data collection face major challenges during COVID-19 pandemic and lockdown.

Results & conclusion: 70% of the potential participants who attended secondary level education and more than 50% of the potential participants who have attended primary level education, 61% of the female respondents across all the education levels and age groups wanted to attend livelihood skill training to start their own business

The two trades (Tailoring and Beautician course) are over saturated and undervalued, remain the most popular preferences for the potential trainees

The contributing factors for entrepreneurial motivation was to get over shortage of money and making family rich.

Agri-businesses as potential self-entrepreneurship options.

Keywords: Leprosy, Disability, Livelihood, Entrepreneurship

#0212/ ILCABS415

ENGAGING WITH LEPROSY-ENDEMIC COMMUNITIES IN PAPUA, INDONESIA, TO ENHANCE CASE FINDING, RECRUITMENT AND RETENTION IN THE METLEP TRIAL (NCT05243654)

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Introduction: Leprosy-related stigma and discrimination are major barriers to implementing effective healthcare programmes and negatively impact health-seeking behaviour.

Objective: Understanding the socio-health aspects in leprosy-endemic communities in Papua, Indonesia.

Methodology: We performed a community-based cross-sectional study in Jayapura, Papua, using the NLR Perception-Study-Toolkit. The Toolkit consists of three interview-administered questionnaires that assess information on Knowledge, Awareness, Practices (KAP-score: 0-9) and stigma (EMIC-CCS-score: 0-30;

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SDS-score: 0-21). Twenty-nine semi-structured-interviews were conducted among a subset of participants to explore emerging themes. Quantitative and qualitative data were analysed using multivariable linear regression and thematic analysis, respectively.

Results: 409 participants (³18 years) comprised 74 persons affected by leprosy, 126 contacts, 158 community members and 51 healthcare workers (HCWs). Overall mean KAP-score was 4.5 (SD 2.1); the community scored lowest (mean 3.7, SD 2.1) and HCWs highest (6.1, 1.9; p<0.001), with those involved in leprosy care scoring higher (8.3, 1.0) than those not involved (5.9, 1.8; p=0.014). Mean EMIC-CCS-score was 13.7 (SD 6.7) and SDS-score 4.3 (4.3); stigma-scores were highest among the community (14.9, 6.6; 4.8, 5.2, respectively) and lowest among contacts (12.3, 7.0; 4.0, 4.2, respectively). In multivariable analysis, lower KAP-scores were associated with younger age, Islam and low level of education. Higher EMIC-CCS-scores were associated with males, Christians, high level of education, and not having a relationship with an affected person; and higher SDS-scores with older age, Christians, never married, low level of education and not having a relationship with an affected person. Interviews revealed misconceptions on transmission of leprosy among the community and non-leprosy HCWs leading to fear. A range of stigma experiences were described by affected persons and HCWs stemming from limited education/training and resource allocation, as well as community perceptions more broadly.

Conclusion: Study outcomes will guide tailored engagement activities aimed at improving leprosy literacy, reducing stigma and optimizising trial uptake.

Keywords: NTD, Leprosy, Stigma, Discrimination, Knowledge, Beliefs

#0213/ ILCABS417

A STUDY OF DERMATOLOGY LIFE QUALITY INDEX IN LEPROSY PATIENTS ATTENDING A TERTIARY CARE CENTRE OF HYDERABAD

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Introduction: WHO has defined "Quality of Life" as the individual's perception of their position in the context of culture and value systems in which they live and in reaction to their goals, expectations, standards and concerns. Physical activity, psychological condition, degree of independence and social relationship are important aspects need to be considered in Quality of Life.

Objectives: To asses clinical signs, symptoms and demographic profile of disease and their affect on Quality of Life in patients with leprosy attending tertiary care hospital using Dermatology Life Quality Index (DLQI) as a tool.

Material and Methods: This was a cross sectional observation study on all the leprosy patients attending the dermatology department of tertiary care hospital. Patient who are willing to participate are included and one with debilitating disease, psychiatric problem, and other medical conditions which may have an impact are excluded from the study. DLQI questionnaire developed by Professor A Y Finlay and colleagues was used as study tool.

Results: Out of 106 patients, 48(45.2%) patients had moderate impact on quality of life. Mild impact was seen in 34(32.07%) patients and 19(17.9%) patients with Nil impact on quality of life. Very less number of people had severe impact on their quality of life. Fortunately, no patient had very severe impact on their

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quality of life. Many patients with debilitating symptoms, disability, deformity and reactions had major affect on quality of life.

Limitations: Small sample size, less number of patients with deformities.

Conclusion: Clinical signs and symptoms of leprosy had moderate impact on quality of life. Demographic factors have very less impact on leprosy. Although deformities and disabilities are less in present study, they will have severe impact on quality of life.

Keywords: Quality of life, Psychological, Degree of independence

#0214/ ILCABS422

JOURNEY OF ALMOST OSTRACISED MAN TO A NEW HORIZON

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Introduction: Throughout history, leprosy is feared;a whole myths and misconceptions surround the disease since time immemorial. Even after discovering the jerm that causes the disease, leprosy patients are stigmatized and stunned. They are disparagingly called 'lepers' and many of them are forced to live as outcasts in leprosy colonies.

Description of case: This is a story of a 5 years old boy named Kartick Kalindi from Durgapur, West Bengal, who studied in a government school. While growing up, he had lived with constant fear of facing discrimination in school. His nightmare came true one day as few of his friends came to know that his grandparents were lepers, and hence they stopped sharing meals with him. Gradually, he realized the challenges faced by residents due to stigma & discrimination. As days passed by, it became clearer to him that he wanted to improve the socio-economic condition of residents. He started providing free tuitions to children, collected donations that helped distribute basic medicines and food to families and conducted leprosy awareness camps at public places in the city.

At present Kartick, a 32 years diploma holder from IIT Kharagpur, is open to talk about leprosy and advocate for the cause in appropriate forum. He is committed to fulfil his mission to uplift the socio-economic status of colony residents. He has always played a pivotal role in securing government schemes and benefits. He started setting up primary school, community centre and children park in the colony. He supported in establishing self- help groups (SHGs) and run income generation activities such as vermicomposting, organic farming, mushroom cultivation etc. As a result, over 120 residents have been benefited.

Conclusion: The support rendered to leprosy colony need to shift from charity mode to incremental development mode, so that such colonies are developed.

Keywords: Kartick, Leprosy, IIT Kharagpur, Horizon, Journey, Ostracised

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#0215/ ILCABS443

HERO OR VILLAIN? PRESERVING HANSEN'S LEGACY IN BERGEN, NORWAY

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Introduction: 149 years after Gerhard Armauer Hansen's discovery of *M. leprae*, two competing historical narratives exist. 1) Hansen's discovery turned leprosy from a divine curse to a disease rooted in material medicine, disenchanting superstition, and marking the beginning of the fight against stigma connected to the disease. 2) The discovery became proof that the disease was contagious, justifying prophylaxis based on cruel segregation, fueling stigma, and justifying unethical human experiments.

This presentation will discuss how Hansen's legacy is preserved and communicated in Bergen, Norway. Was Hansen a hero, a villain – or perhaps a bit of both?

Description of the case: This paper presents and compares the two museums where Hansen's legacy is presented to wider audiences in Bergen, Norway: The Leprosy Museum, and the Armauer Hansen Commemorative Rooms. The first focuses on the more than 500-year history of the leprosy institution, in particular the lives of the people affected by the disease. The second examines the medical research and the public health campaign that started around 1850, and that got a new rationale after Hansen's research.

The exhibitions communicate pride in a successful public health campaign that managed to curb the number of new cases, putting Bergen on the map as a site for research, but also asks "at what price?". The court case that led to Hansen losing his right to practice medicine, after an experiment on the patient Anne Nielsdatter Spidsøen, is presented in the same display as Hansen's highest honors.

Conclusion: Hansen's legacy is presented "warts and all", based on a belief that the past has lessons to learn from. Rather than giving all the answers, a visit to one of the museums is a conversation starter for the dilemmas society face when faced with

Keywords: History of leprosy, Gerhard Armauer Hansen, The Leprosy Museum, The Armauer Hansen Commemorative Rooms

#0216/ ILCABS456

SUSTAINABILITY OF COMMUNITY-BASED SELF-HELP PROGRAMMES IN THE CONTEXT OF LEPROSY AND THE WORK OF LEPROSY MISSIONS.

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Introduction: To break the vicious cycle of poverty and poor health outcomes associated with leprosy, self-help groups (SHG) have been implemented, based in communities and involving the formation of groups of people who can provide mutual support and form saving syndicates.

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Objectives: Our objective is to determine the extent to which SHG programme activities have continued in the time beyond the funding period and record evidence of sustained benefits, at four study sites across three leprosy endemic countries.

Methods: We will retrieve and analyse any project documents. This will be followed by semi-structured interviews with people involved in delivery of the self-help intervention, potential beneficiaries and people in the wider environment who would have been familiar with the programme. Interviews aim to identify barriers and facilitators to success and sustainability. Data will be analysed thematically and compared across groups and countries.

Impact: Comparative analysis of data from across the four geographical areas will result in a comprehensive investigation of the concept of sustainability SHG programmes for people with leprosy, disability, other conditions causing ulcers or marginalised, once funding has ceased.

Our findings will have implications for a wider population as people affected by leprosy are in the minority in the self-help groups in all of our participating countries.

Limitations: There is a risk of bias and conflict of interest as interviews will be conducted by individuals from the implementation organizations. We also expect recall bias as participants will be asked to recall events from their past. We expect that our triangulation of methods and data sources will somewhat mitigate the bias.

Conclusions: While there is literature on the existence of SHGs and their effectiveness during the funded periods, little is known about the sustainability of these interventions. Our study will help answer this knowledge gap.

Keywords: Leprosy, Disability, Sustainability, Self-care, Self-help groups, Evaluation

#0217/ ILCABS465

DEPRESSIVE SYMPTOMS AMONG PEOPLE LIVING WITH LEPROSY, COMPARATIVE STUDY FROM INDONESIA AND NIGERIA

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Introduction: Leprosy remains a problem in Indonesia and Nigeria. Long-term disability and stigmatization are common, but little is known about the mental health status of persons affected by Leprosy.

The aim of this study is to gain understanding of the depressive symptoms among people affected by Leprosy in Indonesia and Nigeria.

Method: This study was part of a larger qualitative three-country study to capture culture-specific stigma of people with Leprosy by understanding of 'what matters most'. In this paper we report the preliminary findings of the mental health picture from Indonesia and Nigeria. Data collection was conducted in Indonesia from Oct-Dec 2021, and in Nigeria started in May 2022 (is still an on-going process when abstract submitted)

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using PHQ-9 questionnaires. Purposive sampling was used to include people 18-65 years old diagnosed with Leprosy no longer than 3 years, considering characteristics such as gender and location.

Results: Preliminary findings from Indonesia (data from Nigeria would be added and present at the conference later) of the total 38 respondents, only 10,5% had mild depressive symptoms, all were men. 55,3% respondents reported having 1-6 mental health problems for several until almost every day. Most of them have little energy, feel depressed or hopeless, and have trouble falling asleep. Generally, however, they stated that have no obstacles in their activities outside, at home, and in social interactions.

Limitations: The sample was selected purposively and the sample size relatively small. Measures were not compared with the general population and not supplemented yet by the qualitative data. There are 2 items not valid and scale with moderate reliability.

Conclusion: More than half of people with leprosy have at least a symptom of mental health problems which may require social support, psychoeducation if worse, especially from mental health care service for Leprosy and repeated screening at follow-up.

Keywords: Leprosy; Indonesia-Nigeria; depression; depressive symptoms

#0218/ ILCABS466

LESSONS LEARNED FROM AN AUTOMATED PHONE CALLS AND SHORT MESSAGE SERVICE (SMS) CAMPAIGN THROUGH INTERACTIVE VOICE RESPONSE SYSTEM (IVRS) TO DISSEMINATE AWARENESS ABOUT LEPROSY IN CHANDAULI AND FATEHPUR DISTRICTS OF UTTAR PRADESH, INDIA

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Introduction: Lack of adequate knowledge about leprosy among the mass is a key challenges in early case detection and treatment, as people having suspected signs and symptoms of leprosy do not visit health facilities for diagnosis and confirmation.

Objectives: To describe lessons learned from automated phone calls and short message service (SMS) campaigns to improve perceptions of leprosy.

Methods: An Interactive Voice Response System (IVRS) consisting of automated phone calls and SMS that used mobile phone-based platform was used. Five types of automated calls in the form of dialogues and five types of text messages related to symptoms, cause, mode of transmission including inclusion of persons affected, preventive therapy, and treatment of leprosy were developed and sent to mobile phone subscribers in Chandauli and Fatehpur districts, Uttar Pradesh. The messages were disseminated to subscribers from May to September 2020, through IVRS. In January to February 2021, the intervention was followed up through real time caller-based telephone interviews.

Results: SMS messages reached a total of 28,855 phone subscribers. Among this group, 25% of them picked up automated calls, 72% of whom listened to the call content. A total of 1,218 subscribers, selected randomly from among those who received the SMS and/or calls, were followed up through telephonic interviews. Of the 1,218 participants, 203 (17%) remembered receiving either SMS or an automated call, however only a minority of them seemed to remember anything of the content of the messages.

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Limitation: There was a gap of over 4 months between the end of intervention and follow-up interviews, thus the recall rate was low.

Conclusions: SMS and automated calls reached out to a large population as majority (around 80%) of rural population uses mobile phones. For subscribers to remember the content, it may be necessary to have a sustained delivery of messages.

Keywords: Leprosy, Automated phone calls, Short message service (SMS), Interactive Voice Response System (IVRS), Mobile phones, Perception of leprosy

#0219/ ILCABS468

PARTICIPATION OF PEOPLE AFFECTED BY CONDITION IN THE COMMUNITY AS THE KEY ACTIVITY AGAINST STIGMA: PRELIMINARY FINDINGS OF WHAT MATTER MOST STUDY AMONG PEOPLE AFFECTED BY LYMPHATIC FILARIASIS, LEPROSY AND DEPRESSION DISORDER IN INDONESIA.

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Stigma frequently experiences by people with chronic diseases. The drivers and causes of stigma may vary among people but there are similarities in terms of the manifestations such as exclusion, avoidance, and withdrawal. Some of these experience have hampered people from reaching what matters most in their life. Culture plays an essential role in shaping the perspective of people and their needs, including the ways that people can see and experience stigma and what matters most in their community.

This study aims to identify what matters most in shaping and reducing stigma among people affected by leprosy, depressive disorder and lymphatic filariasis in Cirebon, Indonesia.

A cross-sectional qualitative study was conducted to explore what shapes stigma and how culture influences people's perspectives. This study applied the what matters most framework that allows researchers to explore the most important things in people's lives and how culture shapes their perspective. About 120 informants with gender, age and conditions (leprosy, LF, and Depression disorder) were interviewed using in-depth interviews (50) and FGD (14).

One of the key cultural engagements that define 'full personhood' for people affected includes being a part of the community. Participating in social events and religious gatherings and contributing to and assisting the community and environment was key for achieving 'full status'. Failing to achieve this will draw people affected into devaluating life.

This study was conducted in one subculture. Considering the diversity of subcultures in Indonesia, it would be helpful to replicate this study in another subculture region to validate these findings

Being a part of the community is one of aspects that the matters most among people affected by the three conditions. Therefore, it is important that stigma reduction interventions consider developing an inclusive community that allows people affected to participate

Keywords: What matter most, Stigma, Community, Participation, Inclusive, Qualitative

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#0220/ ILCABS470

THE VALIDITY AND RELIABILITY TEST OF THE LEPROSY LIFE QUALITY QUESTIONNAIRE IN LEPROSY PATIENTS

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Introduction: In 2018, WHO reported that Indonesia ranks 3rd in the number of new cases of leprosy. Leprosy causes disabilities that significantly influence patients' quality of life. Until now, there is still no specific questionnaire to assess the quality of life for leprosy patients. Data on the patient's quality of life provide a more comprehensive view of the patient's condition to determine the optimal specific therapy.

Objective: This study aims to assess the validity and reliability of the Leprosy Quality of Life Questionnaire (KUKUH) as a tool to assess the quality of life of leprosy patients in Indonesia.

Patients and Methods: The study population was patients aged 18-60 years, diagnosed with grade 0-2 disability in pauci- and multibacillary leprosy who went to Dermatology and Venereology Clinic, Saiful Anwar Hospital, and at the Malang Public Health Center, East Java. The research subjects were 30 people who filled out the KUKUH Questionnaire which includes questions about psychology, physical health, social environment, and treatment. Validity was analysed using construct validity with a minimum correlation coefficient value considered valid by 0.3. Internal consistency assessment for KUKUH Questionnaire utilized the Cronbach α value where a value ≥ 0.60 is acceptable, and a value ≥ 0.80 is considered good.

Results: All items measuring each aspect have correlation coefficient values with a total score (riT) > table correlation value (0.361). Therefore, the questionnaire items were declared valid. The items that measure each aspect of the quality of life produce Cronbach's Alpha values > 0.6. So, the questionnaire items were declared reliable.

Limitation: The KUKUH Questionnaire can be applied limited to Indonesian speaker.

Conclusion: The validity and reliability of the KUKUH Questionnaire are considered quite good. The KUKUH questionnaire can be used as a measuring tool to assess the quality of life of leprosy patients in Indonesia.

Keywords: Leprosy, Questionnaire, Indonesia

#0221/ ILCABS474

CAREGIVERS' ROLES IN ENCOURAGING PEOPLE LIVING WITH LEPROSY TO ACHIEVE THEIR FULL STATUS

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Introduction: Stigma has an impact on people living with leprosy (PwL) and depression disorder (DD). Caregivers, including healthcare workers and family members, see these patients regularly and have an opportunity to help them achieve what matters most in their life.

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Objectives: The purpose of this research was to understand health providers' and family member perspective on their roles to encourage stigmatized people to achieve their full status.

Methods: A qualitative study using focus group discussions (FGDs) and in-depth interviews was done in Cirebon District in West Java Province from October to December 2021. Five participants in each group for 4 FGDs and 20 in-depth interviews (40 in total) were purposively selected from health care providers of primary health care (PHC) and family members of PwL and DD. Questions were focused on what matters most (WMM), effort to gain full status, and the role of caregivers in helping the stigmatized person in achieve WMM on their life. The data was analyzed thematically using an integrative inductive deductive approach.

Results: The perspective of caregivers in this study regarding what matters most for stigmatized groups was focused on completing treatment by persuading them to continue their medication. The findings also indicated that caregivers were aware of social stigma as an obstacle in gain their full status. Both should provide support, trust, affection, increase self-esteem through regularly counseling, and educate the community about the diseases.

Limitations: Our study has several limitations. It did not elaborate quality of services provided by informants. Also, we did not triangulate information with other key informants, since it was not the main objective of our study.

Conclusion: Psychosocial support for people living with stigma-related diseases was still needed in primary health care but also the family.

Keywords: Caregivers, Health worker, Family member, What matters most, Stigmatized, Leprosy

#0222/ ILCABS475

FACTORS, CAUSES AND NEEDS: REPEATED HOSPITAL ADMISSION FOR PEOPLE SUFFERING WITH LEPROSY COMPLICATIONS

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Introduction: Average 2,500 people annually need hospital admission due to leprosy complication services, provided by 3 govt. and 3 NGO managed hospitals. The service is not available and accessible in tertiary and district level hospitals. Besides that, economic hardship, job nature, lack of self-care, and inadequate family support causes frequent admission to designated leprosy hospitals.

Objective: To explore the factors, causes and needs of repeated admission to hospital for people suffering from leprosy related complications.

Material and Methods: A cross-sectional study, data collected from 41 admitted patients (males-29 and females-12) in designated 2 leprosy hospitals during 2022.

Results: 75.61% were admitted for ulcer care, 12.2% for physiotherapy and 7.32% for reaction management services. In addition, 41.47% were admitted for assistive devices

Among ulcer care patients 56.10% did not practice self-ulcer care regularly

Average 13 years respondents are receiving hospitalized services from designated hospitals DBLM-56.10%, Mohakhali-38.21%, Medical College-5.69% respectively

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Respondents averagely 2.5 times a year seek admission to hospitals e.g., 82.93% 1-2 times, 9.76% 3-4 times and 7.32% more than 5 times a year

Admitted patients at present are staying on an average of about two months for receiving service e.g.; 39% for one month, 34% for two months and 27% for more than two months

About 32% of respondents admit along with medical services e.g. social sigma 15%, accommodation 12% and food facilities 5% approximately 75% of respondents are unable to work and dependent on their family members

Limitations: Small sample size that covered 2 hospitals.

Conclusion: Study findings suggested that significant number of persons with leprosy complications are admitted repeatedly and a portion of them are admitted beyond medical perspectives. Self-care, social inclusion, alternative livelihood and digital care can reduce repeated hospital admission.

Keywords: People suffering from leprosy, Complications, Repeated admission, Self-care

#0223/ ILCABS476

LIFE OF PEOPLE AFFECTED BY LEPROSY IN COVID-19 PANDEMIC IN BANGLADESH!

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Introduction: The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is also devastating (WHO). In Bangladesh total 19,53,507 cases have been confirmed with the death of 29,131 citizens till 31 May 2022. COVID-19 also had an impact on the lives of people affected by leprosy and their existing socio-economical and physical burden.

Objective: Understanding the effect of COVID-19 on the social and economic situation of people affected by leprosy in Bangladesh.

Material and methods: Cross-sectional survey and qualitative data collected (March to August 2021) through face-to-face and telephone interview from 255 people affected by leprosy (female 49%, male 51%) from 17 districts.

Results: Only 23% used the safety measures while going outside 76% respondents faced financial difficulties, 25% had no income and nearly 50% faced food crisis 72% mentioned COVID-19 was a barrier in accessing healthcare service 58% said mentally they were not good due to social isolation and 33% had experienced negligence from others 33% said they had to take loan, use saving and sold valuables for buying food and other essentials Only 1% of the respondents or their family members were tested COVID-19 positive. None of respondent and their family were vaccinated but 58% wanted to be vaccinated

Limitations: COVID-19 impacted the data collection and telephone interview.

Conclusion: COVID-19 isolation increased loneliness, created more health risk and mental stress to persons affected by leprosy. Most of the families became poorer and fell in food shortage. To overcome this situation targeted program is required especially restoring their income options, COVID-19 vaccine and mental support. Leprosy actors need to advocate with state for developing inclusive and emergency program.

Keywords: COVID-19 Impact, Person Affected by Leprosy

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#0224/ ILCABS483

AN EXPERIENCE OF APPLICATION OF HOLISTIC APPROACH IN SOCIAL REHABILITATIONS BY A GRASSROOT ORGANIZATION NAME LITTLE FLOWER LEPROSY WELFARE ASSOCIATION, BIHAR, INDIA

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Introduction: An experience of application of holistic approach in social rehabilitations by a grassroot organization, name, little flower leprosy welfare association that started its work on the rehabilitation of leprosy affected people, before any other organization; including the central and state government initiatives, in Bihar.

Objective: To rehabilitate the leprosy affected people and eliminate the leprosy disease in Bihar

Method: The physical experience and its data.

Results: Leprosy can be controlled and transform the lives of leprosy affected people if holistic approach is applied with the coordinated efforts of stake holders in the same area. The coordinated effort also created a resource network of partnership for us and has reduce the cost of operation on ground by avoiding the duplication of similar work. Joint efforts expedite transformation if coordinative effort reaches on ground. Our experience of working with LEPRA Bihar, Damien Foundation Bihar, Rising Star India and USA, Sasakwa Foundation, Ananda Ban Leprosy Hospital Nepal, Rotary Clubs of Nepal, Nepal, Bihar State Government, District Collector Offices, and many more organizations says this is only way we can effectively deal the life of those who are the victim of social injustice along with natural injustice. We say it because of it we were able to save more than one lakh lives, transform the lives of 200 families of leprosy affected people through higher education of 21 colonies of northern and poorest belt of Bihar.

Limitations: We got challenges in delivering the basic services to the leprosy affected people and their family.

Conclusions: The presentation will touch several aspects of epidemiology and control, clinical, social, laboratory, therapeutics, disability and rehabilitation. It takes the experince and results as how were theses aspects were dealt with on ground by collaborative efforts.

Keywords: Little, Flower, Leprosy, Welfare, Association, Bihar

#0225/ ILCABS484

LEPROSY AS A PASSWORD TO RE-ENCHANT PRIMARY CARE FOR PERSON, FAMILY AND COMMUNITY-CENTERED CARE

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Introduction: The re-enchantment from leprosy as a password broadens the horizons in the perspective of the expanded clinic with teams that insert references of community care in the organization and assistance aimed at people affected by leprosy, such as Popular Health Agents. Objective: To report challenges of Primary Care

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(PC) as an organizer of the network and care from the execution of the "Leprosy in a Network' Project in the municipality of Mossoró, Brazil. Methods: When outlining the project's objectives, the main problems in the projects previously executed on the local network were analyzed. The team evidenced: actions/training centered on medical and nursing professionals, care centered on the biological dimension, vertical management without encouraging popular participation, language distant from the local reality, campaigning actions that do not develop coordination and longitudinality of care. Based on these premises, the project structured a path to identify the learning needs of participants in municipal management, family health support center, rehabilitation center, workers in the Family Health Strategy and users. The needs raised were: to rescue the sanitary responsibility of the teams that work in PC, to recover the meaning of PC attributes, to improve connection between the teams and the community. Result: This step was important to re-signify the training process that, through participatory methodologies, generated involvement, highlighting the potential of the performance of teams and community, which are: action of the multiprofessional team with Community Health Agents and Social Workers in the management of care aimed at users, and inventive capacity of teams and community in producing responses to certain demands and a desire to learn new approaches to care. Conclusion: The loving, supportive and emancipatory formative process can create paths for an interprofessional and community approach that provides protagonism to people, families and communities, and enhance PC's resoluteness.

Keywords: Leprosy, Primary Care, Family Health Strategy

#0226/ ILCABS499

LIFE TRANSFORMATION THROUGH LIVELIHOOD DEVELOPMENT FOR PEOPLE WITH DISABILITY DUE TO LEPROSY

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Introduction: About 5.43% of new leprosy cases are diagnosed with grade 2 disability at the time of registration (2021 data) and most of them are vulnerable and they live below the poverty line in rural areas. The Leprosy Mission International Bangladesh is facilitating about 1500 Self-Help Groups (SHGs) and self-help saving for the social and economic empowerment of persons affected by leprosy, persons with disability and other vulnerable.

Objective: Effectiveness of income generating support on the economic and social transformation of persons with leprosy disability.

Material and Methods: A Cross-sectional study supported by NOREC. Data collected from 129 SHG members (male 40% and female 60%) in 2021 in 9 districts. The result describes perception of 43 persons (female 42% and male 58%) with disability due to leprosy.

Results: Among respondents with leprosy disability, 40% are foot drop, 28% claw hand, 26% multiple disability and 7% with other leprosy related disability. 84% of respondents receiving income generating support are engaged in agriculture sector (e.g., farming, poultry and livestock rearing) and 16% in small business (e.g., tea stall, grocery and betel leaf shop). 95% of respondents said their income increased, 49% said saving increase and 26% said family income and expenditure is balanced. 93% said their acceptance has increased among family and friends and 91% said their priority has increased in family decision-making.

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86% said their social acceptance has increased and 96% said they are experiencing positive behavior from neighbors.

Limitations: COVID-19 and small sample size.

Conclusion: Findings suggest if actors support in suitable and marketable income options, people with leprosy disability can improve their livelihood and regular income can break the cycle of poverty. It can also contribute in social inclusion.

Keywords: Life transformation, Income generation, Social inclusion

#0227/ ILCABS528

LEADERSHIP ROLE OF PERSONS AFFECTED BY LEPROSY IN THE LIVES OF SELF-HELP GROUP (SHG) MEMBERS

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Introduction: Ultimate purpose of Self-Help Groups (SHGs) is to empower and mainstream people affected by leprosy and build their leadership capacity towards fighting against stigma, discrimination and sustainable livelihood support for themselves and their family members. Leadership from people with leprosy experience are key for understanding their feelings, needs and commitment to the continuation of SHGs.

Objective: To understand the contribution of leaders with leprosy experience in finance and accessibility to entitlements for SHG members in working areas of The Leprosy Mission International Bangladesh (TLMIB).

Material and Methods: A cross sectional mixed method study, data collected from 88 PAL leaders (male-57%, female-43%) and 169 members (males-41%, females-59%) from 88 SHGs during 2021 in 10 districts.

Results: - 75% members said they deposit saving regularly because of leaders' encouragement and 81% leaders said they encourage members for depositing saving timely.

- 65% members refunded loan due to motivation of leaders and 86% leaders influenced members to pay their loan instalments regularly.

- 33% members engaged in income generating activities (IGAs) under guidance of leaders and 96% leaders stated IGA was an agenda of SHG meetings.

- 70% members said their communication skills and health practices have improved. 94% leaders said they discussed the issues in SHG meetings.

- 34% members accessed social safety net services due to advocacy and active cooperation of leaders. 81% leaders discussed government facilities in SHG meetings.

Limitations: Data was collected from 88 out of 1500 SHGs under TLMIB.

Conclusion: Results show that leadership impact of leaders with leprosy experience in the SHGs is quite high. Facilitating organizations should take necessary measures in capacitating leaders with leprosy experience on networking and financial management and proportionate of leadership in SHG should be balancedas their commitment and skill could be one of the sustainable elements of SHGs.

Keywords: Self-Help Group (SHG), Leadership, Persons affected by leprosy

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#0228/ ILCABS537

SUPPORT PROJECTS FOR THE PEOPLE AFFECTED BY HANSEN'S DISEASE AND THEIR FAMILIES ON HOW THEY CAN BE FULLY RESTORED BACK TO THE SOCIETY

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Introduction: Hansen's disease in Korea have been fully cured as of today. Through various self-support projects and engagement in different economical activities, they were able to successfully achieve social integration, restore back self-value and dignity. The discrimination was not only to the recoverees but to the families as well. IDEA Korea sponsored various social recovery projects, which other countries can consider as we were able to pioneer in enabling Korean recoverees to successfully integrate back to society.

Method: The first step was the establishment of donor's group, the IDEA Korea. Initially composed with recoverees but as it grew over the time, currently 40% are recoverees and 60% who aren't. Such enabled the smooth integration as both work together to support programs in different countries as IDEA Korea projects aims to support the next generation of recoverees, especially towards low-income families with social awareness campaigns, funding school construction and operations, scholarships, and technical training for different job opportunities.

Result: For social integration of recoverees and their families, our projects on school constructions, scholarship, and training programs provided the platform for them to gain self-confidence, recover back human rights, and be influencial in the society. Furthermore, our projects are being complimented to various sectors as it became a platform to increase their quality of life.

Conclusion: We need to continuously support projects for recoverees and their family in different countries. We need to give opportunities enabling them to mingle with the community and take significant social roles. That way, they will be the instrument to address the social discrimination, lead to solve economic, psychological, and rehabilitation relation problems existing against Hansen's disease recoverees.

Furthermore, the successful story of IDEA Korea's projects can be the role model for other countries to follow.

Keywords: IDEA, Korea, Integration, Dignity, Advancement

#0229/ ILCABS539

DISABILITY INCLUSIVE DEVELOPMENT: A POWERFUL, EMPOWERING AND OWNERSHIP MODEL FOR PERSONS AFFECTED BY LEPROSY AND DISABILITIES

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Introduction: Persons affected by leprosy and related disabilities suffer from discrimination, exclusion and multi-dimensional poverty. An Indian NGO's path-breaking approaches and actions, as a model of disability inclusive development (DID), have shown inspiring successes.

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Objectives: This paper explores and shares how the NGO effectively engaged with persons with leprosy, disabilities and other stakeholders in a leprosy endemic and aspirational district of a backward state, that brought local ownership, beneficiary-led leadership and access.

Patients / material and methods: The paper draws on the data and information from the various sources like the programme planning documents, implementation reports; monitoring, evaluation and learning resources; observation and interaction with the different stakeholders.

Results: The DID project has brought benefits for 250000 persons including 4641 persons with disabilities and 1543 persons affected by leprosy in last 6 years. Implementing NGO's empowerment and facilitation including institutionalisation of individuals, and collectivisation of collectives are reflected in 356 local organisations formed by persons with disabilities who have been taking their own actions on selfcare, self-help and self-reliance. Positive changes are in terms of reduced stigma; improved perception, practices, participation, awareness and voice of the beneficiaries. The project beneficiaries have been demanding and accessing better services of the government's social welfare schemes; 3750 PWDs have received assistive and protective devices. The SHGs of PWDs now have INR 61,47,549/- through savings, internal lending and investment.

Limitations: This paper has been developed on the basis of monitoring data.

Conclusion: The DID model offers important experiential learnings on life, livelihood, and leadership; it strengthens socio-economic and community-based rehabilitation, dignity, equity, sustainability and identity. Sensitisation of multi-stakeholders are leading to inclusive processes. Expansion and deepening of DID needs everybody's appreciation, action and compassion. While the persons with disabilities are eager to excel, are others able to enable those who are differently able?

Keywords: Persons with disabilities; leprosy; stigma; discrimination; exclusion and multi-dimensional poverty; disability inclusive development;

#0230/ ILCABS546

PERSONS WITH LEPROSY & DISABILITIES : A STORY OF REVIVAL OF THEIR SELF-HELP GROUP

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Introduction: Formation and maintenance of Self-help groups (SHGs) is an important intervention for supporting the persons with disabilities (PWD) including those with leprosy. This study narrates how one closed- down SHG was revived leading to changes and inspiration.

Objective: To make the SHG functional again.

Patients / material and methods: The Khwaja Nawaz Divyanga SHG was formed in 2017 in Semra village of the Chandauli district in Uttar Pradesh; it was dissolved in 2020. Meetings were conducted in 2021 with the SHG members; it was realized that the PWDs used to deposit Rs 50/- monthly, but there were no benefits

With revival attempts; the members were made aware on relevance of SHGs. There was also advocacy, and liasioning media activities. As there was no cooperation from National Rural Livelihood Mission; other government departments and media were contacted and the issue was brought to their notice. The meetings of political leaders, district officials, PWDs and media demanded NRLM to enroll the SHG.

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Results: Ultimately the group was registered with NRLM and started receiving financial support. NRLM attended the second meeting and actually enrolled two SHGs. The two SHGs received INR 250,000/- as financial support. This activated the SHGs.

The Khwaja Nawaz SHG members got the maximum benefit from which it all started. A PWD due to leprosy got a job that earns him more than INR 10000 per month; livelihood is changing his life. Other members got benefitted by social welfare benefits.

Limitations: The formation and maintenance of SHGs requires good amount of handholding by an external agency which is not always available.

Conclusion: The revival of this SHG was possible due to the collective effort of the stakeholders led by a catalyst ; with its key guidance and mentoring for financial management and linkage .

Keywords: SHG, NRLM, Revive

#0231/ ILCABS586

CORRELATING COMMUNITY PERCEPTIONS OF NTDS WITH THE ISSUES OF PEOPLE WITH SEVERE NTD DISABILITIES IN INDIA, USING A MINIMUM ESSENTIAL DATA, INTERVENTION-FOCUSED QUALITY OF LIFE (QOL) TOOL

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Introduction: Leprosy and lymphatic filariasis (LF) are associated with stigma in India. An intervention-focused quality of life (QoL) tool to obtain minimum essential data on key aspects of life within a particular sociocultural context, was developed for people with severe NTD disabilities. The tool adapted the Social Distance Scale to assess prevalent community stigma that might affect QoL of persons with NTD disabilities.

Objectives: To measure community stigma associated with leprosy and LF and its correlation to the issues of persons with severe leprosy/LF disabilities.

Methods: QoL of 150 persons with severe leprosy/LF disability, from 39 villages in one administrative Block was assessed in February 2022. Concurrently, a random survey of 226 community members (59% male, 41% female; 5-6 per village) from all walks of life in the 39 villages, including neighbours of the people with leprosy/LF disabilities was done. Survey questions addressed their likelihood of engaging in certain activities/ behaviors with persons having leprosy/LF. Four male and four female trained data collectors conducted the survey using KoBoToolbox for data collection and analysis.

Results: 69.47% of surveyed community members knew someone with leprosy. 94.25% knew someone with LF. An overall stigma score ranging from 5-20 was calculated, with higher numbers indicating greater levels of stigma. The average Community Stigma score associated with LF was 7.2 compared to 16.9 for leprosy (2.3 times higher). This corelates with our tool scores where persons with leprosy disability indicated higher levels of stigma and participation restrictions, and lower levels of mental wellbeing, compared to persons with LF disability. In-depth analysis is ongoing.

Limitations: No major limitations.

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Conclusion: Including a community stigma survey in our tool enabled a holistic assessment of QoL of people with severe NTD disabilities within their immediate social environment, giving deeper insights and better enabling interventions to change community and personal situations.

Keywords: Community stigma, Quality of life, Tool, Leprosy and other NTDs

#0232/ ILCABS590

CAN ELIGIBLE PERSONS AFFECTED BY LEPROSY AND THEIR FAMILY MEMBERS CONTRIBUTE IN ZERO LEPROSY?

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Introduction: Annually over 3500 new leprosy cases are detected in Bangladesh with support of NGOs. Leprosy actors educate new cases on stigma, MDT, and self-care but less focus on screening techniques and referral communication. The actors utilize significant amount of resources for training different sectors for case referral but the result is not satisfactory. Considering stigma, cost of active case finding and follow-up, potential persons affected by leprosy and their family members can play a vital role in screening and early refer.

Objective: Measure result of formal and informal capacity building to eligible persons affected by leprosy and their family members on screening technique and suspect refer from own family and close contacts.

Material and Methods: "Proof of concept" methodology was used in partnering with a leprosy people's organization. Oriented 53 persons affected by leprosy and 16 family members (female 22) on leprosy screening and referral techniques in unserved seven districts and following up over phone during COVID-19.

Results: 91.5% participants screened their own family members within a month and shared results over phone. 52.5% participates screened their close contacts within the first quarter. 68% participants identified 63 suspects among their families and close contacts and informed project staff. Among suspects, 32% (20) were confirmed as leprosy cases. Among confirmed cases 52% female, 2 child, 60% MB and 15% G2D cases. Staff called twice a month for knowing updates and reminding their responsibility to protect family members and close contacts. Study promoted missed calls to project staff not referring suspects to GoB clinic.

Limitations: Follow-up was done only over phone due to COVID-19.

Conclusion: Findings suggest eligible persons affected by leprosy and their family members can contribute to early case detection, follow-up during and after treatment and reduction of leprosy burden on family, leprosy projects as well as country.

Keywords: Family members orientation on leprosy, Person affected by leprosy, Zero leprosy

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#0233/ ILCABS592

WILLINGNESS TO PAY AND AFFORDABILITY OF VARIOUS TREATMENT MODALITIES AMONG LEPROSY PATIENTS

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Introduction: Leprosy is an infectious disease predominantly seen in poor strata of society. Multi-drug therapy(MDT) provided for free by WHO for twelve months may be inadequate in certain cases. Additional drugs and devices to address Lepra reactions, prevention of injuries and rehabilitation of deformities may have to be purchased out of pocket.

Objective: To assess the willingness to pay(WTP) and affordability of various treatment modalities among leprosy patients.

Patients and methods: A cross-sectional study was conducted among leprosy patients visiting a tertiary care hospital in South India. WTP and affordability was calculated using this data.

Results: 120 patients were interviewed, 4 were excluded. They were mostly male(71%); with average age of 37 years; majority(50%) belonging to "Upper lower" class (Modified Kuppuswamy socioeconomic scale, 2021); residing in urban areas(73%). Their average duration of complaints was 3.43 years; 12% experienced Lepra reactions; 12% had visible deformity. Their median income was Rs.20,000/month and savings Rs.3,000/month; median WTP for healthcare expenses for entire family was Rs.1,000/month; having BPL card(48%); ration card(85%); bank account(89%); life insurance(30%) and health insurance(78%). If available, majority(96%) would prefer free government supply of MDT over buying from outside. Hypothetically, if it was not available, or more than 12 months of MDT was required, 52% and 48% respectively would be willing to pay more than Rs.75. However, 86% felt the market rate of MDT was affordable. Median WTP for both specialized slippers and rehabilitation devices was Rs.300. In case of Lepra reactions, 4%, 26% and 78% were willing to pay for Thalidomide, Prednisolone and Clofazimine regimen respectively. According to both impoverishment and catastrophic spending concept of affordability, all(100%) patients could afford MDT and Clofazimine regimen out of pocket.

Limitations: Predominantly urban patients.

Conclusion: Given their low cost, MDT and Clofazimine regimen for Lepra reaction were affordable to everyone in our study.

Keywords: Leprosy, Affordability, Willingness to pay, Socioeconomic status of Leprosy patients, Multi drug therapy

#0234/ ILCABS669

PROVIDING HOLISTIC CARE TO PEOPLE AFFECTED BY LEPROSY IN CABO DELGADO MOZAMBIQUE

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Introduction: Leprosy is a mildly infectious disease exacerbated by poverty. Leprosy can have severe consequences for those who are unable to rapidly access treatment, causing disabilities. Mozambique has

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high rates of leprosy, with official leprosy cases registered in Mozambique now at 313,552. The provinces of Zambezia and Cabo Delgado are the most endemic, contributing around 90% of cases.

Description of the Issue: Leprosy carries a stigma which leads to discrimination, driven by communities that lack accurate information about causes and prognosis of the disease. This can prevent people affected by leprosy from participating socially and economically in community life. People affected by leprosy are often isolated and lack access to learning opportunities and livelihood options. This limits their ability to adapt to fast-changing economic conditions and can leave them dejected and without hope for the future. Medical treatment alone is insufficient to improve the overall wellbeing of many people affected by leprosy.

The Leprosy Mission Mozambique has secured funding from the UK Government to break down stigma and discrimination using messaging delivered via community-managed media hubs and community leprosy committees. Community health volunteers spot signs and symptoms of leprosy and make referrals to Government health staff. The health system is simultaneously strengthened to provide comprehensive and quality medical care for leprosy, thereby preventing disabilities. The project also works to empower communities economically through support for climate resilient livelihoods.

Conclusion: Historical social inequalities, weak community participation, and late diagnosis and treatment of leprosy all contribute to the exclusion of those affected. With leprosy's related complications and stigma, hope fades for many people and an attitude of dependency and passivity can set in. Leprosy affects every aspect of life; a holistic community-based approach to stigma reduction and empowerment is therefore required to improve quality of life for those affected.

Keywords: Leprosy, Stigma and discrimination, Holistic care, Participation, Cabo Delgado, Mozambique

#0235/ ILCABS743

KNOWLEDGE, ATTITUDE AND PRACTICE AMONGST MEDICAL UNDERGRADUATE (MBBS) STUDENTS OF A TERTIARY CARE HOSPITAL, NEW MUMBAI

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Objective: To assess the level of knowledge, social attitude towards patients, and practices (KAP) regarding leprosy, among undergraduate medical (MBBS) students at a Tertiary care hospital, Kamothe, Navi Mumbai.

Study Design: Cross-sectional, observational study

Materials and Methods: A pretested and pre-validated questionnaire (by subject experts) consisting of 28 questions was administered to 250 undergraduate medical students (MBBS) studying at a tertiary care hospital, Kamothe, Navi Mumbai. The questionnaire covered all aspects of leprosy including clinical features, diagnostic methods, duration of treatment and stigma to test the knowledge and attitude of a student towards the patient of leprosy. The collective sum of correct answers marked by the students was taken to classify them. Respondents who marked more than 21 questions correctly were considered to have excellent knowledge, whereas those aggregating 15-21 and 08-14 correct answers were classified to have good and average knowledge respectively. Participants with less than 8 correct answers were marked to have poor knowledge.

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Results: A total of 250 undergraduate medical students were included in the study of which all of them gave consent to answer the questionnaire. Seventy four students (29.6%) had excellent knowledge whereas three (1.2%) students had poor knowledge about the disease. Eighty three (33.2%) and ninety (36 %) had average and good knowledge about the disease respectively.

Conclusion: In spite of dermatology not being a major part of the undergraduate (MBBS) curriculum, majority of the respondents had awareness about various aspects of leprosy in our study. Even after an extensive literature search, we were not able to find a similar study done in undergraduate students.

Keywords: Knowledge, Attitude, Practice, Leprosy, Medical undergraduate students

#0236/ ILCABS776

CHALLENGES FACED BY PEOPLE AFFECTED WITH LEPROSY DURING THE COVID-19 PANDEMIC: A QUESTIONNAIRE BASED STUDY

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Introduction: The coronavirus disease (COVID-19) pandemic had a considerable impact on vulnerable social groups. Restricted access to general health care services during pandemic led to delay in diagnosis, interruption of ongoing multidrug therapy, difficulty in management of reactions and worsening of complications like infections, worsening of ulcers and deformities for leprosy patients.

Objectives: This study aims to assess the continuity of medical care, the impact on disease condition and to highlight the gaps in healthcare delivery and social inequalities along with their impact on the health, livelihood and mental status of people affected by leprosy during COVID-19 pandemic.

Materials and methods: This telephonic questionnaire-based, cross-sectional study was conducted among previously registered leprosy patients at tertiary care institutes from 4 centres in India. Leprosy affected people aged > 18 years, either on treatment or completed treatment with access to phone were included in the study.

Results: Out of total 196 leprosy patients,101 patients (51.5%) experienced exacerbation of symptoms during the pandemic. Most common difficulty faced was the procurement of medicines (58.6%). Course of treatment was interrupted in 16 patients. Fifty percent of the patients reported deterioration in mental health. Majority of the patients (76%) had stopped going to work. Eighty eight patients (44.9%) believed that they were at increased risk of developing COVID-19 due to leprosy. Nearly one-third of patients (33.7%) experienced decreased sleep and 46 patients (23.5%) reported reduced appetite during the lockdown.

Limitations: Not all leprosy affected people were contractible via provided cell phone numbers giving rise to difficulty in follow up and under-reporting of the actual data.

Conclusion: Health care guidelines during pandemic had missed the marginalized communities like leprosy patients. This study proved that COVID-19 pandemic had a significant affect on leprosy patients in terms of health, medical management, livelihood and mental status.

Keywords: Leprosy, Corona virus, Pandemic, Mental status

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IMPACT OF COVID-19 ON ACCESS TO HEALTHCARE, LIVELIHOOD AND EDUCATION AMONG PERSONS AFFECTED BY LEPROSY

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Introduction: COVID-19 pandemic overwhelmed the healthcare machinery and disrupted whatever access people affected by leprosy had to resources and support systems. Economic shutdown and strained healthcare systems further made it challenging for people affected by leprosy to continue treatment, be it receiving MDT or getting ulcer dressed or steroid dosage adjusted.

Objective: The study wanted to document how COVID-19 and economic shutdown affected access to preventive and rehabilitative treatment. The focus was on understanding problems at the grassroots, on both demand and supply side of healthcare services, particularly for people affected by leprosy. The study aimed at generating evidence to advocate for disaster-inclusive health policies and programmes.

Methodology: The team conducted telephonic and face-to-face interviews with medical superintendents, public health consultants, residents of leprosy colonies, ASHA workers and children/youth affected by leprosy and other disabilities. They looked through peer-reviewed research papers, media reports and conducted an online survey of about 500 students and young professionals, with most of them having experienced leprosy or disability.

Results: Existing systems for prevention and management of leprosy were disrupted due to singular focus on reigning in COVID-19. In some cases, delayed treatment led to disease progression, with disability setting in. Concentration of physiotherapy and other disability management services in district hospitals, coupled with reduced or no income, prevented people from accessing these services. Reduced income put disproportionate burden on persons with disabilities and their households, which already bear extra cost (accessible housing & equipment, assistive devices, etc.), forcing them to depend on charity and relief aid.

Conclusion: Persons with leprosy and other disabilities can access preventative and rehabilitative care only when the points of care are decentralised, tele health is leveraged and staff capacity is built for providing advanced leprosy and disability management services.

Keywords: COVID-19 impact, Leprosy rehabilitation, Disability management,

#0238/ ILCABS783

PROMOTING INCLUSIVE AND ENABLING ENVIRONMENT FOR PERSONS AFFECTED BY LEPROSY AND OTHER DISABILITIES IN INDONESIA

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Introduction: In Indonesia, there is a lack of data and insights about the situation of persons with disabilities especially persons affected with leprosy, persons with mental health disorder and women with disabilities.

Objectives: The study aims to identify enabling and disabling factors faced by persons affected by leprosy, persons with disabilities and persons with a mental health condition.

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Material and methods: A total of 160 adult persons with disabilities (PWDs), affected by leprosy and/or mental health disorders who gave consent were interviewed. Five research areas of participation were assessed using a structured questionnaire: economy, health, education, social culture and religion, and politics. Focus group discussions were conducted with stakeholders. Quantitative data were analyzed using SPSS 25.0. Thematic analysis was conducted for qualitative data.

Results: Half of participants had physical disability, 25% had leprosy and 15% had mental health problems. One third of participants were male. Half participants reported that they had social welfare benefit. Only 40% had equal employment opportunity and one-fifth had accessible workplace. Almost 60% participants had health insurance. Sixty percent reported equal education opportunity. Most participants perceived equal opportunity to perform religious worship. The majority of participants reported good participation in political rights such as information and assistance on election. Inaccessibility of public facilities are the most frequently reported as disabling factor of participation, followed by stigma. Social support is very important to enable participation in all areas. Policy implementation remains weak.

Limitation: Involvement of PWDs as researchers has resulted in rich data, yet bias might present due to interference with personal experience and values.

Conclusion: In general, participation in 5 areas being studied is moderate to high depending on the area. PWDs and disability organizations need to be empowered to be able to perform evidence-based advocacy. Available policies should be translated into SOPs and technical guidance to enable implementation.

Keywords: Inclusion, Persons with Disabilities, Leprosy, Participation

#0239/ ILCABS785

PSYCHOLOGICAL ISSUES AND STIGMA EXPERIENCES OF CAREGIVERS OF PEOPLE AFFECTED BY LEPROSY

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Title: Psychological issues and stigma experiences of caregivers of People affected by Leprosy

Introduction: Family members of Leprosy affected persons with or without disability, face many challenges. The burden of caring for a person affected by Leprosy with disability coupled with associative stigma of leprosy may lead to emotional stress. The stress may be due to lack of support from within the family and extended family and community, the stigma and discrimination, which in turn can also affect the quality of care they provide.

Objectives: This study aims to explore the challenges of caregivers of people affected by leprosy through their experiences and narratives. Their coping strategies are also explored in the study.

Patients / material and methods: The study is carried out using a descriptive qualitative approach, using semi structured interviews and case studies/ narratives.

Results: Five main themes were constructed from the data: Type of care, Challenges due to stigma, Coping and support, Perceptions of public awareness, and messages to public. The findings emphasize the different types of burdens that caregivers experience, and their needs that require a range of responses such as training on effective coping strategies, and psychological support in the form of counseling or group therapy and sensitization of the community.

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Limitations: Some of the family members restrain from sharing their challenges due to love for the affected family member and due to fear of being further stigmatized.

Conclusion: This study highlights the voice of caregivers and their message to the public, in order to correct the misconceptions surrounding Leprosy and those associated with them.

Keywords: Caregivers; caregiver burden; coping.

#0240/ ILCABS823

PERCEPTION, KNOWLEDGE, ATTITUDE (KAP) AND STIGMA ABOUT LEPROSY AMONG HEALTHCARE WORKERS: A BASELINE STUDY IN INDONESIA

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Background: One of the challenges of leprosy elimination is the high level of stigma towards leprosy among healthcare workers (HCW). To formulate an effective strategy for leprosy control, baseline data is needed to determine knowledge, attitude, perceptions (KAP), and stigma against leprosy among the HCW.

Objective: To determine leprosy-related KAP and stigma among HCW in one endemic district in Indonesia.

Materials and Methods: A cross-sectional study was performed in 2020. A total of 60 HCW (72% women and 28% men), including physicians, nurses, and health promoters were purposively sampled in 15 randomly selected primary health centers (PHC) out of 49 PHCs in the study area. We assessed KAP with the KAP measure and stigma with a 12-item questionnaire.

Results: The average score of knowledge about leprosy among physicians, nurses, and promoters were 3.80, 3.20 and 3.07 (range=0-5; p=>0.05), respectively. About 46.7% promotors, 56.7% nurses, and 60% physicians expressed unwillingness to eat and drink at persons affected by leprosy's houses. Some of the physicians (6.7%), promoters (20%), and nurses (30%) stated that they were afraid of leprosy. Moreover, the average stigma score for physicians, nurses, and promoters were 8.53, 7.27, and 5.87 (Range=0-12; p-value=<0.05), suggesting a moderate level of stigma. The mean stigma score is higher among men (7.38), compared to women (6.96).

Limitations: The use of purposive sampling may have impacted the representativeness of the sample.

Conclusion: Stigma against leprosy still exists among HCW in the study area. This study revealed a variation in the level of leprosy-related KAP and stigma among the HCW. Therefore, future strategies in leprosy elimination among HCW should

Keywords: Leprosy, Stigma, Healthcare Workers (HCW), Knowledge, Attitude, And Perceptions

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#0241/ ILCABS825

USING A BEHAVIOR CHANGE COMMUNICATION (BCC) APPROACH IN THE IMPLEMENTATION OF SINGLE DOSE RIFAMPICIN- POST EXPOSURE PROPHYLAXIS (SDR PEP) IN INDONESIA

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Introduction: Post-exposure prophylaxis (PEP) with single-dose rifampicin (SDR) may reduce the risk of developing leprosy among contacts of leprosy patients. However, previous baseline study found that stigma and low participation of healthcare workers (HCW) and the community often pose a barrier to SDR-PEP administration.

Objective: This study aims to reduce stigma and increase participation of the community in SDR-PEP administration using the Behavior Change Communication (BCC) approach, which is a communication strategy that encourages the community to adopt positive health behavior practices, in this case, towards leprosy.

Materials and Methods: Health education on leprosy was used as a strategy to reduce leprosy-related stigma and to increase the participation of HCW and the community in SDR-PEP distribution. Workshops, mentorship, and health education materials were conducted by the provincial and district health office to deliver information about leprosy and SDR-PEP to 65 HCWs at two primary health centers (PHC). In turn, leprosy health workers provided health education to 280 influential community members (ICM) (e.g., village and religious leaders) in 14 villages.

Results: Two years after implementation, a total of 84 leprosy suspects were referred by ICM to the PHC, of which 9 cases were diagnosed as leprosy. A self-care group was formed in one of the villages with two people affected by leprosy actively involved as members of the group and health promoters. Budgets for leprosy control were allocated in three villages. The coverage of SDR distribution among leprosy patient contacts in BCC health center (between 80-95%) was higher than that of the district (60%).

Limitation: Endline data to compare outcomes with baseline are not yet available.

Conclusion: The use of the BCC approach can increase participation among ICM and SDR-PEP distribution coverage among contacts of leprosy patients.

Keywords: Leprosy, Post-exposure prophylaxis (PEP), Single-dose rifampicin (SDR), Behavior Change Communication (BCC), Influential community members (ICM), Stigma

#0242/ ILCABS845

ASSESSMENT OF THE QUALITY OF LIFE AND PRESENCE OF SOCIAL STIGMA AGAINST LEPROSY PATIENTS – A CROSS-SECTIONAL TELEPHONIC SURVEY

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Introduction: Leprosy is a slowly progressive chronic infectious disease caused by Mycobacterium leprae that can persist lifelong with the remnants of disability. It often has a severe impact on the quality of life (QoL) of patients as it is associated with social stigma.

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Objectives: To assess the quality of life and the presence of social stigma against Leprosy patients.

Materials and Methods: This was a cross-sectional telephonic survey of 33 patients who were diagnosed with Hansen's disease and treated. After getting a verbal informed consent, the demographic and clinical details were noted, and patients were administered the modified version of Dermatology Life Quality Index(DLQI) Questionnaire and the 5-Question Stigma Indicator questionnaire [both Community Stigma(5-QSI-CS) & Affected Persons(5-QSI-AP)] and responses recorded.

Results: In total, 64 patients were contacted but only 33(51.5%) patients consented to the study, which, in itself is a significant indicator of the existing stigma. Out of the 33 patients, 16 patients (48.5%) belonged to the Lepromatous Leprosy spectrum and 15 patients(45.5%) had a visible lesion/deformity. Around 23 patients(69.7%) had a DLQI of 11-20 and an average 5-QSI score of 7-10, indicating that they have a very large effect on the patient's QoL and that there is a significant social stigma against these patients. Pearson correlation coefficient analytical results showed a statistically significant correlation between both DLQI & 5-QSI-CS scores (n=33, r=0.506, p=0.003) and DLQI & 5-QSI-AP scores (n=33, r=0.536, p=0.001). In both the cases the p value was <0.05 which is statistically significant.

Limitations: Small sample size.

Conclusion: Leprosy adversely affects the QoL of those affected and there is still an existing social stigma and discrimination against these patients on a community level. There is also a positive linear correlation between the patients' QoL and the prevailing stigma.

Keywords: Stigma, Quality of life, DLQI, 5-QSI, Leprosy

#0243/ ILCABS975

RELIABILITY AND VALIDITY OF THE SOCIAL SUPPORT RATING SCALE IN PEOPLE AFFECTED BY LEPROSY

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Background: Due to the long-term social exclusion of people affected by leprosy, the level of social support is relatively low. This study is the first to evaluate the applicability of the SSRS scale in people affected by leprosy.

Objective: To explore the reliability and validity of the Social Support Rating Scale (SSRS) in people affected by leprosy.

Methods: A total of 288 participants affected by leprosy from three sample cities in Jiangxi Province were randomly selected. The construct validity of SSRS was evaluated by confirmatory factor analysis. Both the Patient Health Questionnaire (PHQ-9) and Self-rating Anxiety Scale (SAS) were used to analyze the criterion-related validity of SSRS. The internal consistency reliability of SCSQ was assessed by the Cronbach alpha coefficient.

Results: The three-factor model of SSRS provided a good fit of the sample data (c2/df=1.04, CFI=0.99, TLI=0.99, RMSEA=0.02, SRMR=0.03)). The average variance extraction of subjective support, objective support, and

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support availability were 0.552, 0.666, and 0.438, respectively. The square root value of the average variance extraction of each factor is greater than or close to the Pearson correlation coefficient of other factors. The total and factor scores of SSRS were negatively correlated with the scores of PHQ-9 and SAS (from -0.484 to -0.275). The Cronbach alpha coefficients of the total scale and the three factors were from 0.50 to 0.79.

Conclusion: The SSRS has good reliability and validity and is suitable for measuring social support in people affected by leprosy.

Keywords: Social support rating scale, People affected by leprosy, Reliability, Validity

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LABORATORY ASPECTS

#0244/ ILCABS8

DIFFERENCES IN THE SKIN MICROBIOTA OVER LESIONAL AND NON-LESIONAL SKIN IN LEPROSY PATIENTS

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Introduction: Leprosy is one of the most debilitating chronic infectious disorders which can involve virtually every organ of the body. Despite being advanced in every sphere of medical science, India is still crippled by this infectious disease which is still a public health problem.

Objectives: This study was aimed at identifying the bacterial species that could possibly modulate mycobacterium leprae (*M. leprae*) in leprosy patients over lesional and non-lesional skin.

Material And Methods: Skin swab samples were taken for 70 leprosy patients from lesional and non-lesional skin. As part of the control group 70 healthy volunteers were recruited. The microbiota in both groups were analyse microbiota using nested Polymerase Chain Reaction-Denaturing Gradient Gel Electrophoresis (PCR-DGGE) and 16S rRNA profiles.

Results: The representative bacteria isolated from health controls was Staphylococcus. Contrastingly, this microbiota was heavily underrepresented in leprosy cases. The major microorganisms obtained from lesional and nonlesional skin of leprosy patients were Taxa Firmicutes and Proteobacterium, respectively.

Limitations: Absence of immunological analysis.

Conclusion: There are definitive changes in core microbiota in leprosy patients compared to unaffected individuals. Such diversity supports the existence of dysbiosis in skin due to leprosy. Our results suggest that these differences in skin commensals could be utilized as potential therapeutic targets for leprosy patients.

Keywords: Leprosy, Microbiota

#0245/ ILCABS10

CLINICO-DERMATOSCOPIC FEATURES OF LEPROSY- AN OBSERVATIONAL STUDY

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Introduction: Leprosy, an infectious granulomatous disease with myriad clinic manifestations which can often pose a diagnostic challenge for dermatologists, requiring histopathological confirmation. Of late, the role of dermoscopy has evolved for rapid and noninvasive diagnosis of many dermatoses.

Objectives: This study was aimed at evaluating the dermoscopic features of leprosy and correlating them with histopathological findings.

Materials: Dermatoscopic features of the most characteristic lesion of leprosy from every case were analysed. Histopathology was done from the same lesion to do a dermatoscopic and histopathological correlation.

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Results: Fifty-seven patients were analyzed. There was a clear correlation between the dermoscopic and histopathological features. There was the presence of orangish-yellow and white structureless areas in more than 93% of cases, indicating granuloma formation. Vascular structure foci in the form of branching, crown, and linear vessels were seen. The appendages in involved lesions were sparse. We also observed some novel findings like the presence of brown branches in clofazimine-induced hyperpigmentation and orange globules seen in onychoscopy. Other rare observations were the presence of violet-blue structureless areas, telangiectasia, follicular plugs, and stellate scales in type I reaction; shiny white streaks in borderline cases, and keratotic plus with white dots in histoid leprosy along with crown vessels.

Conclusion: Dermatoscopy can be utilized as a rapid non-invasive investigation that could aid the dermatologist in the quick diagnosis of leprosy. It should be considered as a handy tool that can complement other investigations for diagnosing leprosy.

Keywords: Leprosy, Dermatoscopy, Histopathology

#0246/ ILCABS11

CLINICO-HISTOPATHOLOGICAL CORRELATION IN PATIENTS OF LEPROSY: A STUDY OF 98 CASES"

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Introduction: Leprosy, a chronic granulomatous disease caused by Mycobacterium Leprae, can present in myriad forms, depending on the immune status of the host. Clinical diagnosis is based on morphology, number of lesions, distribution etc. whereas histopathology is an important aid in confirming the diagnosis of the disease.

Objectives: To assess concordance and analyse the disparity between clinical and histopathological diagnosis of leprosy using Ridley-Jopling (R-J) classification.

Materials and methods: A cross-sectional study was conducted in a tertiary care centre from February 2021 to January 2022, including 98 newly diagnosed cases of leprosy of all age groups. Patients were classified after thorough clinical examination. Slit skin smears were examined with Ziehl-Neelsen (ZN) stain for acid fast bacilli. Punch biopsies were assessed with Hematoxylin-Eosin and Fite-Faraco (FF) method. Subsequently, clinico-histopathological correlation was evaluated.

Results: The mean age of study population was 38.7±15.2 years (age range 11-70 years, male: female-1.6:1). The most common clinical type was borderline lepromatous [BL](33.67%, n=33), followed by lepromatous leprosy[LL](28.57%, n=28), borderline tuberculoid [BT](24.48%, n=24), tuberculoid leprosy [TT](10.20%, n=10) and borderline borderline leprosy [BB](3.06%, n=3). On the contrary, histologically BT (31.63%, n=31) was the commonest type closely followed by LL (29.59%, n=29). Overall clinico-histopathological concordance was 74.48%. The correlation was highest in TT (90%) followed by LL (85.71%). ZN stain was positive in 35.71% (n=35) and FF Stain was positive in 28.57% (n=28).

Limitation: Indeterminate leprosy, histoid leprosy and lepra reactions were excluded from study due to their non-inclusion in R-J classification which was used during clinical diagnosis.

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Conclusion: Skin biopsy is mandatory in every case of leprosy as unusual presentations of leprosy do occur and clinico-histopathological correlation does throw in surprises. Since the impact of finding even in single new case of leprosy is significant, due diligence is warranted both by dermatologist as well as the pathologist.

Keywords: Clinico-histopathological correlation, Leprosy, Ridley-Jopling classification

#0247/ ILCABS26

AN OBSERVATIONAL STUDY ON BACTERIOLOGICAL AND MORPHOLOGICAL INDEX OF SLIT SKIN SMEAR ON BIOPSY PROVEN CASES OF LEPROSY FROM WHO VERSUS HIDDEN SITES

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Introduction: The bacteriological and Morphological status of leprosy patients is assessed by Slit Skin Smear method. The bacteriological index is the semiquantitative index for measuring bacterial load and the Morphological index is used for the assessment of chemotherapeutic efficacy and bacterial resistance.

Objectives: To evaluate BI and MI on Slit Skin Smears in WHO recommended sites vs other reported hidden sites in untreated and relapsed cases of leprosy.

Materials and Method: 75 patients with biopsy-proven leprosy, not on treatment or relapsed cases, irrespective of age, sex, and duration of disease were included. Smears were taken from 3 WHO recommended sites and 5 other reported hidden sites. Slides were stained using the Ziehl-Nelson method. BI and MI were evaluated using Ridley's algorithmic scale.

Results: Ear lobes gave uniformly higher values of BI and MI as compared to elbows, fingers, and toes. SSS was found to be positive from only peripheral sites in 8 patients. While in 5 cases were positive only from the lesional sites whereas 2 patients out of 75 were positive only from earlobes Morphological indices were better observed in untreated cases. Ear lobules gave a higher morphological index. Maximum number of smears showed bacilli in the lesions and ear lobules followed by toes, elbow, eyebrows, and fingers. In 25 out of 75 patients, no bacilli could be seen at any site.

Limitations: 1)Low sensitivity towards tuberculoid pole 2) Negative smear does not exclude leprosy 3) Observations are subjective 4) Technician dependent test

Conclusion: In a few cases bacilli were seen only in peripheral sites.Thus it is important to take SSS from hidden sites.

Keywords: Slit Skin Smear, Bacillary Index, Morphological Index

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#0248/ ILCABS30

COMPARISON OF HIGH RESOLUTION ULTRASONOGRAPHY WITH CLINICAL EXAMINATION IN THE ASSESSMENT OF PERIPHERAL NERVE INVOLVEMENT IN HANSENS DISEASE

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Introduction: Assessment of peripheral nerves in leprosy by clinical methods is subject to considerable inter observer variability. High resolution ultrasonography (HRUS) can assess peripheral nerves more objectively

Aims: To compare the findings of peripheral nerve involvement in newly diagnosed cases of leprosy by clinical and sonological methods.

Settings and Design: Cross sectional study in a tertiary care teaching hospital. Subjects and Methods: Four pairs of peripheral nerves of 30 newly diagnosed patients with leprosy were examined clinically and by HRUS. Statistical Analysis Used: Agreement between clinical examination and HRUS using kappa statistic; sensitivity; specificity; and predictive values.

Results: Of the 240 nerves examined, 63(26.25%) were abnormal clinically and 56 (23.3%) sonologically. Sonological abnormalities were increased cross sectional area (n = 56; 100%), hypoechogenicity with loss of fascicular architecture (n = 42; 51.7%) and increased vascularity (n = 13; 23.2%). HRUS findings were abnormal in 9 (5.08%) nerves that were clinically normal. HRUS was normal in 16 (25.3%) nerves which were clinically abnormal. Sensitivity of HRUS compared to clinical examination was 84%; specificity 51.6%; positive predictive value 74.6%; and negative predictive value 62.5%. Increased cross sectional area agreed with clinical findings the most.

Conclusions: HRUS has low specificity (51.6%) and high sensitivity (84%) to identify abnormal peripheral nerves in leprosy, compared to clinical examination. It could detect abnormality of some (n = 9, 5.08%) clinically normal nerves, but showed normal findings of some nerves (n = 16, 25.3%), which were considered clinically abnormal

Keywords: HANSENS, HRUS

#0249/ ILCABS31

NERVE CONDUCTION STUDIES IN NEWLY DETECTED HANSENS PATIENTS ATTENDING TO OUR TERTIARY CARE HOSPITAL.

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Background: Hansen's disease is a chronic illness, involving skin and peripheral nerves. Nerve involvement is always present in leprosy, and it may be present much before the patient manifests clinically.This study

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aim that whether NCS are helpful in subjecting the patient to early detection of nerve involvement and preventing deformities.

Aim: To study the nerve condution patterns of peripheral neuropathy in leprosy

Materials & Methods: It is Cross sectional observational study done in 80 newly detected hansens patients who are attending department of dermatology,veneriology and leprosy for period of one and half year were sent to nerve conduction studies of all sensory (ulnar nerve,median nerve,sural nerve) and motor (ulnar,median,common peroneal and posterial tibial nerves) was done and interpreted.

Results: A total of 80 leprosy cases were enrolled for the study. 80 % of the cases showed NCS changes at the time of diagnosis.Sensory motor mixed type (axonal & demyelinating) was the commonest pattern of peripheral Neuropathy seen in 39 % cases.ulnar nerve was the most commonly affected sensoryand motar nerve seen in 53.2% and 51.6% of patientsrespectively.71.2 % of Multi bacillary cases and 28.7% of Pauci bacillary cases showed Impaired Nerve conduction patterns Amplitude was the commonest affected NCS parameter.In 12 (18%) cases Nerve conduction studies showed Abnormal patterns even before the Clinical Neuritis has manifested.

Limitations: Nerve Conduction study of radial nerve and radial cutaneous nerves was not assesed .The duration of the disease is only one and half year.

Conclusion: Nerve conduction studies help in demonstrating and detecting the integrity of nerve function in leprosy. NCS is sensitive and subclinical changes can be picked up early even in clinically uninvolved nerves.NCS are reliable diagnostic and prognostic indicators useful in leprosy aspecially in areas that are endemic for the disease

Keywords: NCS, HANSENS

#0250/ ILCABS74

IS NERVE BIOPSY STILL RELEVANT IN DIAGNOSIS OF LEPROSY IN POST ELIMINATION ERA?

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Introduction: Nerve biopsy is an important tool for diagnosis of peripheral neuropathic disorders. In diagnosis of leprosy, the use is limited to cases of pure neuritic diseases. With decreasing prevalence worldwide its utility and predictive value has been challenged by many.

Objective: In this retrospective cohort we looked at the nerve biopsy findings and diagnostic utility of the procedure in suspected leprosy cases.

Method: It was a retrospective study done by retrieving the clinical and histopathological data of last 1 year in two institutions.

Result: Total 25 cases of nerve biopsy (twelve: sural nerve rest: radial cutaneous nerve) were identified. Nerve was identified in histopathology in 23 specimens, in 3 specimen the sample was inadequate. Among 20 biopsies where histopathological opinion were possible 5 biopsies revealed granulomatous inflammation and acid-fast bacilli was positive in 2 biopsies. Three cases were diagnosed as vasculitic neuropathy and rest

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of the cases did not show any significant inflammation. The clinical diagnoses prior to the nerve biopsy were suspected pure neuritic Hansen (18), mononeuritic multiplex to rule out Hansens disease (4), vasculitic neuropathy (1), chronic idiopathic demyelinating polyneuropathy (1), diabetic neuropathy to rule out pure neuritic Hansen (1).

In one biopsy, where Hansen's disease was not the primary diagnosis, diagnosis was revised after histopathology. In all other cases primary clinical diagnoses was not changed by the histopathological report. In 18 cases of pure neuritic Hansen's diagnosed clinically received anti leprosy treatment irrespective of histopathology. Seven patients experienced increase in extent of sensory loss, two developed paresthesia post procedure.

Limitation: Small sample size. Learning curve for the procedure.

Conclusion: Nerve biopsy has become a supportive tool in diagnosis of pure neuritic leprosy. It showed diagnostic features of leprosy 20% of the cases but was able to impact the diagnosis in 4%.

Keywords: Nerve biopsy, Granuloma, Diagnosis, Leprosy, Pure neuritic

#0251/ ILCABS93

MYCOBACTERIUM LEPRAE TRANSCRIPTOMIC AND HOST IMMUNE SIGNATURES FOR REACTIONAL STATES IN LEPROSY

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Background: Mycobacterium leprae transcriptomic and human host immune gene expression signatures that demonstrate a plausible association with type I (T1R) and type II reactions (T2R) aid in early diagnosis, prevention of nerve damage and consequent demyelinating neuropathy in leprosy. The aim of the study is to identify *M. leprae* and host-associated gene-expression signatures that are associated with reactional states in leprosy.

Methods: The differentially expressed genes from the whole transcriptome of *M. leprae* were determined using genome-wide hybridization arrays with RNA extracted from skin biopsies of 20 T1R, 20 T2R and 20 non reactional controls (NR). Additionally, human immune gene-expressions and circulatory levels of cytokines were profiled using RT2- PCR profiler arrays, real-time qPCRs and multiplex bead arrays from the peripheral venous blood specimens.

Results: In T1R lesional skin biopsy specimens, the top 10 over significantly upregulated genes are ML2064, ML1271, ML1960, ML122, ML2498, ML1996, ML2388, ML0429, ML2030 and ML0224 in comparison to NR. In T2R, genes ML2498, ML1526, ML0394, ML1960, ML2388, ML0429, ML0281, ML1847, ML1618 and ML1271 were significantly upregulated. We noted ML2664 was significantly upregulated in T1R and repressed in T2R. Conversely, we haven't noted any genes upregulated in T2R and repressed in T1R. In both T1R and T2R, ML2388 was significantly overexpressed. This gene encodes a probable membrane protein and epitope prediction using Bepipred -2.0 revealed a distinct B-cell epitope. Overexpression of ML2388 was noted consistently across the reaction samples. From the host immune gene expression profiles, genes for CXCL9, CXCL2, CD40LG, IL17A and CXCL11 were upregulated in T1R when compared to the NR. In T2R,CXCL10, CXCL11, CXCL9, CXCL2 and CD40LG were upregulated. With multiplex

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bead arrays, we noted higher levels of CXCL10, IL-17A and IFN-γ in the stimulated T cell suspensions with whole *M. leprae* in T1R and CXCL10, IL-17A in T2R.

Keywords: Whole Transcriptome Microarray, Mycobacterium leprae, Type I and Type II reactions, Gene expression signatures, Differential expression

#0252/ ILCABS94

DETECTION OF MYCOBACTERIUM LEPRAE DNA IN LEPROSY PATIENTS AND HOUSEHOLD CONTACTS OF INDEX LEPROSY CASES USING A FIELD COMPATIBLE BIOMEME FRANKLINTM MOBILE QPCR SYSTEM

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An early diagnostic tool is required to detect *M. leprae* infection among household contacts of in leprosy and intervene with treatment so as to stop early nerve damage and consequent impairment of nerve functions. A miniaturised and a field friendly real-time qPCR system is required at lab, hospital and field levels to identify asymptomatic contacts that harbour viable *M. leprae* in their skin tissues and may be even in their blood circulation

Materials and Methods: We enrolled 72 leprosy cases, 53 of their household contacts, 10 non-leprosy cases and 10 healthy individuals from a leprosy hospital in South India and compared the threshold cycle (Ct) values of regular and field-friendly qPCR for detecting Mycobacterium leprae DNA in skin scrapings.

Results: and conclusions: The average Cq(threshold) values for Leprosy patient, household contacts and Non leprosy were 28.36, 33.05, 37.44 respectively. Significant difference was noted in the threshold value, among the Leprosy patients, household contacts and Non Leprosy Population.The cutoff values would be useful to determine subclinical infection among contacts and general population. The preliminary study was done to standardize the realtime PCR in the Biomeme platform.

Further investigations needs to be done with higher sample size in each groups to draw a cut off value for predicting subclinical infection and overt disease among the household contacts and other high risk population in a field setting.

Keywords: Biomeme, QPCR, Leprosy, Household contact

#0253/ ILCABS139

THE ARMADILLO MODEL FOR LEPROSY NERVE FUNCTION IMPAIRMENT.

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Mycobacterium leprae infection of peripheral nerves and the subsequent nerve function impairment (NFI) are hallmarks of leprosy. Most if not all of the disability and stigma associated with leprosy arises from the direct

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or indirect effects of NFI. Nine-banded armadillos (Dasypus novemcinctus), like humans, exhibit the full clinical spectrum of leprosy and more importantly, they show extensive involvement of the peripheral nerves. In this study, we used state-of-the-art technology to compare nerve function between uninfected and *M. leprae*-infected armadillos. Motor nerve conduction velocity (MNCV) and compound muscle action potential (cMAP), which measure changes in the rate of impulse conduction velocity and amplitude, revealed nerve function impairment due to *M. leprae* infection and enabled development of an objective nerve impairment scoring system. Sonography accompanied by color Doppler imaging detected enlargement of the *M. leprae*-infected nerves and increased vascularity due to inflammation. Assessment of epidermal nerve fiber density (ENFD), which shows a length-dependent innervation in armadillos that is similar to humans, identified small fiber degeneration early after *M. leprae* infection. Staining for neuromuscular junction (NMJ) integrity, which is an indicator of signal transduction efficiency into skeletal muscle, discerned a markedly lower number and structural integrity of NMJ in *M. leprae*-infected armadillo footpads. We used these tools to monitor the effects of intervention therapy with two potential neuro-protective drugs, ethoxyquin (EQ) and 4-aminopyridine (4-AP), and assessed their ability to ameliorate peripheral nerve injury in *M. leprae*-infected armadillos. 4-AP treatment improved MNCV, cMAP, and EFND compared to untreated animals, while EQ had little effect. These results support the armadillo as a model for *M. leprae*-induced peripheral nerve injury that can provide insights toward the understanding of NFI progression and contribute to the preclinical investigation of the safety and efficacy of neuro-preventive and neuro-therapeutic interventions for leprosy.

Keywords: Dasypus Novemcinctus, Armadillos, Neuropathy, Mycobacterium leprae, Leprosy

#0254/ ILCABS145

REVISITING THE SLIT SKIN MICROSCOPY FOR DIAGNOSIS AND EARLY DETECTION OF LEPROSY

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Introduction: Diagnosis of early-stage leprosy can be very challenging. The Slit Skin Smear (SSS) remains the conventional method for diagnosis, but is scarcely used Nigeria due to a lack of expertise, equipment, and reagents. We experiment with reintroducing the SSS in two Northern-Nigerian States to improve the early detection of leprosy.

Methods: A retrospective and prospective comparative study was conducted. General Health Care Workers (GHCW) were trained to diagnose and manage leprosy and lymphatic filariasis (LF). Traditional healers, patent medicine vendors, and community volunteers were trained on recognition and referral of leprosy suspects. Laboratory workers at primary healthcare centres were trained to diagnose leprosy using SSS method. Eight skin camps were set up to screen for leprosy.

Results: The trainings were noted to be effective in increasing the referrals of suspected leprosy cases for early screening and detection, as well improving the competency and confidence of the laboratory scientists to collect, stain and examine SSS samples. GHCWs screened 5,041 people with skin conditions and identified 217 leprosy suspects, of whom 76 adults and 8 children were confirmed upon SSS to have multibacillary leprosy. Six leprosy patients had Grade 2 disability. A total of 86 cases of LF were also identified.

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Conclusion: The mantra of 'do simple well' still applies in leprosy control. Leprosy control programmes mostly do not conduct SSS microscopy due to the absence of expertise and reagents. This is a false economy as multidrug therapy (MDT) is wasted treating people who do not have leprosy. SSS prevents these ineligible persons from being placed on leprosy treatment and exposed to the potential stigma associated with a diagnosis of leprosy.

Keywords: Slit Skin, Microscopy, Diagnosis, Early detection, Leprosy, Lymphatic Filariasis

#0255/ ILCABS146

ESTABLISHMENT AND EVALUATION OF A SIMPLE DETECTION METHOD FOR RIFAMPICIN-RESISTANT MYCOBACTERIUM LEPRAE USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) METHOD TO USE IN SDR-PEP.

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Introduction: Single dose rifampicin-post exposure prophylaxis (SDR-PEP) is considered one of the most effective approaches to achieve "Zero leprosy." However, SDR-PEP should not be applied to patients with rifampicin-resistant Mycobacterium leprae that exist all over the world. This is because not only it is ineffective, but results in the active selection of resistant strains. Since conventional PCR and DNA sequencing are not suitable to be performed in the most endemic countries, we developed simple and cost-effective diagnostic method for rifampicin-resistant *M. leprae* to achieve "Zero leprosy".

Objectives: To establish and evaluate a simple and user-friendly detection method for rifampicin-resistant *M. leprae* with LAMP and MinION, a portable-type next generation sequencer, to be used in leprosy endemic countries.

Material and methods: LAMP primer sets were designed for drug resistance-determining regions (DRDR) of rpoB gene in *M. leprae*. DNA from Thai-53 strain of *M. leprae* and plasmids containing wild type and mutant rpoB gene were used to evaluate the method.

Results: Our LAMP method allowed successful amplification of rpoB DRDR, and MinION sequencing of the amplicon confirmed the presence of known mutations causing rifampicin-resistance.

Limitations: It is necessary to test the method using clinical samples in endemic countries.

Conclusion: Our detection method for rifampicin-resistant *M. leprae* could be a simple and accurate tool for the detection of rifampicin-resistant *M. leprae* before administration of rifampicin. We are currently developing a much simpler method to detect all the drug resistant *M. leprae* strains. This study is supported by Sasakawa Health Foundation (SHF).

Keywords: SDR-PEP, Rifampicin-resistance, LAMP, Portable sequencer

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#0256/ ILCABS152

A COMPARATIVE STUDY ON THE DETECTION OF M LEPRAE DNA IN URINE SAMPLES USING RLEP PCR WITH THE OTHER CONVENTIONAL CLINICAL SAMPLES

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Leprosy is a chronic and highly stigmatized infectious disease caused by Mycobacterium leprae. For the identification of *M. leprae* in clinical samples only some diagnostic tools such as bacillary load, a histopathological analysis are used. The diagnosis in leprosy has been quite challenging especially in paucibacillary cases. In this scenario, PCR is being used as effective tool for the detection of *M. leprae* DNA using different gene targets/markers in various clinical samples. Among all the different gene targets, Rlep gene (Repetitive element) was found to be most sensitive and specific to *M. leprae* detecting even minute quantities of DNA. The present study aims to detect *M. leprae* DNA in urine samples, which is very easily available and non- invasive sample using PCR with Rlep gene, in leprosy patients who have shown a negative AFB skin smear test. The PCR result was compared with the invasive samples such as blood and slit skin smears. A total of 50 patients were enrolled in the study. Among which 36 were leprosy patients and 14 control were included. Among the leprosy cases PCR was positive in 32/36 (88%) in urine samples, 31/36 (86%) positive in Smear samples and 4/36 (11.1%) in blood samples. Among the control group all 4 samples showed negative PCR in urine, smear and blood samples. Although no significant difference was seen between the PCR positivity in smear and urine samples, Urine PCR still could be useful for diagnosis in leprosy patients and to check subclinical infection in household contacts as its noninvasive method of sample collection. Further studies are needed to evaluate the above study with a large number of patients.

Keywords: PCR, Urine sample, Rlep gene, Diagnosis

#0257/ ILCABS156

ROLE OF SONOGRAPHY IN THE EVALUATION OF PERIPHERAL NERVE INVOLVEMENT IN LEPROSY

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Introduction: Leprosy is a chronic infectious disease affecting the skin and peripheral nerves. It can affect the sensory, motor and autonomic function of nerves causing disabilities and stigmatizing deformities. Early detection and treatment of neuropathy are of utmost importance in preventing further disability and deformity. Ultrasonography provides an objective measure of thickening and asymmetry of peripheral nerves and is more precise than clinical palpation of nerves. This study was done to estimate and compare sonographic parameters like nerve cross-sectional area (CSA), nerve echogenicity, and colour doppler of peripheral nerves in leprosy patients and compare them with those of healthy volunteers.

Objective: To estimate and compare sonographic parameters of peripheral nerves in leprosy patients and healthy volunteers.

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Methods: A cross-sectional study of 30 leprosy patients along with 30 healthy volunteers, who attended the Department of Dermatology & Venereology, Government Medical College, Thiruvananthapuram for one and a half years was done. Patients above 18 years of age were included in this study. High-resolution sonography of bilateral median, ulnar and common peroneal nerves of both patients and healthy volunteers was done. Data were analyzed using IBM SPSS software.

Results: In leprosy patients, the mean cross-sectional areas of the right and left ulnar nerves were 12.0 ± 5.1mm2 and 10.9 ±3.5 mm2 respectively. The mean cross-sectional areas of the right and left median nerves were 9.8 ±3.5 mm2 and 10.2 ±3.4 mm2 respectively and the mean cross-sectional areas of the right and left common peroneal nerves were 11.3 ±4.8 mm2 and 10.6 ±3.9 mm2 respectively. There was a statistically significant difference in the mean-cross sectional areas of nerves between patients and healthy volunteers ($p<0.01$). High-resolution ultrasound found 93 out of the 180 (51.6%) nerves enlarged in contrast to the 60 (33.3%) nerves thickened by clinical palpation in leprosy patients.

Keywords: Leprosy, Sonography, Ultrasound

#0258/ ILCABS162

TO ASSESS THE DIAGNOSTIC USEFULNESS OF HIGH RESOLUTION ULTRASONOGRAPHY(HRUS) IN HANSEN NEUROPATHY

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Introduction: Leprosy is a chronic disease caused by Mycobacterium leprae, which involves the skin, peripheral nerves and upper respiratory tract. Hansen's neuropathy is responsible for most of the feared consequences of *M. leprae* infection and its diagnosis is a difficult task. The assessment of peripheral nerve thickening by palpation is subjective and may differ between clinicians.

Objective: To evaluate the diagnostic usefulness of HRUS (High resolution ultrasonography) in Hansen's neuropathy.

Material and methods: A cross sectional study was planned and total 20 patients of leprosy and 20 healthy controls were included of age group 18-65 years after fulfilling inclusion and exclusion criteria. Features suggestive of nerve function impairment (NFI) was evaluated by dermatologist. The patient was further evaluated by radiologist using HRUS. Ultrasound of the ulnar nerve was performed using high frequency linear probe (5 -17 MHz). Cross sectional area (CSA) and circumference (C) were measured at the level of perceived maximum thickening by freehand delineation of the inner border of the hyperechoic rim of the nerve sheath.

Results: The mean age was 33.22 years, and the Male: Female ratio was 4: 1. Loss of temperature differentiation, pain and fine touch was present in 80%, 95% and 85% cases respectively. Motor weakness was present in 45% cases and clinical peripheral nerve thickening was present in 33/40 ulnar nerves. Mean CSA (mm2) of ulnar nerve was 6.06 and 14.86 in control and leprosy patient respectively with p-value 0.009. Mean circumference(mm) of ulnar nerve was 9.83 and 14.07 in healthy control and leprosy patient respectively with p-value 0.0008.

Limitations: Number of cases were less. Color Doppler was not done in our study. Only ulnar nerve was examined.

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Conclusion: On HRUS, cross-sectional area and circumference of ulnar nerve was significantly increased in patients of Hansen's disease as compared to healthy controls.

Keywords: Hansen neuropathy, HRUS, CSA

#0259/ ILCABS231

GENOME WIDE ANALYSIS OF DRUG RESISTANT *M. LEPRAE* STRAINS ISOLATED FROM LEPROSY PATIENTS

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Introduction: Although MDT is showing a decrease in prevalence of this disease worldwide, emergence of drug resistant cases across the globe raised a concern for transmission of resistant *M. leprae* strains in the community. These undiagnosed drug resistant cases may contribute to continuing disease transmission and may pose as a major threat for the leprosy eradication program.

Aims: and Objective: In order to monitor the transmission dynamics of drug resistant leprosy, genome wide sequencing of *M. leprae* drug resistant strains from leprosy patients was carried out by whole genome sequencing (WGS). This study has provided insights for detection of new mutations conferring resistance in new regions of *M. leprae* genes.

Materials and Methods: The subjects were selected from the leprosy patients recruited at respective hospitals. A total of 417 biopsies (of 5x5 mm) were collected from hospitals and were categorized as Non responders (NR) to MDT, Relapse(R)cases and Defaulters (Df) to MDT. Biopsies yielding DNA concentration of 50ng or more were subjected to WGS. A total of 15 R patients, 10NR, 3Df leprosy patients from hospitals and one reference control strain (Br4923) from BEI Resources, USA, were subjected to whole genome sequencing.

Results: Whole Genome Sequencing of R cases with dapsone, rifampicin and ofloxacin showed the presence of compensatory mutations in ATP-binding cassette transporter, major facilitator superfamily transporter genes respectively.Resistance nodulation division transporter gene may be additionally responsible for conferring resistance in these strains.WGS Results of NR and Defaulter cases are awaiting and will be presented later.

Discussion: and Conclusion: The genes of ATP-binding cassette transporter, Major facilitator superfamily transporter, Resistance nodulation division transporter had shown the mutation in Rifampicin, dapsone and ofloxacin resistant patients.Rifampicin, Isoniazid, β-lactum,Chloroamphenical,Tetracycline,Vancomycin, Macrolides,Novobiocin,Aminoglycosides,Antimicrobialpeptides,Fluoroquinolones,Norfloxacin, Puromycin may be consider as targets for drug resistance.Results from this study support the role for compensatory mutation(s) resulting in drug resistance in R leprosy patients.

Keywords: WGS, Leprosy, Relapse, Transporter Genes, *M. leprae*

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#0260/ ILCABS246

ABSOLUTE QUANTIFICATION FOR ASSESSMENT OF VIABLE LOAD OF *M. LEPRAE* IN HIGH BI LEPROSY PATIENTS TREATED WITH MDT REGIMEN.

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Introduction: Despite a full course of MDT,relapse has been noted in cases with high BI.It might be possible that leprosy patients with high BI might be carrying a good number of viable bacilli.at the time of RFT.

Aims & Objectives: This study was designed to observe the effects of MDT on clinical status and number of viable bacilli left at RFT in the high BI patients during and after the treatment.

Material methods: Skin slit scrapings (SSSs) from 60 new untreated leprosy patients with BI (>3+) were recruited at respective hospitals and were investigated at three different time intervals i.e., at the time of recruitment, after 6 months and after 12 months of the treatment. Total RNA from SSSs was extracted by using RNAeasy kit (Qiagen Pvt. Ltd.). Enumeration of absolute quantification of viable load of *M. leprae* was performed by real time RT-PCR using three different sets of genes i.e.16s rRNA, esxA and hsp18.

Results: Our results have shown that patients with type 1 and type 2 reactions at the time of recruitment have shown increase in viable load of bacilli after six months of treatment (35 cases) for all three sets of gene 16s rRNA(11/35; 31%),esxA (17/35; 48%) and hsp18(7/35; 20%). On an average the copy numbers in these cases have increased by one log for all these three sets of gene.

Limitation: Small sample size.

Discussion: and Conclusion:After full course of MDT in patients with high BI (>3+ to 5+) a large number of bacilli remain viable at the time of RFT and might be involved in causing relapse and reactions active and help in transmission of disease in the community leading to dampen the progress in elimination of leprosy.

Keywords: Viability, Bacterial Load, *M. leprae*, Fixed dose MDT, RT-PCR, Absolute quantification

#0261/ ILCABS258

A RETROSPECTIVE STUDY OF PEDIATRIC LEPROSY PATIENTS BIOPSIED AT A TERTIARY HEALTHCARE CENTRE IN WESTERN INDIA

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Introduction: Leprosy in the pediatric population is concerning since it points to continuing transmission of disease.Besides, children afflicted with leprosy face the possibility of lifelong social stigma as well as deformities which cripple their day-to-day activities. With this background, the present study was conducted.

Objectives:

1.To ascertain the and prevalence and spectrum of pediatric leprosy patients biopsied

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2.To ascertain clinicopathologic mismatch in pediatric leprosy

Patients-Biopsy records over 64 months from Sepatember 2015 to December 2020 were scrutinized noting patient age, sex, disease duration, biopsy site, disease spectrum on clinical and histopathologic assessment besides other features such as reactions and deformities on clinical examination.

Results: Leprosy was the commonest diagnosed infectious disease (38.42%;n=68/177) and constituted 5.5% of all pediatric biopsies performed during the study period (n=1239). Males outnumbered females. Most leprosy patients (77.9%;n=53) were adolescents and the remaining, school going children. Half of patients presented within one year of onset of complaints. Lesions were mostly located on exposed areas of the body. The most common form was BT leprosy (60.29%;n=41/68). Among lepra reactions, type 2 reactions (T2R) were commoner (8/68) than type 1 (T1R; 4/68) with an overall prevalence of 17.65%. Histopathology was especially of value in detecting foci of downgrading in the form of diffuse granulomas and foamy changes.

Limitations: The retrospective nature of the study precluded clinical assessment and treatment response. Besides, results of slit skin smears were not documented in biopsy records.Future studies may incorporate quality of life measurements of children (if applicable) and caregivers as well.

Conclusion: This sizeable number of leprosy cases is concerning since it points to continuing transmission. Histopathology, despite not being mandatory to diagnose leprosy according to the WHO criteria, is critical to detecting early reaction, spectral change, for disease documentation and eliminating a sizeable proportion of false negatives and false positives.

Keywords: Pediatric, Leprosy, Histopathology, Clinicopathologic mismatch

#0262/ ILCABS271

DO MIMICKING T CELL EPITOPES (PEPTIDES) BETWEEN MYCOBACTERIUM LEPRAE AND HOST PROTEINS EVOKE AUTOIMMUNE REACTIONS LEADING TO THE PATHOGENESIS OF REACTIONS IN LEPROSY?

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Introduction: Several Mycobacterial infections including leprosy and tuberculosis are known to evoke autoimmune responses by modulating the homeostatic mechanism of the host. The presence of several autoantibodies against keratin, MBP and tropomyosin has been earlier reported in leprosy patients.

Aim: The aim of the present study was to detect the role of mimicking T cell epitopes (TCEs) of *M. leprae* and host components in the induction of autoimmune response in leprosy.

Material and Methods: We predicted and identified mimicking TCE by Syfpeithi epitope prediction server and ClustalW multiple sequence alignment server, respectively. A total of nine mimicking TCE of protein 50S ribosomal protein and Lysyl tRNA synthetase of *M. leprae* similar to MBP (host) were synthesised. Lymphocyte proliferation assay was performed by stimulation with TCE across 20 non-reaction (NR), 20 Type 1 reaction (T1R), 20 Type 2 reaction (T2R) leprosy patients, and 20 healthy controls (HC). Furthermore, the levels of Th1/Th2/Th17 cytokines were estimated in the 48 hours of culture supernatant.

Results: We observed a significantly high stimulation index (SI) with five TCEs namely 50ST2, LMT1, MBP50ST2, MBP50ST3, and MBPLMT2 in T1R when compared with the NR. We found higher levels

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of SI in reaction groups for most of the peptides. The levels of Th1/Th17 cytokines were significantly higher in T1R and whereas Th2 cytokines in T2R when compared with NR and HC. The findings showed clinical concordance with neuropathy and deformity.

Limitations: Screening of a large sample size could validate the findings.

Conclusion: A total of five mimicking TCE of the MBP were found significantly associated with T1R followed by T2R. Our result suggests that the TCEs play a key role in the induction of autoimmune response and inflammatory episodes of reactions in leprosy which may be further employed as a predictive biomarker for the reactions in leprosy.

Keywords: Molecular mimicry, Reactions, Pathogenesis, Biomarkers, Autoimmunity

#0263/ ILCABS283

DEVELOPMENT OF IMMUNODIAGNOSTIC TESTS FOR LEPROSY: FROM BIOMARKER DISCOVERY TO APPLICATION IN ENDEMIC AREAS

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Introduction: Mycobacterium leprae is still actively transmitted in endemic areas reflected by the fairly stable number of new leprosy cases detected each year. Recognizing the signs and symptoms of leprosy is challenging, especially at an early stage. Improved diagnostic tools, based on sensitive and specific biomarkers, that facilitate diagnosis of leprosy are therefore urgently needed. Since the manifestation of leprosy disease as multi- or paucibacillary is determined by host immunity, unraveling this response will facilitate the search for biomarkers.

Objective: To identify biomarkers for *M. leprae* infection and paucibacillary disease based on host immunity and incorporate these in lateral flow assays applicable to leprosy endemic areas.

Materials and methods: Using multiplex-bead-arrays, 60 host-proteins were measured in a cross-sectional approach in 24-h whole blood assays (WBAs) of leprosy patients, contacts and endemic controls (EC). Biomarkers validated by ELISA were incorporated in quantitative lateral flow assays using up-converting phosphor technology.

Results: A biomarker signature was identified that jointly allowed discrimination of patients with multi- and paucibacillary leprosy. These biomarkers were successfully incorporated in a lateral flow multi-biomarker test (MBT), which demonstrated feasibility of quantitative detection of these host proteins simultaneously. The biomarker signature proved to be applicable in both high and low leprosy endemic areas. Moreover, pilot testing of fingerstick blood showed similar MBT performance in point-of-care (POC) settings as observed for plasma and serum.

Limitations: MBT performance was assessed in relatively small cohorts from Asian countries. To ensure applicability in other parts of the world, the MBT is currently evaluated in South American leprosy endemic areas.

Conclusion: The newly developed prototype MBT measures multiple biomarkers covering immunity against *M. leprae* across the leprosy spectrum. The MBT can thereby provide the basis for immunodiagnostic POC tests for leprosy with potential for other (infectious) diseases as well.

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Keywords: Diagnostics, Lateral flow assay, Biomarkers, Multi-biomarker test, Point-of-care, Host immunity

#0264/ ILCABS313

COMPARATIVE GENOMICS OF MYCOBACTERIUM LEPROMATOSIS STRAINS REVEALS DIFFERENT GENOTYPES CIRCULATING IN NORTH AND CENTRAL AMERICAS

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Introduction: Mycobacterium lepromatosis (MLPM) infection was identified in 2008 in a leprosy patient from Mexico. Its genome was partially sequenced in 2014 and fully sequenced in 2022. The species was also identified in red squirrels in the British Isles, molecular clock analyses on whole genome data revealed that the animal and human strains diverged 27,000 years ago. However, with only three genomes of human strains are currently sequenced, the origin, spread and extant diversity of the species remain unclear.

Objectives: 1) Assemble the chromosome of a strain from Central America in a single contig using long-read sequencing and 2) explore the diversity of human circulating MLPM strains using whole genome data.

Methods: The genome of NHDP-385 currently passaged in mice at the NHDP institute was sequenced using long read sequencing. A total of 13 additional human MLPM strains were sequenced using target enrichment and short-read Illumina sequencing. DNA samples were target-enriched using a MLPM bait capture prior to sequencing.

Results: The genome of the new NHDP-385 strain was reconstructed in a single contig with 133X coverage and nine new human MLPM whole genome were sequenced. Comparative phylogenomic analyses revealed that all but one human strain (NHDP-9) cluster together with the previously sequenced human infecting strains, with two apparent sub-lineages within this monophyletic cluster. Interestingly, NHDP-9 was surprisingly placed in a basal position to all known strains (human or animal), revealing that at least two totally independent lineages are currently infecting humans. Molecular clock calculation is currently performed to identify the emergence dates of all lineages.

Limitation: We are currently collecting the exact origins of the patient infected with the NHDP-9 strain.

Conclusions: Two different lineages of human infecting strains have now been identified suggestive of two independent emergences in the modern human population probably linked with an environmental or animal source.

Keywords: Leprosy, Mycobacterium lepromatosis, Transmission, Phylogenomics

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#0265/ ILCABS325

REVISITING SLIT SKIN SMEAR PROTOCOL AND DIAGNOSTIC OUTCOMES IN LEPROSY PATIENTS

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Introduction: Slit skin smear (SSS) and Bacillary Index (BI) are important elements of gold-standard diagnostic technique for leprosy. While some SSS protocols involve sampling 6 standard sites (right and left ear lobe, elbow, and knee) plus any suspect lesion(s), some programs regularly sample fewer sites.

Objectives: Determine slit skin smear diagnostic efficacy based upon which and how many skin sites are sampled.

Material and Methods: Retrospective medical chart review was performed for initial and follow-up BI of new leprosy cases (2015-2018). SSS were performed at routine sites (right ear (RE), left ear (LE), right arm or elbow (RA) and right thigh or knee (RT), and/or lesion sites.

Results: Out of 156 paired patient BI data available for routine and lesion sites, it was found that lesion site BI were more likely to be BI positive than routine sites (53% vs 35%, $p<0.0001$) and had higher BI (Mean ± SD: 1.9±2.2 vs 1.4±2.1, $p<0.0001$). The lesion max BI was more successful to classify patients into lepromatous (BL/LL) and tuberculoid leprosy ($p<0.0001$). 77 patient data were available with follow-up BI at median 18.3 months (Mean ± SD: 21.1±8.6 months). There was annual median decline of 0.8 BI units (Mean ± SD: 0.95±0.95, $p<0.0001$) among BI positive patients (n=77). Decline was not affected by gender ($p>0.05$) but was slightly faster in those with lower BI (1-3) compared to higher (BI: 4-6) (Median decline: 0.95 vs 0.7, $p=0.0735$).

Limitations: Not all skin sites were examined at all time points and follow up visits were performed at irregular times.

Conclusion: While suspect lesion sites often were the most useful, examination of both lesion and standard sites provide better overall screening in suspect new leprosy cases. Lesion sites could be used for SSS for accurate diagnosis of leprosy.

Keywords: Slit skin smear, Bacillary index, Diagnosis, Leprosy, Lesion sites

#0266/ ILCABS331

COHORT STUDY TO UNDERSTAND THE STATUS OF MYCOBACTERIUM LEPRAE VIABILITY AND ITS POSITIVITY IN NOSE OF LEPROSY PATIENTS AFTER ONE DOSE OF MULTIDRUG REGIMEN.

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Introduction: Rifampicin is the most key component of the MDT regimen, having bactericidal activity against Mycobacterium (M) leprae. It has been always mentioned that one dose Rifampicin in MDT makes

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a patient negative for acid fast bacilli (AFB) in the nose. However, one is unable to get any scientific evidence for the same from the literature.

Objectives: The aim of the present study to find out the presence of viable *M. leprae* in the nose of leprosy patients after one dose of MDT by using Ziehl- Neelsen staining and RT-PCR of 16S rRNA, esxA gene targets.

Materials & Methods: A total 275 Nasal swab specimen has been collected from paucibacillary (PB n=124) and multibacillary (MB n=137) leprosy patients from OPD of different hospitals. DNA and RNA extraction has been performed followed by confirmation of viability of *M. leprae* by Real Time-PCR. Genotyping of *M. leprae* were performed from slit skin smear as well as nasal swab samples of MB.

Results: Real time PCR indicated that all the nasal swab specimens of PB patients were found negative after one of MDT except one patient nasal specimen. On the other hand, MB patients showed 34% of viable *M. leprae* in their nose after one dose of MDT and followed by 19% qRT-PCR positivity after 6 month of MB treatment. Similar 1D SNP subtype of *M. leprae* strain type was observed in slit skin smear and nasal swab samples of MB leprosy patients.

Conclusion: Absolute Real time PCR showed viable *M. leprae* after one month of MDT in nasal swab of PB and MB type of leprosy. Genotyping analysis showed 1D SNP type of *M. leprae* in slit skin smears as well as nasal specimens indicate that one type of strain is present in both samples.

Keywords: Viability of *M. leprae*, Transmission, MDT, Genotyping, QRT-PCR

#0267/ ILCABS345

VIDEODERMOSCOPIC ASSESSMENT OF CAPILLAROSCOPIC PATTERNS IN MULTIBACILLARY HANSENS DISEASE- A CASE SERIES

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Introduction: Leprosy (Hansens disease) is a chronic granulomatous disease affecting endothelial cells. During the course of the disease, the bacilli affects nerves and vasonervosum. Nailfold capillaroscopy (NFC) is a reproducible, non invasive, painless, inexpensive and a novel technique for studying proximal nail fold (PNF) capillaries.

Objectives: To study nail fold vascular patterns in Multibacillary Leprosy patients.

Material and Methods: A case series study was done on five newly diagnosed patients of Multibacillary Leprosy attending dermatology department in a medical college hospital, South India during Jun 2021 – April 2022. Patients aged between 30 years to 60 years were enrolled. After explaining the procedure, written informed consent was taken from the participants. Nailfold capillaroscopic patterns of the patients were documented using Fotofinder Universe 2019 (Videodermoscope) which is a computer attached handheld dermoscope with 140 times magnification.

Results: Out of five MB Leprosy patients, 2 (40%) were Borderline Lepromatous leprosy, 1(20%) Lepromatous Leprosy with Type 2 Lepra reaction, and 2 (40%) were Lepromatous Leprosy with trophic ulcer. In our patients, we noticed dilated capillaries, avascular areas, capillary drop outs and micro haemorrhages as most common nail fold capillaroscopic patterns. All patients showed avascular pattern, while 4 showed capillary dropouts and only one patient showed micro haemorrhages.

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Limitations: Large sample studies are further needed

Conclusions: Nail fold vascular pattern denotes microvascular invasion by Mycobacterium leprae. Hence decreasing the vascularity.

Keywords: Capillaroscopy, Hansens, Multibacillary, Videodermoscopic

#0268/ ILCABS349

A COMPARISON OF DIFFERENTIAL STAINING TECHNIQUES FOR MYCOBACTERIUM LEPRAE IN HISTOLOGICAL SECTIONS

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Introduction: Fite Faraco stain and its modifications are routinely used in tissue sections for detection of Mycobacterium leprae. The cell wall of Mycobacterium leprae is a covalently linked peptidoglycan-arabinogalactan-mycolic acid complex. The oxidation of polysachharide by periodic acid and chromic acid is responsible for the staining of lepra bacilli by PAS and GMS stains respectively.

Objectives: To compare the number of Mycobacterium leprae stained by the Fite Faraco (FF), Gomori Methenamine silver (GMS) and Periodic acid Schiff (PAS) stain methods

Methods: Tissue sections from thirty cases of multibacillary lepromatous leprosy were individually stained for Fite Faraco, GMS and PAS. The slides were examined using magnification 10 x eyepiece and 40x objective and re-examined under 10x eyepiece and 100x oil immersion. The number of bacilli observed in each slide was graded using a semi quantitative scale. The data was assessed using ANOVA test.

Results: There was significant difference in grading of the bacillary load among the three stains ($p<0.05$) with higher yield of bacilli in GMS and PAS sections. GMS and PAS sections demonstrated bacterial debris and fragments within granuloma that were not visualised on Fite Faraco stain.

Conclusion: Since the bacilli stain black using GMS stain, they can be easily picked on histopathological sections. The differential staining of fragments of degenerating lepra bacilli suggest that mycolic acid loses its integrity long before the reducing properties of peptidoglycan core are lost. GMS and PAS stain can be used to monitor efficacy of antileprosy treatment by monitoring of persistent bacterial material, which act as continuing sources of antigen, contributing to lepra reactions. Incorporation of GMS for slit skin smear under National leprosy elimination programme will increase sensitivity of diagnosis at field level, that are missed on fuchsin staining.

Keywords: Mycobacterium, Differential, Stain, Leprosy

#0269/ ILCABS366

HISTOPATHOLOGICAL FINDINGS IN DERMAL NERVES IN REACTIONAL VERSUS NON REACTIONAL LEPROSY: A PROSPECTIVE STUDY

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Introduction: Nerve destruction is central to the pathogenesis and clinical manifestation of leprosy reactions. However, dermal nerve pathology in leprosy reactions has not been clearly elucidated in literature.

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Haematoxylin and eosin (H& E) staining may not accurately pick up fragmented or damaged nerves and thus special stains may be required to highlight such nerves.

Objectives: To compare pathological findings of dermal nerves in leprosy reactions and non-reactional leprosy using Haematoxylin & Eosin stain and Immunohistochemistry (S-100).

Materials and methods: Fifty-six patients of either sex with leprosy reactions diagnosed clinically were recruited as cases and 30 patients of non reactional leprosy were included as controls. The number and level of nerves, nerve edema, relation of granulomas to nerves, perineuritis, pattern of nerve involvement and quantification of each nerve pattern were noted on H&E stain and S-100 immunostain on skin biopsy sections.

Results: Most cases belonged to BT (32.8%) and LL (32.8%) types while most controls were classified as BT (44.8%). We found greater dermal nerve infiltration, fragmentation and destruction during reactions when compared to non-reactional leprosy. Nerve fragmentation, subcutaneous nerve involvement and severe nerve edema were higher in T2R compared to T1R, mostly attributed to higher number of severe T2R (n=23/25). Among T1R, higher nerve destruction was found in upgrading compared to downgrading reaction. The sensitivity of S-100 was higher compared to H&E in the study of dermal nerves.

Limitations: Our study suffers from the limitations of a small sample size and larger studies with serial biopsies would greatly add to the understanding of the immunopathogenesis and the fate of dermal nerves in leprosy reactions.

Conclusion: The quantification of different patterns of nerves, especially using special stains such as S-100, may shed more light on nerve fibre involvement and destruction in leprosy reactions and may probably help us understand the prognosis

Keywords: Leprosy, Reactions, Dermal nerves, Patterns, Histopathology, S-100

#0270/ ILCABS377

DELINEATION OF THE MOLECULAR MECHANISM OF CC CHEMOKINE LIGAND 2 GENE POLYMORPHISM WITH LEPROSY SUSCEPTIBILITY

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Introduction: C-C Chemokine Ligand-2 gene polymorphism was found to be associated with leprosy susceptibility; however, the mechanism is not clearly understood.

Objective: Investigation of the molecular mechanisms of CCL2 gene polymorphism in the regulation of immune responses

Patients/Material and methods: CCL2 and various cytokines were estimated in leprosy-affected persons (LAP) and in healthy controls who were genotyped for CCL2 -2518A>G SNP. Chemokine expression was also analyzed in peripheral blood mononuclear cells. Further, an Electrophoretic mobility shift assay was carried out in THP-1 cell lines stimulated with whole-cell sonicates (WCS) of *M leprae*. The protein identified was characterized using MALDI-TOF-TOF. The comparison was made with reference to disease status as well as with reference to genotypes using various non-parametric statistical tests in STATA statistical software.

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Results: The level of CCL2, IL-12, TNFα and TGFβ is significantly higher in LAP compared to healthy controls. The IFNγ level is significantly higher in healthy controls compared to LAP. CCL2, IFNγ, and TGFβ were found at higher levels in LAP having CCL2 -2518 AA genotype followed by AG and GG genotype. In contrast, IL12 and TNFα levels were higher in LAP with -2518 GG followed by AG and AA. A positive correlation was observed between CCL 2 level with TGFβ level whereas a negative correlation was observed with IL12 in LAP. Transcription factors binding to the polymorphic site of the gene were characterized and found to be Human Zinc Finger Protein 443 through MASCOT Search analysis. The MASCOT Score was 66, nominal mass 77465, calculated PI 9.30.

Limitations: Findings are based on a representative number of participants

Conclusion: TGF β was observed to be correlated significantly with serum CCL2 level in LAP. Human Zinc Finger Protein 443, a DNA binding protein was identified suggesting its role in gene regulation of CCL2.

Keywords: CC-Chemokine ligand 2, Transcription factor, Cytokines, Gene polymorphism, Mycobacterium leprae

#0271/ ILCABS428

THE CLINICOPATHOLOGICAL FEATURES AND TISSUE BACTERIOLOGICAL INDEX IN MULTIBACILLARY LEPROSY - A CASE SERIES

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Introduction: Leprosy is caused by Mycobacterium leprae. Demonstration of the organism in tissue section/ slit skin smear is an approach to confirm diagnosis. However absence of organism doesn't rule out leprosy because 10000 organism/gm of tissue is needed for its demonstration. Clinicopathological correlation is a major supporting evidence in diagnosis and disease classification.

Objective: To correlate the clinical spectrum of multibacillary leprosy cases with histopathogical spectrum & bacillary index in tissue sections.

Materials & Methods: Eleven clinically diagnosed multibacillary cases from April 2021 to March 2022 were studied. Their clinical spectrum as per Ridley-Jopling classification was noted. Their skin biopsy specimen was subjected to hematoxylin-Eosin & modified Fite-Faraco stain. The clinical features were correlated with histopathology & bacillary index(by using Ridley-Jopling logarithmic scale) in fite faraco stained tissue sections.

Results: The clinicopathological concordance was 72.7%(8cases BB-1, BT-BB-1, BL-2, BL-LL-1, LL-3 cases including 2 histoid leprosy). In 2 patients having overlapping spectrum, histopathological features were consistent with lower spectrum. This may be due to biopsy taken from the lesions of clinically lower spectrum. Two had lower spectrum in histopathology constituting 18%. They were partially treated BT and BL patients having features of indeterminate leprosy in histopathology. One case of BL leprosy had histopathological features of LL, which indicates pathological progression preceding clinical manifestations. Fite faraco was positive in 9/11 cases(81.8%). Bacillary index of 6+(Globi) seen in 66.6% of clinical MB cases(LL-3, BL-3 cases). Lower BI seen in 33.3%(BB-1, BLtoLL-1, BL-1). Two patient's specimen did not show any bacilli (BT-1, BT-BB-1).

Limitations: Smaller number of cases. Paucibacillary cases not included.

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Conclusions: Proper selection of biopsy site is mandatory when clinical lesions in different spectrum were present. Treatment status of patient also needs to be considered during histopathological correlation. The role of Fite faraco stain in confirming paucibacillary leprosy needs further study.

Keywords: Multibacillary leprosy cases, Histopathology, Clinicopathological correlation, Fite faraco stain

#0272/ ILCABS432

COMPARATIVE EVALUATION OF KINYOUN COLD STAINING WITH THE GOLD STANDARD ZIEHL NEELSEN (ZN) HOT STAINING METHOD IN SLIT SKIN SMEAR MICROSCOPY FOR BACTERIOLOGICAL DIAGNOSIS OF LEPROSY

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Introduction: Ziehl Neelsen (ZN) staining technique is the conventional method used to detect the acid fast bacilli in slit skin smear for diagnosis of Leprosy. In ZN staining, the basic fuchsin phenol dye is used with heat thus easy penetration of dye inside the bacterial cell wall. However, the hot method poses some disadvantages like overheating of slide with phenol causes stain deposit in slides and leads to misdiagnosis. Kinyoun cold staining technique is an alternative for ZN staining where higher concentrations of basic fuchsin and phenol were used with extended 20 minutes of time, so the study compared the cold method with standard hot method in leprosy diagnosis.

Objective: To evaluate the efficiency of Kinyoun staining in comparison with Ziehl Neelsen staining in slit skin smear microscopy for Leprosy diagnosis.

Methodology: Slit skin smears from 64 subjects that are presumed to have had leprosy were studied. Two slit skin smears from four sites (right ear, left ear and any two patches) were collected from each subject. The slides were stained as per the NLEP guidelines. Standard positive control and negative control slides were used as reference. Smears are graded to report BI (Bacteriological Index) and MI (Morphological Index).

Results: Out of 64 subjects, 51 subjects were confirmed to have had Leprosy, out of which 18 (35%) were positive by both staining methods. Smears from all the 13 subjects who were suspected for leprosy were negative by both the methods. One smear had discordance between the methods. The sensitivity and specificity of the cold method compared to hot method was 100% and 97% respectively.

Conclusion: Kinyoun staining seems to be comparable with Ziehl-Neelsen method for slit skin smear examination. Kinyoun staining method can be followed for staining the slit skin slides particularly in the field where spirit lamps

Keywords: Leprosy, Diagnosis, Slit skin, Examination, Ziehl-Neelsen staining, Kinyoun staining

#0273/ ILCABS438

"RELAPSE – A DIAGNOSTIC ENIGMA" THE ROLE OF 16S RRNA PCR IN DECISION ON RESTARTING MDT

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Introduction: Relapse of Hansen's disease is a diagnostic enigma as the skin lesions can show clinical activity,acid fast bacilli(AFB) in slit skin smear(SSS)& granuloma in histopathology even after Release From Treatment.Late

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reversal reaction &other dermatoses mimicking leprosy need to be ruled out in suspected relapse.Histopathological changes &bacteriological index take time to resolve after therapy &identifying solid staining bacilli needs experience & skill.Hence,decision regarding restarting of anti leprosy therapy is often empirical.In this case series,we describe five cases of suspected relapse which showed clinical,bacteriological &histopathological evidence of disease activity where 16S rRNA PCR was used for decision making regarding re-initiation of MDT.

Objective: To document the role of 16S rRNA PCR assay in assessing viability of *M. leprae* to decide on restarting anti leprosy treatment in patients with suspected relapse.

Methodology: All consecutive patients with suspected relapse from June2021 to May2022 were tested for 16S rRNA PCR for assessing viability of bacilli in skin biopsy specimen.

Result: All our patients were lepromatous,adequately treated & released from treatment.The new lesions of all patients showed AFB in SSS& granuloma in histopathology.On 16S rRNA PCR assay, none of the biopsy specimens showed viable bacilli,hence,active infection was ruled out in all.Two of the four patients were diagnosed as late reversal reaction& type 2 lepra reaction each & were managed with anti-inflammatory agents.On follow up,the hypopigmented macules of the fifth patient became depigmented &developed leucotrichia;skin biopsy on further detailed examination revealed absence of melanocytes& he was managed as vitiligo.All patients had symptomatic improvement.

Limitation: Ours is a case series with short period of follow up.Studies with larger sample size&longer follow up are required to confirm the findings.

Conclusion: Assessing viability by 16S rRNA PCR serves as an objective parameter to rule out active infection with *M. Leprae*. This can avoid unnecessary re-initiation/prolongation of MDT or addition of alternative drugs.

Keywords: Relapse, 16sRNA PCR, Viability, Reversal reaction, Restart MDT, *M. Leprae*

#0274/ ILCABS449

DERMOSCOPY OF HANSEN SPECTRUM AND ITS CLINICO-HISTOPATHOLOGICAL CORRELATION

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Introduction: Leprosy is a great mimicker with varied clinical presentations. Biopsy and Slit Skin Smear (SSS) are confirmatory but invasive procedures. Dermoscopy is handy noninvasive technique act as a link between clinical and histopathological examination.

Objective: To determine the dermoscopic findings of leprosy spectrum and its clinico-histopathological correlation

Material And Methods: A cross sectional observational study done on treatment naive leprosy patients in a tertiary care hospital over a period of 3 months.

A total of 50 patients (29 males and 21 females) were categorized according to Ridley-Jopling classification. The most prominent lesions were photographed and evaluated dermoscopically and biopsied.

Results: Of 50 patients, 3 cases of Tuberculoid, 18 of borderline tuberculoid (5 in type 1 reaction), 13 of borderline lepromatous (3 in type 2 reaction), 10 of lepromatous (3 in type 2 reaction) and 6 of histoid leprosy were studied. The dermoscopic findings were correlated clinico-histopathologically. Yellowish orange

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structureless areas corresponding to dermal granulomas and vascular structures seen as linear branching and crown vessels were consistent throughout the spectrum (90%). Tuberculoid pole showed decrease hair and white dots. Broken pigment and structureless white areas were also seen (83.3%). Lepromatous pole showed xerosis and scaling (72.22%). Lepra reactions were characterized by dilated vessels and increased erythema (95%) with scaling and follicular plugs in type 1 reaction. Histoid Hansen showed crown vessels and increased peripheral pigmentation (100%). However, accentuation of normal pigment network with prominent dotted and tortuous vessels seen in center like 'blood in the hole' in borderline cases is a novel finding seen in our study (81.25%).

Limitations: Same study with large sample size and correlation with SSS findings will be more beneficial.

Conclusion: Yellowish orange areas and vascular structures are consistent findings seen in leprosy. Broken pigment network, crystalline structures, decrease hair and eccrine openings

Keywords: Dermoscopy, Hansen, Histopathology, Tortuous vessels

#0275/ ILCABS486

EXOSOMAL-DERIVED MIR4485-3P DOWN-REGULATED CD40L TO INHIBIT CD4+T CELLS FUNCTION IN ML INFECTION

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. Early accurate diagnosis of leprosy is very important.

Objectives: To explore the specific molecular changes of sera exosomes in patients with leprosy of different types and explore the relevant mechanisms.

Material and methods:

1. MiRNA microarray detection and analysis were performed on sera exosomes of different types of leprosy patients to obtain miRNAs profile, and verify the results by RT-qPCR.

2. A human mononuclear/macrophage and *M. leprae* co-culture system was established at the cell level in vitro to verify the expressions of significantly differentially expressed miRNA in supernatant exosomes and cells.

3. Verify the regulation of differentially expressed miRNA on predicted target genes by cell experiments in vitro.

Results: 1. MiRNA microarray (10 T-lep, 10 L-lep, 10 type 2 reaction patients and 10 normal individuals) and validation sets showed that miR4485-3p ($p<0.01$) and miR1227-5p ($p<0.05$) were higher expression in leprosy patients than controls. Target gene bioinformatics prediction showed that miR4485-3p can down-regulate CD40LG expression in T-lep patients.

2. In vitro expriment, it was found that the high expression of miR4485-3p both in supernatant exosomes and cells.

3. After transfecting miR4485-3p mimic into Mycobacterium leprae treated monocyte/macrophage and cultivating autologous T cells, it was found that, CD4+T cells function was restrained by down-regulating

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CD40L expression, furthermore it also inhibited the activity of macrophages by down-regulated CD40 expression, together with expression of CD86, TNFa, IL1B, and IL6, and maintain the vitality of bacteria.

Limitations: The study was lack of large amount of clinial samples to verify the results. And PBMC from different donators differ widely.

Conclusions: After infected with Mycobacterium leprae, Macrophages can regulate CD40L on the surface of CD4+T cells by targeting the delivery of exo-miR4485-3p, thereby, inhibiting their function in immune response.

Keywords: Leprosy, Sera exosome, MiRNA, Microarray, MiR4485-3p, CD40L

#0276/ ILCABS508

TITLE: A PILOT STUDY TO ASSESS THE DRUG RESISTANCE PATTERNS AND PREVALENCE AMONGST LEPROSY PATIENTS AT A TERTIARY CARE HOSPITAL

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Introduction: In order to preserve the efficacy of MDT and to prevent the spread of drug-resistant bacilli it is pertinent that mutation detection should be attempted, especially in cases where treatment failure seems a possibility. Considering the increasing frequency of non-responsiveness to WHO-MDT, this study was planned to screen for drug resistance to anti-leprosy drugs in leprosy cases.

Aim: To determine primary as well as secondary resistance to anti-leprosy drugs among newly detected cases, relapsed cases, and cases with persistent skin lesions after completion of MDT (non-responders)

Material and Methods: A total of 106 leprosy cases (paucibacillary and multibacillary) including new (n=57), relapsed (n=14), and cases with persistent lesions (n=35) attending leprosy clinic at a tertiary care institute, were recruited. A 3-mm punch biopsy from skin lesions was collected, DNA was extracted and processed for PCR amplification of the drug-resistant determining regions in rpoB, folP and gyrA genes. PCR products were purified and followed by sequencing reaction.

Results: Resistance mutations were identified in 14/106 (13.2%) patients (4 smear negative): only ofloxacin (Ala91Pro) in 10 patients including primary in 8 (7.5%) new cases and secondary in 2 relapsed cases (1.9%); only rifampicin (Ser456Leu) in 3 patients with persistent lesion); only dapsone (Pro55Leu) in one patient with persistent disease.

Limitation: A smaller sample size.

Conclusion: In the current cohort, the overall resistance rate among 106 patients was higher than what has been recently reported in other multinational studies by WHO. However, individually, it was less for rifampicin (2.8%) and dapsone (0.9 %) except for ofloxacin (9.4 %). None of the patients showed dual resistance. This calls for robust drug resistance surveillance in leprosy in India which harbors the highest caseload in the world.

Keywords: Drug resistance, Rifampicin, Dapsone, Mutation, Ofloxacin

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#0277/ ILCABS512

TREND OF DRUG RESISTANCE IN *M. LEPRAE* ISOLATES FROM RELAPSED LEPROSY PATIENTS FROM 2018 – 2021

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Introduction: Implementation of multidrug therapy in leprosy control program has significantly reduced the global prevalence of leprosy in last two decades. However, continued appearance of new cases indicates the existence of active transmission in the country. Relapse occur either due to treatment failure or reinfection and could be a new source of leprosy transmission by drug resistant *M. leprae*. Therefore, at this crucial juncture of elimination drug resistance (DR) testing in relapse cases is of utmost importance to stop transmission of DR strains in the community.

Objective: To find out trend of DR strains of *M. leprae* in relapsed cases.

Methods: We screened a total of 1893 relapsed cases from The Leprosy Mission hospitals and other few tertiary care hospitals in India between 2018 and 2021. Slit- skin tissue samples were collected from all the subjects. DNAs were extracted and analysed for PCR targeting genes associated with drugs (Rifampicin, Dapsone and Ofloxacin) in *M. leprae* and was determined by Sanger sequencing.

Result: We observed resistance to Rifampicin in 80 (4.2%), to Dapsone in 59 (3.1%) and to Ofloxacin in 13 (0.68%) patients from several tertiary care hospitals in Delhi, West Bengal, Uttar Pradesh, Gujarat, Chattishgarh, Tamil Nadu Dehradun, Chandigarh, Maharashtra, Gujarat. Highest percentage of Rifampicin resistance was also from Delhi, 64 (3.3%). Distribution pattern of DR strains in other states will be presented.

Limitation: As the study was limited to a very few areas, it is not a true representation of DR of the whole country.

Conclusion: Based on the above findings we strongly recommend setting up of a robust and active drug resistant surveillance mechanism urgently throughout the country to stop the transmission of drug resistant *M. leprae* in the community.

Keywords: Drug resistance, Relapse cases, Leprosy, Multidrug therapy

#0278/ ILCABS513

NERVE CONDUCTION STUDIES IN HANSEN'S DISEASE AND ITS CLINICAL CORRELATION

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Introduction: Leprosy is one of the common treatable causes of peripheral neuropathy and nerve conduction studies (NCS) gives us a broad view of nature of nerve involvement along with its association with clinical nerve

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findings and the disease spectrum. This study aims at providing information on integrity of nerve function in leprosy and to bring out patterns that pick neuropathological alterations in clinically normal nerves.

Objectives: Primary: To study nerve conduction in patients of Hansen disease

Secondary: To correlate the nerve conduction studies with clinical spectrum of leprosy

Materials and Methods: Descriptive observational study of consenting newly diagnosed confirmed adult leprosy cases (n=40) who undertook nerve conduction test after detailed dermatological and neurological assessment after ruling out other causes of peripheral neuropathy. Motor and sensory nerves were studied separately for compound muscle action potential, sensory nerve action potential, latency, conduction velocity and compared with the standard reference values. Pattern of NCS was co related with the nerve function impairment.

Results: NCS pattern revealed axonal neuropathy in majority (n=15) followed by mixed pattern (n=6) and few demyelination. In sensory NCS velocity was affected more and amplitude in motor nerves. 53.4 % of clinically thickened nerves had a normal NCS while 16.2% of clinically uninvolved nerves had abnormal NCS ($p > 0.05$) Significant association was seen between hypoesthesia and muscle power with all three parameters of sensory and motor NCS respectively. Sensory NCS was affected most in sural nerve (45%) while common peroneal nerve (30%) has altered motor NCS findings.

Limitations: Over 50% of clinically thickened nerves can have a normal NCS. Recurrent inflammation and simultaneous degeneration and regeneration of nerve, make interpretation of NCS findings in leprosy a challenge.

Summary and Conclusion: NCS of unthicken nerves (Sural) can detect subclinical neuropathy which would aid early diagnosis and prevention of disabilities

Keywords: Leprosy neuropathy, Nerve Conduction Studies (NCS), Latency, Amplitude, Conduction velocity, Axonal demyelination

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#0279/ ILCABS521

LEPROSY IN THE 21ST CENTURY- AN EVALUATION OF CLINICAL AND HISTOPATHOLOGICAL SPECTRUM OF LEPROSY IN TERTIARY CARE HOSPITAL IN KARNATAKA

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Background: Leprosy (Hansen's disease),a communicable disease still continue to be a social stigma and leading cause of permanent physical disability. It is classified into 5 groups based on Ridley Hopping classification. However a great variation has been observed in interpretation of histopathological examination of skin biopsies and clinical presentation of disease.

Objectives: To correlate clinical diagnosis with histopathological diagnosis of Leprosy patients in Tertiary Care Hospital.

Materials and Methods: This study was conducted from January 2020 to November 2021 in Tertiary Care Hospital on 50 untreated clinically suspected case of Leprosy classified as per Ridley Jopling classification. Skin biopsies were taken from active lesion in all patients and were stained with H&E stain for identification of *M. leprae*, Slit smears were done to study bacillary index.

Statistical Analysis: Descriptive analysis was done in form of percentage or proportion

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Results: In this study 50 cases of Leprosy diagnosed as per Ridley Jopling clinical classification were evaluated histopathologically, most of the cases were seen in young adult males and between 20-30 years, majority of cases presented with erythematous lesion (26 cases,52%) and 16 cases (32%) presented with hypopigmented lesion. Multiple skin lesions and multiple nerve involvement were commonly seen in lepromatous spectrum. BT Hansen was the most common type (19 cases,38%) clinically and histopathologically. Overall correlation seen in 42 cases.

Conclusion: As clinical diagnosis of early Leprosy lesions are difficult due to lack of cardinal signs hence biopsy should be done in all cases in order to improve classification and treatment.

Keywords: Leprosy, Ridley Joplin Classification, M.lepare, Hansen Disease, Slit skin smear and H&E Stain

#0280/ ILCABS534

PCR AND DNA SEQUENCING STUDY FOR THE SURVEILLANCE OF ANTI-MICROBIAL RESISTANCE IN LEPROSY IN AN URBAN LEPROSY CENTRE IN SOUTH INDIA

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Introduction: While the treatment of leprosy progressed to the current MDT, so did the development of antimicrobial resistance (AMR) also, thus hindering cure and leading to relapse, which is a major obstacle to global leprosy elimination programs.

AMR in leprosy was not assessed until the last decade since *M. leprae* has not been grown in vitro on artificial media. It is detected only through laboratory tests on mouse foot-pad, and by PCR and DNA sequencing. Genetic markers of drug resistance were identified in the drug-resistance-determining regions of the genes-folP1 (dapsone), rpoB (rifampicin) and gyrA (fluoroquinolones).

Objectives: The study aimed at screening for AMR in *M. leprae* to dapsone, rifampicin and ofloxacin in this geographic location.

Materials and Methods: Both new and treated patients with clinical features of leprosy who were positive for *M. leprae* in slit-skin-smear or had features of relapse were included in the study after consent. Skin biopsy samples were taken for PCR based amplification of folP1 gene for dapsone, rpoB for rifampicin and gyrA gene for ofloxacin followed by DNA sequencing for detection of resistance.

Results: Screening of 44 leprosy patients was done, (37 males, 7 females). 34.09% patients were in the 31-40 years age group.

There were 28(63.63%) HD(LL) patients, including 6 histoid variant, 10(22.72%) HD(BL) and 6(13.63%) HD(BT) who had relapsed.

AMR was noted in 4(9.09%) patients, with resistance to dapsone in 2(4.54%), rifampicin in one(2.27%) and ofloxacin in one(2.27%). Of the 17 patients with suspected primary resistance, one each was resistant to rifampicin and ofloxacin. There was no case of multiple drug resistance.

Limitations: Small sample size

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Conclusion: AMR of 9.09% with primary resistance to rifampicin and ofloxacin, is worrisome, since it hampers the efficacy of the WHO MDT. AMR monitoring may be considered in all smear positive leprosy, for early detection of primary resistance.

Keywords: *M. leprae*, Resistance, PCR-DNA sequencing, Dapsone, Rifampicin, Ofloxacin

#0281/ ILCABS556

DETECTION OF ANTI-*M. LEPRAE* ANTIBODIES IN CHILDREN IN LEPROSY-ENDEMIC AREAS

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Introduction: As interruption of Mycobacterium leprae transmission is imminent in many countries, a test to detect infected asymptomatic individuals is required. Antibodies directed against *M. leprae* antigens are indicative of *M. leprae* infection but cannot discriminate between active and past infection. Seroprevalence in young children, however, reflects recent *M. leprae* infection and may thus be used to monitor transmission in an area.

Objective: We aimed to evaluate literature on serological tests measuring anti-*M. leprae* antibodies in children without leprosy below the age of 15 in leprosy-endemic areas and assess seroprevalence among children in an endemic area in India (Bihar).

Material and methods: A literature search in the databases Pubmed, Infolep, Web of Science and The Virtual Health Library and a serosurvey for anti-PGL-I IgM antibodies among children in Bihar, using the LUMC anti-PGL-I test strips and fingerstick blood, were performed.

Results: 30 full-text articles reported data from ten countries using serological tests measuring antibodies against PGL-I or synthetic derivatives thereof, either quantitatively (ELISA or UCP-LFA) or qualitatively (ML-flow or NDO-LID rapid test). The median seroprevalence in children in endemic areas was 14.9% and was stable over time if disease incidence remained unchanged. Importantly, seroprevalence decreased with age, indicating that children are a suitable group for sensitive assessment of recent *M. leprae* infection. Among 1,860 children (age 3-11) from Bihar, a similar seropositivity for anti-PGL-I IgM of 11.6% was found.

Limitations: Direct comparison between areas based on the data reported in the included studies, was impeded by the use of different tests and cut-off levels.

Conclusions: Quantitative anti-PGL-I serology in young children holds promise as a screening test to assess *M. leprae* infection and may be applied as a proxy for transmission and a means to monitor the effect of (prophylactic) interventions on the route to leprosy elimination.

Keywords: Antibodies, (school)children, Infection, Leprosy, PGL-I, Transmission

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#0282/ ILCABS578

UTILITY OF A MYCOBACTERIUM LEPRAE MOLECULAR VIABILITY ASSAY FOR CLINICAL LEPROSY: AN ANALYSIS OF CASES FROM THE PHILIPPINES, ETHIOPIA, AND NEPAL

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Introduction: Mycobacterium leprae is a slow-growing species of mycobacteria that cannot be cultured in axenic media. This presents a number of challenges for monitoring treatment efficacy and advancing new drugs and regimens for treating leprosy. We previously developed a molecular viability assay (MVA) that measures expression of hsp18 and esxA transcripts to determine viability of *M. leprae* directly from infected tissue.

Objectives: The objective was to determine the utility of the MVA for practical use on clinical specimens.

Methods: Leprosy cases from the Philippines (N = 199), Ethiopia (N = 40), and Nepal (N = 200) were diagnosed by clinical examination, slit-skin smears (SSS) from index sites, and histopathology. Biopsies for MVA were collected from an active lesion and stored in 70% ethanol. DNA and RNA were extracted from the tissue, and *M. leprae* were enumerated on the DNA fraction via RLEP qPCR. DNased RNA was then normalized to the equivalent of 3x103 *M. leprae* per reverse transcription reaction, and hsp18 and esxA transcripts were amplified by qPCR on the resulting cDNA.

Results: There was a strong correlation between RLEP enumeration on the specific biopsy specimen for MVA and the average SSS bacterial index (BI) in all three cohorts ($p < 0.001$). *M. leprae* viability could be determined on most biopsies with an average SSS BI ≥ 2 and decreased as duration of leprosy multidrug therapy increased (r2 = 0.814). The MVA detected viable *M. leprae* in relapse patients and showed significant correlation with the mouse footpad assay ($p = 0.018$).

Limitations: PCR technology is expensive for many laboratories.

Conclusions: The MVA is a *M. leprae*-specific, sensitive, and relatively quick test. Clinically, the MVA would likely be most useful to monitor treatment, confirm suspected relapse cases, and determine efficacy of new leprosy drugs in clinical trials.

Keywords: Molecular viability test, Clinical, Drug trial, Relapse, Treatment monitoring

#0283/ ILCABS580

A NEURAL NETWORK(COMPUTER BASED) APPROACH FOR EARLY DIAGNOSIS OF LEPROSY IN PATIENTS

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Introduction: Leprosy is a disease caused by a bacterium namely Mycobacterium Leprae. Although a treatment exists for the disease, a permanent cure is not available. If the treatment has not commenced and

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the disease has propagated, it could lead to permanent disfigurations and disabilities thus the importance of early diagnosis is critical.

Objectives: Diagnosis of leprosy can be missed by medical officers due its characteristics. The disease may not always show visual symptoms. Currently limited computer science-based solutions are available to identify the disease. The objective is to provide an early diagnosis of leprosy based on the clinical notes (signs and symptoms).

Patients / material and methods: Currently only machine learning techniques have been used in the domain of text classification for leprosy. The proposed solution includes a deep learning text classification system that has been trained on a significantly larger data set of signs and symptoms of patients having leprosy and patients not having the disease, with the main goal of providing an early diagnosis.

It can be considered as a novel implementation since a deep learning technique has not been yet applied in the domain of text classification in leprosy and the goal of securing an early diagnosis was lacking in previous research studies.

Results: The implemented solution was able to diagnose the disease with a very high accuracy outperforming the considered baseline machine learning models marginally in many accuracy aspects. An engineered leprosy dataset was contributed as well without any ethical implications.

Limitations: The main limitation of the solution was that the diagnosis was restricted to dermatological diseases.

Conclusion: The solution was perceived to work as expected by medical experts and was suggested to be used as a pilot project at a hospital.

Keywords: Early Diagnosis, Deep Learning, Natural Language Processing, Text Classification, Leprosy

#0284/ ILCABS584

ANTI-*M. LEPRAE* ANTIBODY RESPONSE IS NOT RELATED TO THE NERVE INVOLVEMENT IN LEPROSY

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Introduction: Leprosy is a chronic infectious disease caused by *M. leprae*. The bacterium has special affinity to nerves and damages the sensory system. Nerve damage is one of the cardinal signs of this disease. PGL-1 antibodies are specific to *M. leprae* infection and are diagnostic markers for leprosy. In the present study we wanted to see the association of nerve damage with anti-PGL-1 antibodies.

Objective: Objective of the study is to assess the nerve damage and see whether antibody production to the specific molecule PGL-1 is linked to the phenomenon. To assess this phenomenon leprosy cases with and without neuritis and on steroid therapy were taken in the study

Results: The natural di-saccharide antigen (ND-BSA) which is derived from the *M. leprae* specific phenolic glycolipid-1 (PGL-1) revealed immune response in neuritic and non-neuritic leprosy patients for both IgG and IgM classes. It is observed that there is no significant association between the nerve involvement and

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the *M. leprae* specific antibodies of both IgG and IgM classes in the leprosy group with neuritis undergoing therapy, completed the therapy and the leprosy cases who did not have neuritis.

Conclusion: This study reveals that the PGL-1 derived ND-BSA is a potent stimulator of immune response in wide variety of leprosy cases. Further, Contrary to the anticipation there is no statistical significance between immune response to ND-BSA in neuritic cases of leprosy, under treatment, those who have completed the therapy or those leprosy cases which did not encounter neuritis.

Keywords: LEPROSY, NEURITIS, PGL-1 ANTIBODIES, ND-BSA, ELISA

#0285/ ILCABS585

OLD TESTS, NEW RELEVANCE – UTILITY OF COMPLETE BLOOD COUNT PARAMETERS IN PREDICTION OF ERYTHEMA NODOSUM LEPROSUM AND THEIR SEVERITY

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Introduction: Erythema Nodosum leprosum (ENL) is a major cause of morbidity in multibacillary leprosy patients. There is a need for inexpensive and universally available biomarkers which can predict the course of ENL, so that appropriate treatment can be initiated or continued. The neutrophil-to-lymphocyte ratio (NLR), lymphocyte-to-monocyte ratio (LMR), platelet-to-lymphocyte ratio (PLR), and red cell distribution width (RDW) are readily available tests that can be used as markers of various inflammatory conditions.

Objective: This study was done to determine the utility of NLR, LMR, PLR and RDW in the prediction of ENL episodes and their severity.

Materials and methods: All consecutive patients with multibacillary leprosy were included in the study. RDW was noted and NLR, LMR and PLR was calculated. Receiver operating characteristic curves (ROC) were generated to obtain a cut-off point for the prediction of occurrence and severity of the reactions.

Results: A total of 40 lepromatous leprosy patients were included in the final analysis. ROC curves were generated and the cut-off values for RDW and number of reactional episodes was 15.8, 2 for NLR, 2.75 for LMR and 82 for PLR with sensitivity of 70%, 75%, 70% and 65% and specificity of 25%, 30%, 35% and 30%, positive predictive value of 48.3%, 51.7%, 51.9% and 48.1% and negative predictive value of 45.5%, 54.5%, 53.8% and 46.2% respectively. For severity of reaction, sensitivity and specificity for RDW was 73.33% and 28%, NLR was 73.33% and 28%, LMR was 73.33% and 36% and PLR was 66.67% and 32% respectively. Multivariate-logistic regression for prediction of severity of reaction with RDW, NLR, LMR, PLR, gender and Ridley Jopling classification gave a P value of 0.0079 and r2 of 32.9%.

Limitations: Short duration of follow-up and smaller sample size.

Conclusion: NLR and LMR may be potential biomarkers for predicting ENL and its severity.

Keywords: Erythema Nodosum Leprosum, Type 2 lepra reaction, Complete Blood Count, Neutrophil-to-Lymphocyte Ratio, Lymphocyte-to-Monocyte Ratio, Red Cell Distribution Width

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#0286/ ILCABS642

STUDY OF RED BLOOD CELL DISTRIBUTION WIDTH AS HEMATOLOGICAL MARKER IN LEPROSY PATIENTS AND LEPRA REACTIONS AT TERTIARY CARE CENTRE

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Introduction: Leprosy is a chronic mycobacterial disease with varied clinical presentations.

The RDW and MCV values gives an idea about changes in size of RBCs.Red blood cell distribution width is reported in complete blood count & reflects variability in size of circulating red blood cells known as anisocytosis.Higher the variability in size of the cells higher the RDW,where as a low RDW indicates that cells are more or less of same size.

Chronic inflammatory state in leprosy & enhanced immune response during lepra reactions with increased inflammatory cytokines may have widespread collateral effects.RBCs homeostasis is affected by systemic inflammatory changes & affects size,shape,maturity of red cells & reflects as a change in RDW value.

Aims, objectives: To observe RDW changes In patients with leprosy

To correlate changes in RDW values with incidence of reactions in leprosy patients.

Material & Methods: This is a cross sectional study,conducting after approval of institutional ethics committee.Based on clinical and laboratory investigations complete blood counts with RDW,MCV &CRP for all newly diagnosed leprosy patients and those on treatment & presented with lepra reactions attending leprosy clinic and those patients who Presented with various other dermatological problems,e.g.chronic eczema prurigo,keloid scars etc. are enrolled for comparisons.

Results: Out of total 150 patients, 75 patients had Leprosy,while other 75 patients had other dermatological diseases. Out of 75 leprosy cases,50 cases were without lepra reactions,25 had lepra reactions.Out of total 75 leprosy cases,22(28.60%) cases had RDW>16.1,out of which 4 were not in reaction & 18 were reaction(T1R&T2R) cases.out of 18 reactions cases,05 (50%) cases were T1R & 13(88.66%) cases were T2R.

Conclusion: This study highlights a significant rise of RDW value along with increase of CRP in lepra reaction cases

Keywords: RDW, LEPRA REACTIONS

#0287/ ILCABS681

ROLE OF ULTRASOUND IN NEWLY DETECTED HANSEN'S DISEASE FOR EARLY DETECTION OF PERIPHERAL NERVE INVOLVEMENT

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Introduction: Leprosy is a chronic infectious disease, predominantly involves skin and peripheral nerves. Most important consequences of leprosy are due to the involvement of peripheral nerves which leads

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to gross deformities and disabilities. Clinical assessment of nerves is very subjective. High resolution ultrasonography(HRUSG) serves as an important objective method of evaluation of peripheral nerves.

Objectives: To describe the clinical spectrum of leprosy and to compare the peripheral nerve involvement in newly detected leprosy cases by ultrasound with clinical manifestations.

Materials and methods

The study included 24 newly diagnosed leprosy patients during 2021. An informed written consent, detailed clinical history, thorough clinical examination and routine investigations were done. HRUSG of ulnar(UN), median(MN), lateral popliteal(LPN) and posterior tibial(PTN) nerves were done. All the data obtained were analysed statistically.

Results: Out of 24 patients studied, males and females were in the ratio of 5:1 with mean age of 39.7 years; 3 patients were in Borderline tuberculoid, 1 in tuberculoid, 2 in midborderline, 4 in Borderline lepromatous, 10 in Lepromatous and 3 in pure neuritic leprosy spectrum. Ulnar nerve(82%) was most frequently involved. The nerves were significantly thicker with higher mean cross-sectional area. Positive correlation was observed for clinical thickness of nerve and ultrasound findings. 51 nerves(26.56%) that were not thickened clinically were found to be enlarged on HRUSG (UN 4, MN 28, LPN 6, PTN 13).

Limitations: This cross-sectional study was not large enough to be of reasonable precision because it was carried out with small sample size over a limited period of time.

Conclusion: HRUSG could be a useful technique in diagnosis and follow up of leprosy patients by early detection of nerve involvement due to leprosy which may help in the prevention of disability by early treatment.

Keywords: Leprosy, Peripheral nerve, High resolution ultrasonography, Deformities and disabilities

#0288/ ILCABS707

RLEP QPCR AND ANTI-PGL-I POSITIVITY CAN BE USED TO IDENTIFY LATENT LEPROSY INFECTION

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Leprosy new case detection rates (NCDR) worldwide had been relatively stable, however, the Covid-19 pandemic reduced by 37% the NCDR from 2020 to 2021. This unprecedented decrease was due more to operational conditions with restrictions on personal movement and access to health care and the inability of health care professionals to monitor the leprosy situation worldwide leading to severe undercounting of those with leprosy and delays in diagnosis. As a result, it is expected that a larger number of leprosy patients

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will be diagnosed with more advanced disease and disability and delayed treatment in future years as the system resumes operations to detect those with leprosy. To increase the detection of leprosy during the early phases of the disease, we are using an Anti-PGL-I antibody titer combined with the detection of RLEP/PCR in earlobe slit skin smears. A total of 466 individuals were assessed from seven different municipalities state of Pará-Brazil. Using both tests increased sensitivity, specificity, and precision compared to the use of either test alone. The number of individuals included 87 newly diagnosed cases (NDC), 52 post-treated (PT), 296 household contacts (HHC), and 31 healthy endemic controls (HEC). The frequency of double positives was highest in the NDC (40/87, 46%) with numbers for PT (12/52, 23.1%) indicating effective treatment and lower numbers for HHC (46/296, 15.5%) and HEC (0/31, 0%). The frequencies of those who were double negative were reversed with low values for NDC (6/87, 6.9%), higher in PT (15/52, 28.8%), and in HHC (108/296, 36.5%) and highest in HEC (24/31, 77.4%). Most importantly, the data indicate that double positive HHC likely have latent leprosy and are at the highest risk of progressing to disease. Chemoprophylactic treatment of household contacts that are double-positive may be a way to stop the chain of transmission of

Keywords: Latent leprosy, RLEP, PGL-I

#0289/ ILCABS713

HIGH-RESOLUTION PLASMA METABOLOMICS IDENTIFIES ALTERATIONS IN TRYPTOPHAN, FATTY ACID, MICRONUTRIENT, AND ENERGY METABOLISM IN ADULTS WITH LEPROSY COMPARED TO HEALTHY CONTROLS

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Background: High-resolution metabolomics (HRM) is an emerging technology with potential to identify putative biomarkers and pathologic host responses to infection with *M. leprae*.

Objective: Our objective was to use plasma HRM to identify metabolic signatures related to immune function and nutrient metabolism associated with leprosy diagnosis and clinical disease presentation.

Methods: Between June 2018 and December 2019, adults newly diagnosed with leprosy and healthy controls were recruited from leprosy referral clinics in Minas Gerais, Brazil. Plasma samples were analyzed at Emory University, Atlanta, GA, USA for metabolites using an established HRM platform and characterized by accurate mass m/z and retention time. The mummichog metabolic pathway package was used to compare metabolic pathway activity between study groups. Additionally, selected individual metabolites were quantified and compared between the leprosy and control groups.

Results: Sixty-seven individuals were enrolled of which 42 had leprosy (26 multibacillary [MB; 62%] and 16 paucibacillary [PB; 38%]) and 25 were asymptomatic controls. After adjustment for age and sex, we found multiple metabolic pathways were significantly different ($p < 0.05$) between cases and controls including carnitine shuttle, arachidonic acid and prostaglandin formation, linoleate, and TCA cycle metabolism, respectively. Comparing MB to PB (and comparing positive bacillary index (BI) to negative BI): vitamin

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D3, retinol, arachidonic acid, carnitine shuttle, and leukotriene metabolism pathways were differentially regulated. Lower concentrations of tryptophan and higher concentrations of indole-3-acetaldehyde in MB were also found.

Discussion: Immunomodulatory metabolic pathways differed significantly between leprosy cases and controls and highlighted the probably role of IDO-1 in disease presentation. Differences in carnitine shuttle, vitamin D, and vitamin A signatures also provide support for the influence of nutritional status on leprosy presentation. These HRM analyses provide novel insight into leprosy host-pathogen interactions and represent an innovative tool useful for future studies in human leprosy disease.

Keywords: Metabolomics, Immunology, Metabolism, Leprosy

#0290/ ILCABS719

NEUTROPHIL-TO-LYMPHOCYTE RATIO AND PLATELET-TO-LYMPHOCYTE RATIO ARE NOVEL DIAGNOSTIC BIOMARKERS FOR ERYTHEMA NODOSUM LEPROSUM

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Introduction: Erythema nodosum leprosum (ENL) presents as debilitating painful erythematous nodules in multibacillary (MB) leprosy patients. To date, clinical criteria is the main mode of diagnosis of ENL with the available biomarkers being not only unspecific but also expensive.

Objective: We aim to propose the use of neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) as biomarkers of ENL to aid the diagnosis.

Material and methods: This was an analytic retrospective study with a cross-sectional design that describe the distribution and clinical characteristics of all newly diagnosed MB patients of Dr. Soetomo General Hospital Surabaya in the year 2018-2020. Physicians experienced in the diagnosis and treatment of leprosy determined the diagnosis of leprosy based on WHO criteria and MB leprosy based on clinical criteria proposed by B. Naafs et al. The correlation between blood counts and incidence of ENL was analyzed by using Spearman's rho correlation test. A receiver operating characteristic curve (ROC) was generated to identify the cut-off point.

Results: Blood samples were analyzed from 160 patients with MB leprosy. Among these, 22 patients were present with ENL. The median of WBC, neutrophil, and thrombocyte is higher in ENL patients. The number of lymphocyte showed no significant difference in ENL group. In all, NLR cut-off points for diagnosis of ENL were 4.99 (sensitivity 86.4%, specificity 82.5%, accuracy 82.97) while PLR were 237.46 (sensitivity 63.6%, specificity 73.1%, accuracy 71.98%).

Limitations: The diagnosis of ENL in this study was not supported by histopathological findings.

Conclusion: These results suggest that NLR and PLR could be potential biomarkers for the diagnosis of ENL.

Keywords: Erythema nodosum leprosum, Leprosy, Neutrophil-to-lymphocyte ratio, Platelet-to-lymphocyte ratio

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#0291/ ILCABS723

TITLE: LEPROSY DIAGNOSTIC TARGET PRODUCT PROFILE - 1: A DIAGNOSTIC TEST TO DETECT MYCOBACTERIUM LEPRAE INFECTION AMONG ASYMPTOMATIC HOUSEHOLD AND FAMILIAL CONTACTS OF LEPROSY PATIENTS, TREAT THEM WITH APPROPRIATE PROPHYLACTIC INTERVENTIONS AND PREVENT THE OCCURRENCE OF OVERT CLINICAL LEPROSY.

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Introduction: Prior to attracting developers and companies to invest in producing innovative diagnostics for leprosy, a target product profile (TPP) is essential to define requirements for test characteristics that take into account usability in the intended healthcare setting, as well as performance characteristics to ensure the impact on clinical outcomes.

Objective: To develop a TPP for a diagnostic test that can help to identify high-risk individuals with Mycobacterium leprae (*M. leprae*) infection who require an enhanced post-exposure prophylaxis (PEP) regimen than just a single dose of rifampicin.

Methods: The Leprosy Diagnostic Working Group of the Global Partnership for Zero Leprosy, bringing together experts in laboratory science, experts in the clinical aspects of leprosy, and representatives from stakeholder groups in the leprosy community, developed a diagnostic TPP* for a test for infection among asymptomatic household contacts of leprosy patients. The work was conducted in partnership with DTAG using existing technical and modelling resources. A literature review and series of group discussions were conducted to discuss use cases, needs and performance requirements of an ideal/minimal diagnostic test to detect *M. leprae* infection among contacts.

Results: The group recognised the need for a point-of-care and a field-friendly diagnostic tool to detect *M. leprae* (and Mycobacterium lepromatosis in ideal cases) among contacts of leprosy cases, especially those who are household or blood-related contacts. Such a diagnostic can detect *M. leprae* and M. lepromatosis at the subclinical stage, enabling programmes to intervene with appropriate chemoprophylactic or immunoprophylactic tools to prevent progression to clinical leprosy and curb transmission. Modelling was used to understand minimal sensitivity and specificity to significantly reduce transmission of *M. leprae* at the population level.

* Contents will be presented at ILC-2022

Keywords: Target product profile, Diagnostic Test, Mycobacterium leprae, Post-exposure prophylaxis

#0292/ ILCABS727

LEPROSY DIAGNOSTIC TARGET PRODUCT PROFILE - 2: A DIAGNOSTIC TEST TO CONFIRM LEPROSY IN INDIVIDUALS WITH CLINICAL SIGNS AND SYMPTOMS.

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Introduction: As the number of leprosy cases is reducing, so too is the clinical expertise even in endemic countries. This often leads to delay or misdiagnosis and delayed initiation of MDT. A target product profile

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(TPP) is essential to define requirements for test characteristics that consider usability in the intended healthcare setting, as well as performance characteristics to ensure the impact on clinical outcomes.

Objective: To develop a TPP* for a diagnostic test to confirm (or rule out) leprosy of all types, including indeterminate and PB leprosy, which is considered a high priority by the WHO.

Methods: The diagnostic working group at Global Partnership for Zero Leprosy (GPZL), bringing together experts in laboratory science, experts in the clinical aspects of leprosy, and representatives from stakeholder groups in the leprosy community, conducted an intense literature review and series of group discussions to identify requirements for a diagnostic test to assist in the confirmatory diagnosis of leprosy and aid health-care providers in deciding when to initiate treatment. Modelling was used to define performance characteristics of such a test.

Results: The TPP target performance characteristics were modelled to reduce healthcare provider delays in diagnosis as a function of diagnostic performance. It was observed through modelling that, to have a meaningful impact on reduction in time to diagnosis, very high stringency around specificity. The clinical validation of such a test should take into account performance requirements for the entire spectrum of leprosy, including manifestations with low levels of bacilli. Although ideally, such a test would be available as a point-of-care test, it is recognized that to reach the required sensitivity and specificity, laboratory-based testing might be required. A combined test with a two-step test approach may be used to achieve the required testing specificity.

*Contents of the TPP will be presented at ILC-2022

Keywords: Confirmatory Diagnosis, Leprosy, Target product profile, Modelling

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#0293/ ILCABS732

EVALUATION OF SEROLOGICAL TEST AND REAL-TIME PCR (QPCR) IN THE DIAGNOSIS OF LEPROSY DURING ACTIVE SEARCH IN THE STATE OF PARÁ, BRAZIL.

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Introduction: The diagnosis of leprosy can be challenging, and it is known that the laboratory tests currently used are still considered as complementary methods to the main diagnostic tool: the clinical examination performed by specialists in leprosy.

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Objective: To evaluate the performance of laboratory tests in detecting new cases diagnosed during active searches in municipalities in the state of Pará, Brazil.

Material and Methods: Active searches were carried out in Xinguara, Anapú, Melgaço, Gurupá and Redenção in the years 2018 and 2019, based on the mapping of leprosy cases registered in SINAN (Notifiable Diseases Information System) from 2009 to 2019. A dermato-neurological examination and the collection of intradermal scrapings for qPCR and 5 ml of peripheral blood for the titration of anti-PGL-I IgM of the evaluated individuals were performed.

Results: From 142 index cases identified in SINAN, 462 household contacts were evaluated, with 98/462 (21.2%) new cases diagnosed. Serology and the qPCR test were positive in 38/94 (40.4%) and 79/97 (81.4%) in this group, respectively, with double positivity present in 32/93 (34.4%). Among undiagnosed household contacts, 85/314 (27%) were qPCR positive, and 129/331 (38.9%) had a positive serological test result, with double positivity identified in 36/292 (12,3%). Among relapses, positivity in serological and qPCR techniques was present in 3/9 (33.3%) and 6/12 (50%), respectively.

Limitations: We intend to correlate the results of laboratory tests among contacts considered healthy during travel and their current status, i.e. whether they became new cases or not in the last 4 years.

Conclusion: The qPCR technique showed significant positivity among new cases, which highlights its high ability to detect the pathogen in sick individuals. Serology identified considerable exposure of healthy household contacts to leprosy. These findings are important to direct new actions to prevent and fight leprosy among those evaluated.

Keywords: Serological test, Real-Time PCR, Leprosy, Diagnosis.

#0294/ ILCABS742

MOLECULAR DIAGNOSIS OF LEPROSY AND OTHER NTD'S: THE JALMA EXPERIENCES

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Important issues for research in leprosy remains related to diagnosis, treatment, transmission and operational management. Diagnosis continues to be a challenge due to the low sensitivity of the conventional methods, not possible to culture the bacillus "in vitro" so far. In clinical practice, the diagnosis is mainly based on the observation of clinical symptoms and supported by bacteriological analysis. Scope of molecular tools in leprosy diagnosis relies on early detection and diagnosis, prognosis and management and provide quantitative information, high sensitivity & specificity. Many of the methods used in the diagnosis of other mycobacterial infections are not available in leprosy. Surveillance of household contacts of leprosy patients favors early diagnosis of the disease. Semiautomatic, large-scale, cost-affordable quantitative PCR (qPCR) could be used to screen high-risk contacts and indicate chemoprophylaxis and can be used to diagnose leprosy in difficult-to-diagnose cases such as pure neural or atypical skin clinical presentations. In the past 30 years, definitive identification of *M. leprae* has been possible through PCR and could be of immense help for dermatological differential diagnosis in hypochromic or granulomatous lesions. Department of Microbiology & Molecular

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Biology at JALMA had been pioneer in the validation of indigenous PCR methods and also developed several molecular tools for diagnosis of mycobacterial diseases. We have developed an indigenously DNA chip identified 11 genes associated with metabolic pathways and these possibly played an important role in virulence mechanisms which have been identified to be over-expressed in the human host. The genotypes of circulating strains using microsatellite and other markers have also been studied at JALMA and it has been observed that most strains prevalent in that area belong to ancient Indian variety. Overall, the excellent sensitivity and specificity of PCR suggests the technique may be useful and presents an advantage over conventional methods for the early diagnosis of leprosy.

Keywords: *M. leprae*, PCR, QPCR, NOD

#0295/ ILCABS755

A RETROSPECTIVE ANALYSIS OF 19 MULTIBACILLARY(MB) LEPROSY PATIENTS INVESTIGATED WITH NASAL SWAB SMEAR(NSS) FOR MYCOBACTERIUM LEPRAE(*M. LEPRAE*)

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Introduction: It is generally held that dissemination of *M. leprae* is from nasal mucosa. Untreated MB leprosy patients are an important source of transmission through nasal shedding of *M. leprae* into the environment. Thus contacts of untreated MB patients are at higher risk of infection. The disease is challenging to diagnose since there is no gold-standard method to differentiate between infection and disease. The use of Slit Skin Smear(SSS), an invasive test, is variable and lacks sensitivity.

Objective: The objective of study is to look at the NSS positivity for Acid Fast Bacilli (*M. leprae*) in Multibacillary Leprosy.

Material and Methods: This is a retrospective study of 19 clinically diagnosed Multibacillary Leprosy patients who had undergone NSS for AFB (*M. leprae*). The available data of SSS, histopathology were analysed. The material was collected by using a nasal swab repeatedly passing over the nasal mucosa. This was smeared on a glass slide and standard staining method followed.

Results: Of the 19 Multibacillary Leprosy patients, 9(47.4%) patients were positive for AFB (*M. leprae*) in NSS and also in SSS. Remaining 10 patients were negative for both NSS and SSS.

Limitations: This is a retrospective study with low sample size and DNA PCR was not done for the confirmation of *M. leprae* in NSS.

Conclusion: Nasal smears alone are insufficient for an early diagnosis of leprosy. However, by combining several methods and by examining contacts of Multibacillary patients, subclinical infection may be identified. Surveillance of the contacts that could be responsible for spreading the disease would be an easy control strategy to block transmission. This may have important implications for leprosy control. The nasal smear positivity of nearly 50 percent of our patients indicates the high potential for contact cases. However, mere nasal carriage may not imply an active infection.

Keywords: Nasal Swab Smear(NSS), Slit Skin Smear(SSS), Mycobacterium leprae, Multibacillary Leprosy, Acid Fast Bacilli,

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#0296/ ILCABS756

LEPROSY DURING THE COVID-19 PANDEMIC: CHALLENGES AND OUTCOMES OF A REFERRAL LEPROSY HOSPITAL PROVIDING COVID-19 DIAGNOSTIC SERVICES

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Introduction: The COVID-19 pandemic has impeded healthcare systems and leprosy care providers globally. Nepal experienced strict lockdowns for most of 2020-2021, and new leprosy case detection was reduced by 44% in 2020. Our laboratories provided COVID-19 diagnostic services for the community and new inpatients as well as for screening exposed or symptomatic staff.

Objective: To review COVID-19 pandemic impacts on healthcare services to leprosy-affected and others attending general health services of a leprosy referral hospital in Nepal.

Methods: A retrospective review was performed of COVID-19 diagnostic services and leprosy healthcare data from a leprosy referral hospital for August 2020 to May 2022.

Results: A total of 7807 (6190 qRT-PCR, 1617 antigen) tests were conducted resulting in 1714 (22%) SARS-CoV-2 positives detection with 13 associated fatalities. Since September 2020, separate hospital wards were designated for quarantine and COVID-19 isolation. In total, 248 inpatient arrivals (52 leprosy-affected) were isolated for 14-21 days until screened negative– of which 6 ultimately died (1 leprosy-affected). If exposure or symptoms were suspected, staff were immediately screened and quarantined at home. More than 90% of hospital staff tested positive, 12% experienced infection more than once, and ~8% exhibited severe COVID-19 symptoms, but none died. During the Delta wave (March-December 2021), 941 infections were detected (24.3% positivity) with 10 fatalities. COVID-19 breakout in post-quarantine general and leprosy wards occurred only once, amidst a handful of patients who were quickly isolated. In total, 1822 leprosy-affected persons were screened in communities or upon hospital admission with 4%(72/1822) testing positive, for whom the average age was 52±20 (R:20-98) years, 60%(43/72) were male, with 56%(40/72) exhibiting moderate COVID-19 symptoms.

Conclusions: The pandemic exhibited a significant impact on healthcare services to leprosy-affected and others. Ability to quickly screen for SARS-CoV-2 onsite enabled rapid responses and management of COVID-19 outbreaks among staff/hospital wards.

Keywords: COVID-19, SARS-CoV-2, Pandemic, Diagnosis, Health services, Leprosy

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#0297/ ILCABS788

A PRELIMINARY STUDY TO CORELATE THE PREVAILING MICROBES AND MICROBIAL METABOLITES ASSOCIATED WITH LEPROSY FOOT ULCERS

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Background: out 10-25% of leprosy patients develop chronic foot ulcers that subsequently lead to physical disabilities and compromised quality of life of the affected individuals. Bacterial colonization and subsequent biofilm formation has been found to be one of the risk factors for delayed healing of such chronic ulcers in leprosy and need alternative approaches for tackling the biofilms. Since biofilms are recalcitrant to conventional antimicrobials, it is essential to detect them early and treat with appropriate antibiofilm agents. Detecting microbial metabolites that are responsible for biofilm formation could be a surrogate marker for identifying delayed wound healing. We have undertaken a prospective study to identify the microbial metabolites and their correlation with biofilm formation.

Objective:

1) Profiling microbial species isolated from chronic foot ulcers in leprosy

2) Correlating microbial metabolites with biofilm production

Patient/ Materials and Method: Wound swabs were collected from chronic foot ulcers of 37 leprosy affected persons. Swabs were subjected for aerobic bacterial culture, identification and antimicrobial susceptibility testing. Isolates were screened for biofilm production. Metabolite (3-Oxo-C12HSL) screening was conducted for six clinical isolates (two each from biofilm strong producing, weak producing and non-producing isolates) by LC-MS/MS method.

Results: A total of 55 isolates were detected from the 37 wound swab, including 54 bacteria, 1 fungus, out of which 28 were known secondary bacterial pathogens (50.91%), 38.16% were biofilm-producers (Pseudomonas and Klebsilla). P. aeruginosa produced more amount of 3-Oxo-C12 HSL followed by K. pneumonia and E. coli, which correlated with strong biofilm production.

Limitation: Sample size of the study is small. Data for the metabolite correlation with wound healing is not yet available.

Conclusion: Preliminary results of the study indicate the potential application of metabolite screening for infection prevention and control on chronic foot ulcers in leprosy.

Keywords: Leprosy, Leprosy foot ulcer, Biofilm, Microbial Metabolites, Quorum Sensing Molecule, Wound Healing

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#0298/ ILCABS795

CLINICO HISTOPATHOLOGICAL CORRELATION OF SKIN BIOPSIES IN LEPROSY

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Introduction: Leprosy is a chronic granulomatous disease caused by Mycobacterium leprae.

Depending on the degree of immunity, clinical and histopathological features of various types of leprosy may develop. Histopathological examination of skin or nerve biopsies and demonstration of acid fast bacilli in histopthological section will aid in the diagnosis of leprosy.

Objectives:

1) To study histological spectrum of lesions in leprosy.

2) To correlate the histopathological parameters with the clinical forms.

Patients / material and methods: This is a retrospective and a prospective study being conducted at department of DVL, Kamineni Institute of Medical Sciences, Narketpally, Telangana over a period of 3 year. Previous confirmed reported cases of leprosy shall be retrieved from the histopathology department. New cases clinically diagnosed as leprosy, biopsy shall be done from willing patients coming to dermatology OPD. Skin biopsy specimens that are received in pathology department will be studied.

Results: A total of 60 skin biopsies from all clinically suspected cases of leprosy were identified from the Department of DVL. Out of 60 cases, 55 cases had histopathological features of leprosy

Limitations: 1) study conducted in single geographic area 2) biopsy was reported by multiple pathologists.

Conclusion: The spectrum of leprosy manifestation is very wide and considerable overlap exists between different types of leprosy. Accurate response of the tissue in leprosy is indicated by histopathological features while clinical features indicate morphological changes due to underlying pathology. It is therefore logical to expect some disparity between the clinical and histopathological features. Other important point to be considered is inter observer variation. One alarming finding is that the commonest age group of 21-40 years which indicates that leprosy is still affecting the youth.

Keywords: Skin biopsies, Leprosy, Histopathology, Spectrum of leprosy

#0299/ ILCABS802

ASSESMENT OF DRUG RESISTANCE IN PATIENTS OF HANSEN'S DISEASE SHOWING INCREASED BACTERIOLOGICAL INDEX AFTER COMPLETION OF ONE YEAR OF MULTIDRUG THERAPY MULTIBACILLARY (ADULT)- A CASE SERIES OF 5 PATIENTS.

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Introduction: There is usually a fall seen in the bacteriological index (BI) by one log after one year of MDT intake. A failure of decrease in BI or a rise in BI are seen in some multibacillary cases even after one year of therapy. Antimicrobial resistance is supposedly one cause for this phenomenon.

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Objective: Assesment of drug resistance in patients of Hansen's disease having an increase in BI after completion of one year of MDT MB(A).

Material and Methods: Five patients diagnosed with multibacillary Hansen's disease who had an increase in BI after one year of MDT MB(A) were included. Slit skin smear samples were collected from sites which showed the highest BI in previous examinations. The tissue scrapings were rinsed into a centrifuge tube prefilled with 1ml of 70% ethanol. Samples were sent to an apex laboratory for resistance analysis. PCR followed by Sanger sequencing was used to detect the mutation in the drug resistant determining regions in folP1,rpoB and gyrA genes for resistance to dapsone, rifampicin and ofloxacin respectively.

Results: Four patients had LL hansens with ENL and one was a case of BL hansens with Type 1 Reaction. There was an increase in BI in all the patients after one year of treatment with MDT MB(A).Biopsy of all the patients showed well formed macrophage granuloma.Resistance to any of the three drugs were not seen in three cases. Ofloxacin resistance was found in one case. The report of one patient is pending(to be obtained in one week).

Limitations: One report pending.

Conclusion: Three patients despite having an increase in BI were sensitive to all the drugs. So, there could be certain other factors playing a role in persistence of disease activity. This finding warrants exploration of other causes for the rise in BI despite treatment with MDT.

Keywords: Bacteriological index, Antimicrobial resistance

#0300/ ILCABS806

A STUDY OF RT-PCR QUANTIFICATION OF 16S RNA AND 18 KDA ANTIGEN GENE TARGETS IN ASSESSING THE EFFICACY OF MULTI-DRUG THERAPY IN LEPROSY

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Introduction: The morphological index (MI) has become the standard laboratory assay for monitoring therapeutic response in multibacillary patients (MB). Due to lack of adequate standardisation and subjective interpretation, MI is difficult to apply. An RNA-based detection method may better reflect the number of viable organisms, because RNA is generally degraded within a few minutes of cell death.

Objective: We intended to study the usefulness of Reverse transcriptase -Polymerase chain reaction (RT-PCR) based quantification of 16s rRNA and 18- kDa genes in assessing the response to chemotherapy in leprosy patients.

Methodology: Consecutive untreated leprosy patients (MB) were recruited after histopathological confirmation of diagnosis. Baseline Slit skin smear (SSS) and skin biopsy for RT-PCR analysis was done. The same was repeated after 6 months and 1 year of Multi-Drug-Therapy. The strength of expression of target antigens before and after treatment was compared in all cases and compared with MI.

Results: Twenty lepromatous cases (LL-12, BL-5, Histoid-3) were recruited. Five were lost to follow-up, 6 had negative MI, four had 50 % reduction, four had 62.5% reduction and one case had 75% reduction in MI at 1 year of therapy. Correlating with this data, at the first follow-up, a decrease in 16srRNA gene expression was observed in 7 out of 9 cases (77.7%) in which we could detect the 16srRNA gene expression

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at base line. In 6 cases we could not detect the 16srRNA gene expression in the base line. The expression of 18kDa gene analysis showed a significant decrease in 5 out of 9 samples (62.5%), in which the expression of 18kDa gene could be detected at base line.

Limitation: Relatively small sample size

Conclusion: Based on this pilot study data, we recommend 16srRNA and 18kDa for assessing the therapeutic efficacy of Multi-drug therapy.

Keywords: Hansen's, RT-PCR, 18kDa, 16sRNA, Response to MDT, MI

#0301/ ILCABS816

EVALUATION OF SERUM PENTRAXIN-3 LEVEL AND PENTRAXIN-3 GENE POLYMORPHISM IN LEPROMATOUS LEPROSY PATIENTS

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Introduction: Leprosy is a chronic infectious disease, which may result in irreversible deformities due to delayed or misdiagnosis. There is a lack of a specific serum biomarker that can predict the downgrading of disease from upper pole (TT) to the lower pole (LL). We evaluated the role of serum PTX-3 and PTX-3 gene polymorphism as a biomarker in lepromatous leprosy patients. It is a member of the pentraxin superfamily, which participates in the process of inflammation and immune responses.

Objectives: 1. Evaluation of serum Pentraxin-3 levels in lepromatous leprosy patients

2. Evaluation of Pentraxin-3 gene polymorphism (rs2305619) in lepromatous leprosy patients

3. Study the association between Pentraxin-3 gene polymorphism (rs2305619) and serum Pentraxin-3 levels in lepromatous leprosy patients

Method: It was an Observational Cross-sectional study in which 15 clinically and histopathologically diagnosed untreated cases of lepromatous leprosy patients (with or without ENL) were evaluated. Out of 15, six patients were LL with ENL. Borderline Tuberculoid leprosy patients and healthy volunteers with 15 subjects in each were taken as the Control group.

Result: LL group of patients had statistically significant ($p<0.01$) higher levels of serum PTX-3 as compared to BT control and healthy volunteers. Patients with A/A genotype of PTX-3 was associated with higher serum PTX-3 levels in both LL and LL with ENL subjects. G/G genotype was more associated with control groups- BT and healthy volunteers.

Conclusion: Higher levels of serum PTX-3 in LL group of patients were attributed to numerous heavily-infected foamy macrophages in dermal lesions amongst LL patients, which is a major source of PTX-3.

A/A genotype of PTX-3 has susceptibility to disease development and downgrading of disease from good immunity upper pole (TT) to the lower pole with a decreased immune response (LL) whereas the G/G genotype has some protective effect.

Keywords: Pentraxin 3, Serological markers, Serology in leprosy

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#0302/ ILCABS832

WHOLE-GENOME TILING ARRAY ANALYSIS OF MYCOBACTERIUM LEPRAE IN LEPROSY PATIENTS FROM INDIA

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Introduction: Millions of people are affected by leprosy, an infectious disease caused by Mycobacterium leprae. However, little is known about the molecular pathophysiological mechanisms that underpin it. Using DNA chip microarrays, a comprehensive assessment of *M. leprae* mRNA on leprosy skin lesions was undertaken, which comprised the entire spectrum of the disease as well as its reactional phases.

Objective: Mycobacterium leprae contains a small number of protein-coding genes, with half of the genome made up of pseudogenes and noncoding sections, according to a whole-genome sequence analysis. A tiling array with overlapping 60-mer probes covering the full 3.3Mbp genome was created to clarify the *M. leprae* genome's RNA expression profile.

Method: Twenty-six samples from leprotic lesions (PB = 6, LL = 7, T1R = 7 and T2R = 6) and five skin biopsies from healthy contacts were used as controls.

Result: The evaluation identified 1891 differentially expressed mRNAs of *M. leprae* [Fold Change ≥ 2.0, $p \leq 0.05$] in leprotic lesions vs. healthy contacts. It was noted that some of these genes were observed in all forms of the disease. However, we observed that upregulated genes involved in different pathways like biological processes (PB = 986, T1R = 700; LL = 234, T2R = 595); cellular components (PB = 803, T1R = 584; LL = 201, T2R = 492) and molecular functions (PB = 1360, T1R = 1000; LL = 348, T2R = 846).

Limitation: Data need to validate with qPCR analysis.

Conclusion: The role of these mRNAs maybe studied in the context of developing new diagnostic markers and therapeutic targets for leprosy.

Keywords: Microarray, MRNA, Differential expression, Reactions, *M. leprae*

#0303/ ILCABS863

CLINICAL AND SONOGRAPHIC CORRELATION OF MEDIAN AND ULNAR NERVE CHANGES IN PATIENTS WITH LEPROSY-A LONGITUDINAL FOLLOW UP STUDY

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Introduction: Leprosy, common curable peripheral nerve disease, leads to severe nerve damage. Routine clinical assessment of nerve damage in leprosy is subjective and may miss the subclinical nerve damage. High-resolution ultrasound of peripheral nerves has shown to identify early and subclinical nerve damage in leprosy patients.

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Objectives: To correlate the clinical and high frequency ultrasound imaging features of median and ulnar nerves monthly for six months in leprosy patients

Methodology: Thirty-two (64 median and 64 ulnar nerves) leprosy patients and age and sex matched controls were recruited. Clinical nerve examination and the severity of nerve function impairment (Walker score) followed by high-resolution ultrasound evaluation were done at baseline and monthly for 6 months.

Results: Clinically 19 (29.69 %) ulnar nerves were grade 1 thickened and 24(25.93%) were grade 2 thickened. The mean CSA was 0.118 ± 0.105 cm2 for median nerves and 0.111 ± 0.058 cm2 for ulnar nerves among patients while it was 0.066 ± 0.015cm2 and 0.063 ± 0.014 cm2 for controls. Color Doppler revealed blood flow in 29 (45.3%) median nerves, 34 (53.12%) ulnar nerves. The kappa correlation coefficient (k) of CSA and clinical nerve thickening was 0.52 for the ulnar nerve while k = 0.475 (median nerve) and 0.276 (ulnar nerve) between the CSA and clinical nerve function impairment. k = 0.186 (median nerve) and 0.281(ulnar nerve), between the clinical and the ultrasound neuritis. Follow-up: There was a significant reduction in the Walker score of median nerve (p =0.009), ulnar nerve (p =0.004), median nerve blood flow (p = < 0.001) and ulnar nerve blood flow (p = < 0.001) with duration of treatment.

Limitations: Smaller sample size and shorter follow-up period of study.

Conclusion: The performance of high frequency ultrasound provides an objective and accurate measure of the nerve damage promptly

Keywords: Leprosy, Nerve function impairment, High-frequency ultrasound, Endoneural blood flow, Hansen disease, Median and ulnar nerves.

#0304/ ILCABS876

COMPARATIVE HOST TRANSCRIPTOMICS AS A TOOL TO IDENTIFY CANDIDATE BIOMARKERS FOR IMMUNE REACTIONS IN LEPROSY

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Introduction: Leprosy is no more considered an imprecation as an effective multidrug therapy regimen is available worldwide for its cure. However, its diverse clinical manifestations sometimes involve acute inflammatory reactions. These complications result in irreversible nerve damage, neuritis, and anatomical deformities that emerge either before, during the treatment, or after the completion of treatment. Reversal reaction (Type-I) and erythema nodosum leprosum (Type-II) are the leprosy reactions generally seen in patients with lepromatous and borderline forms of leprosy. At present, there is no accurate diagnostic test available to detect these leprosy reactions.

Objectives: To identify potential biomarkers indicative of Type-I and Type-II leprosy reactions that could help in their early diagnosis.

Material and Methods: Host-transcriptomics investigations have been utilized in this study to decipher a correlation between host-gene expression-based biomarkers and exacerbation of leprosy reactions. We present a comparative analysis of publicly-available host transcriptomics datasets related to leprosy reactions. Individual datasets were analyzed and integration of results was carried out using meta-analysis. Common DEGs were identified using the frequentist and Bayesian ratio association test method.

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Results: We have identified several genes like - ADAMTS5, ADAMTS9, IFITM2, IFITM3, KIRREL, ANK3, DOCK9, and KRT73 to name a few, which can serve as potential biomarkers for Type-II reaction. Similarly, ACP5, APOC1, CCL17, S100B, SLC11A1 among others and may likely serve as biomarkers for Type-I reaction.

Limitations: The number of datasets related to leprosy reactions found after the systematic search is less (n= 4) and may limit the accuracy of identified biomarker genes. This could be countered by including more studies in the data analysis.

Conclusions: We provide a comprehensive list of gene candidates which could be prioritized further in research focusing on immune reactions in leprosy, as they are likely important in understanding its complexities and could be useful in its early identification.

Keywords: Biomarker, Host transcriptomics, Differentially expressed genes, Reversal reaction, Erythema nodosum leprosum

#0305/ ILCABS877

LOOKING AT HISTOPATHOLOGIC PATTERNS IN LEPROSY!

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Introduction: Even though there has been a significant reduction in the worldwide prevalence of leprosy, its incidence has remained invariable over the last two decades enduring as a public health problem. Despite its potential pitfalls, histopathology remains a powerful confirmatory tool and must not be underestimated.

Aim: The aim of the present study was to study the histological patterns in all patients diagnosed with Hansen's disease.

Materials and Methods: This retrospective study included skin biopsies of 158 diagnosed cases of Hansen's disease received over the last one and half years. Hematoxylin and eosin and Fite-Faraco stained sections of all cases were examined. In addition, wherever available the corresponding slit-skin smear and nerve biopsy were also reviewed.

Results: The cases included were classified clinically according to Ridley–Jopling classification into TT, BT, BB, I, BL, and LL. Out of the total 158, 123 were males and 35 were females. The patients included were tuberculoid-82, lepromatous-62, pure neuritic-7, histoid-4, and indeterminate-3. Ninety-six belonged to the 21-50 years, 50 belonged to >50 years and 12 belonged to <20 years age-group. Histopathological parameters that were looked for included the grenz zone, perineural and periappendageal inflammatory infiltrate and granulomas consisting predominantly of lymphocytes, histiocytes and epitheloid cells. Other features that were looked for included signs of vasculitis, and panniculitis. Fite-Faraco stain was positive in 45/158. Histopathologic features varied depending on the clinical classification, lesion duration, presence of the reactional states, and concurrent or past history of medications.

Conclusion: Granulomatous histiocytic inflammation in leprosy can uncommonly be subtle or absent in some patients, highlighting the utility of multiple biopsies and Fite stain in cases lacking classic clinical and histopathological findings. Knowledge of these patterns is important to differentiate them from other causes of infectious granulomatous conditions and for timely management.

Keywords: Hansens, Histopathology, Fite-Faraco, Nerve biopsy, Granuloma

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#0306/ ILCABS880

GENOMIC CHARACTERIZATION OF *M. LEPRAE* DNA GLYCOSYLASE GENE NTH FOR ITS ASSOCIATION WITH ANTI-LEPROSY DRUG RESISTANCE

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Introduction: DNA damage caused by host-derived reactive oxygen/nitrogen species is thought to be vital for the mutagenesis process, underscoring the need for DNA repair enzymes in genomic fidelity maintenance. Endonuclease III (Nth), the formamidopyrimide, and endonuclease VIII (Fpg/Nei) DNA glycosylases are essential components of the bacterial base excision repair process. Mycobacterium leprae has lost both fpg/nei genes during the reductive evolution event and only has the nth gene.

Objective: To characterize the mutation in the nth gene of *M. leprae* strains and explore its correlation with drug-resistance samples through PCR-Sanger sequencing.

Patients/material and methods: DNA was isolated from human skin biopsy samples of suspected leprosy patients and RLEP (a marker of *M. leprae* infection) PCR was done to confirm the presence of *M. leprae*. Then, PCR assays of RLEP positive samples were carried out to amplify the drug resistance determining region of gyrA, folp1, and rpoB genes followed by Sanger sequencing. A total of 95 strains of *M. leprae* were studied for genomic characterization of the nth gene to investigate its association with anti-leprosy drug resistance mutations.

Results: In this study, we found 5 synonymous and 6 nonsynonymous mutations in 8 strains out of the 95 strains analyzed. Interestingly we have also found insertion at position 337 in the drug-resistant sample causing a frameshift and premature stop codons at 385 and 424 positions. The in-silico analysis of 6 nonsynonymous mutations in the nth gene revealed deleterious and neutral effects on the nth (ML2301) protein structure.

Limitations: In this study, the majority of the strains were resistant to Ofloxacin (gyrA). Only two strains were rifampicin-resistant and no MDR samples were present

Conclusion: Our results suggest that the mutation in the nth gene may be a potential marker for the emergence of drug resistance and more studies are required to characterize mutations

Keywords: DNA repair genes; drug resistance; DNA glycosylases

#0307/ ILCABS887

MAKING THE INVISIBLE VISIBLE: THERMAL IMAGING IN LEPROSY PATIENTS

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Background: Early detection and appropriate action i.e., rest, off-loading and self-care are requisites for ulcer healing in leprosy patients. In clinical practice, both area and temperature of the ulcer have been shown to be effective in tracking the healing status of foot ulcers. Hence we applied the revolutionary patent-

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pending Modified Thermal Imaging (MTI) technology; a combination of infrared imaging, barrier film, imaging hardware, and Artificial intelligence (AI) which has been integrated into one device, for the thermal screening of foot ulcers.

Method: This is a longitudinal study of leprosy patients who completed MDT and avail follow-up and foot care services at LEPRA-BPHRC, Hyderabad, India. Thermal Images are being taken on patients who were either having or having lower limb ulcers to find predictive factors for healing including the temperature and area of the isothermal patch of the wound bed and peri-wound area and physical wound bed area and peri-wound skin discoloration.

Results: From January 2022 onwards, 15 people 5 each leprosy patients with ulcers, without ulcers, and healthy volunteers were imaged using MTI. Areas around the ulcers showed clear temperature gradients to warmer temperatures while normal feet showed colder temperatures. One of the patients indicated other areas of the leg where they were experiencing pain. These areas were not visually differentiated since there were no external wounds. But, thermal images indicated these areas with differences in temperature. All the patients are being followed up for subsequent imaging.

Limitation: Small data size and the follow-up data yet to be collected.

Conclusion: MTI allows less invasive and more accurate assessment, which could potentially help in predicting the ulcers much before the obvious clinical signs and symptoms would appear and also provides a more informed prognosis by using image standardization and comparative analysis from a high-resolution thermal imaging device.

Keywords: Plantar Ulcers, Thermal Imaging

#0308/ ILCABS914

ADVANCES IN DIAGNOSIS OF LEPROSY: AN UPDATE INTO MOLECULAR DETECTION OF MYCOBACTERIUM LEPRAE.

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae and it remains a significant global public health problem due to increasing numbers of new leprosy cases. This demands the availability of early and reliable point-of-care (POC) diagnosis of leprosy is essential for timely treatment before nerve damage and to control its transmission.

Objective: The objective of the study was to development of loop-mediated isothermal amplification assay using targeting the RLEP gene sequence uniquely present in Mycobacterium leprae for early detection of leprosy.

Patient's/Material and Methods: In this study, a total of 102 leprosy cases were recruited from out-patient-department of the Institute and slit-skin-smear (SSS) was collected. These 102 leprosy cases comprised with 35-paucibacillary (PB) and 67-multibacillary (MB). All the 35 PB cases were in the category of borderline tuberculoid (BT) leprosy, while 67 MB cases constituted 21 borderline lepromatous (BL) and 46 lepromatous (LL) leprosy cases. All PB cases had 3-4 active patches on the body. DNA was isolated from SSS by using a QIAamp DNA tissue kit. The LAMP assay was performed targeting repetitive and specific RLEP gene sequence uniquely present in *M. leprae*.

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Results: Using slit skin smear aspirates of these 102 leprosy cases, 85.3% (87/102) cases were positive by LAMP assay, while 45.1% (46/102) were positive by AFB-microscopy respectively. The positivity of LAMP assays in PB and MB cases was 77.1% (27/35) and 89.5% (60/67) respectively; while 28.6% (10/35) and 53.7% (36/67) were positive by AFB-microscopy respectively.

Limitation: In this study, the leprosy cases cohort was not systematic; it comprised a less number of PB cases (34.3%) as compared to MB (65.7%) cases.

Conclusion: The LAMP assay is a simple, rapid and accurate diagnostic test for leprosy with highly sensitive and specific. It is applicable in the field especially in endemic areas of leprosy.

Keywords: Diagnosis, Leprosy, LAMP assay, Point of care test

#0309/ ILCABS923

HISTOPATHOLOGICAL STUDY OF TREATED LEPROSY

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Introduction: Presently, the treatment of leprosy follows a fixed duration regardless of clearance of skin lesions. Some patients who complete this recommended duration of multi-drug therapy are left with residual skin lesions which are a great source of concern to the patient. This study was done to describe histological findings in treated patients of leprosy.

Objectives: To assess histological findings in skin lesions of treated leprosy and correlate clinically.

Material & methods: The study was conducted in a tertiary care hospital, Institutional Ethics Committee approval was taken. Consent taken from the patients and skin punch biopsy was done from the existing skin lesions of treated cases of leprosy. This study was done during May 2021- May 2022.

We have taken reference from Dr. Rajiv Joshi's study "Clues to Histopathological diagnosis of Treated Leprosy" and his various findings were taken into consideration.

Results: Histology of treated leprosy show findings can be used as clues in confirming that the persistent skin lesions are histologically inactive.

These findings may be divided into:

Epidermal findings - atrophy of the epidermis with prominent melanin without increase in melanocytes,

Dermis - edema of perivascular dermis with lymphocytes or thickened sclerotic dermis without presence of granuloma

Dermal inflammatory infiltrate - lymphoplasmacytoid infiltrate, foamy histiocytes may be present

Limitations: Inadequate size

Inability to compare the histological findings before starting MB-MDT.

Conclusion: We could conclude that the histopathological findings of treated leprosy can provide information regarding the persistent skin lesions being inactive and therefore non infectious.

Keywords: Histopathology, Treated leprosy

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#0310/ ILCABS955

APPLICATION OF MOLECULAR AND IMMUNOLOGICAL DETECTION TECHNOLOGY FOR LEPROSY

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The diagnosis of paucibacillary (PB) leprosy often possess a diagnostic challenge, especially for pure neuritic and lesser skin lesions with the zero bacillary load, requiring a sensitive and accurate diagnostic tool. We have included 300 clinically diagnosed new leprosy cases (comprising 98 PB cases) and analysed sensitivity and specificity of PB leprosy cases by nested PCR with folP, gyrA, rpoB, RLEP and 16SrRNA and Enzyme-linked Immunospot Assay test (ELISPOT) with MMPII, NDO-BSA and LID-1 antigens by detecting IFN-γ release.

The overall positivity rate of genes tested in 300 clinical specimens were identified as 55% of 16SrRNA, 59% of RLEP, 59.3% of folP, 57.3% of rpoB, 61% of gyrA, while 90% of nested folP, 92.6% of nested rpoB, 95% of nested gyrA and at least one gene positive cases were 285 (95%). For PB specimens, 95% PCR positivity was achieved by three tested genes in nested PCR.

The data obtained from ELISPOT for three antigens were analyzed IFN-γ expression with 600 subjects. Among 98 PB leprosy cases, the sensitivity of MMP II, LID-1 and NDO-BSA was 90%, 87% and 83%, and the specificity was 90%, 91% and 86% respectively. Total number of cases positive for at least one antigen was 90 (91.8%) in PB significantly higher than multibacillary (MB) leprosy (56.7%). The combination of muilt-targets nested PCR and ELISPOT assay provides a specific tool to early clinical laboratory diagnosis of PB leprosy cases. The two assays are complementary to each other and beneficial for screening PB patients.

Keywords: Paucibacillary leprosy, PCR, Nested PCR, ELISPOT assay

#0311/ ILCABS958

THE EXPRESSION OF ENDOCAN AND TNF-α IN LEPROSY

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Introduction: Leprosy is a chronic infectious granulomatous disease caused by either Mycobacterium leprae or Mycobacterium lepromatosis that mainly invades the skin and peripheral nerves. Endothelial cell specific molecule-1 (ESM-1, also called endocan) is a proteoglycan secreted by endothelial cells and modulated by tumor necrosis factor (TNF)-α, interleukin (IL)-1β and interferon (IFN)-γ, which can bind directly to CD11a/CD18 integrin and inhibits the specific binding of intercellular adhesion molecule-1 (ICAM-1) and may be a valuable endothelial and inflammatory biomarker associated with disease severity under various conditions.

Objectives: The purpose of this study was to evaluate the presence and localization of endocan and TNF-α in leprosy lesions and to correlate their expressions with the clinical data of leprosy.

Material and Methods Immunohistochemistry was performed to analyse the expression of ESM-1and TNF-α in skin lesions of leprosy.

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Results: Endocan was mainly expressed in keratinocytes of the epidermis, infiltrating histiocytes and some of the lymphocytes distributed in the dermis, sweat glands, sebaceous glands and infundibulum of hair follicle, as well as endothelial cells of the capillaries in the skin biopsy of patients; the levels of endocan and TNF-α in the skin lesions of patients with leprosy reaction were higher than those of non-reaction patients.

Limitations: The main limitation of the present study is the histopathological evaluation of infiltrating immune cells, which could be improved by using immunohistochemical delineation.

Conclusion: The increased levels of endocan in the skin lesions of patients with leprosy suggest that endocan may be involved in the proinflammatory process, especially during the leprosy reaction and be a predictor of leprosy reaction.

Keywords: Endocan, TNF-α, Immunohistochemistry, Leprosy, Leprosy reaction

#0312/ ILCABS980

FROM BENCH TO BEDSIDE, A STATE-OF-THE-ART SERIES FOR PCR IN DIAGNOSING CUTANEOUS MYCOBACTERIAL INFECTIONS

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Introduction: Cutaneous mycobacterial infections include mycobacterium tuberculosis complex infections, Mycobacterium leprae infection and nontuberculous mycobacteria (NTM) infections, among which Mycobacterium leprae infection is particularly difficult to diagnose at early stage.

Description of the issue In this paper, we specifically analysed the diagnostic process of borderline tuberculoid leprosy in clinical practice, combined with the evolution of granuloma and elimination of pathogens during mycobacterial infections, structural features of the outer membrane in the mycobacterial cell wall, 16S rDNA and the repetitive element RLEP in pathogen's genome and characteristics of DNA in paraffin-embedded tissues to optimize the preferred sample-pre-processing scheme, key matters of nucleic acid extraction, primer design and parameter selection for PCR one by one. We analysed the results based on the mathematical distribution principle (Poisson distribution) in the high-sensitivity PCR process and discussed the strategies for controlling the false-negative and false-positive results using high-sensitivity qualitative PCR for clinical diagnosis: 1) Multi-site collections of clinical samples; 2) Multi-locus design of targets of pathogen gene detection; 3) Multiplex nested design of amplification primers; 4) Multi-duplicated PCR reaction tube-settings for PCR amplification operation.

Conclusion: A state-of-the-art series for PCR in diagnosing cutaneous mycobacterial infections depends on the perfect co-fusion of mycobacterial biophysical characteristics, the dynamical evolution of host granuloma characteristics as well as the mathematical principles of PCR .

Keywords: Mathematical principles, Molecular diagnosis, Mycobacteria granuloma

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#0313/ ILCABS981

THE ORIGIN OF MULTINUCLEATED GIANT CELLS DIFFERENTIATED IN LEPROSY PATHOLOGY

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Introduction: Multinucleate Giant Cell (MGC) can be found in inflammatory and neoplastic dermatosis. It is generally believed that MGC is derived from monocyte-macrophage cell lines with various morphology and heterogeneous functions. The significance of MGC for diagnosis depends on the origin and function in different dermatosis.

Objectives: To explore the origins of MGC in infectious and non-infectious granuloma, neoplasm, according to the function of precursor cells, verify the possible diagnostic significance of MGC in different dermatosis and improve the role of MGC in the pathogenesis.

Patients/**material and methods:** Select 20 samples of infectious granuloma, of which 5 samples of Leprosy, 5 samples of Majocchi's Granuloma, 20 samples of non-infectious granuloma, of which 7 samples of Sarcoidosis, 2 samples of Tophi, 8 samples of Epidermal Cyst Ruptured with Foreign Body Granuloma Reaction, 3 samples of Xanthomas, 20 samples of neoplasm, of which 3 samples of Granulomatous Mycosis Fungoides, 7 samples of Dermatofibroma, 5 samples of Squamous Cell Carcinoma, 5 samples of Giant Cell Tumor of Tendon Sheath. The changes of CD1a, CD64, CD68, CD69, CD40, CD23, CD163, CD206 were detected by immunohistochemistry and qualitatively analysed. The results of markers expressed in MGC which exists in three types dermatosis were statistically analysed.

Results: MGCs in all three groups express CD1a-, CD64+, CD68+, which suggested that MGC may be derived from monocyte-macrophage. CD23 and CD69 have no statistical difference in the three groups. CD40+ MGCs are popular within infectious granulomas, while CD163+ MGCs ae well as CD206+ MGCs within non-infectious granulomas.

Limitations: Further investigations are necessary to understand the mechanism underlying the various CD panels of MGCs towards their distinctive functions and differentiations.

Conclusion: CD40, CD163 and CD206 panels can distinguish infectious granulomas from non-infectious diseases.

Keywords: Multinucleate Giant Cell, MGC, Macrophage, Granuloma, Leprosy

#0314/ ILCABS982

ELEVATED IL-23 IN SKIN PROMOTES IL-23 DRIVED TH17 RESPONSES IN LEPROSY PATIENTS

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Introduction: The role of Th1 and Th2 cells has been well studied in leprosy reactions. Th17 cells, a new pro-inflammatory subset of CD4 T cells, were associated with leprosy pathogenesis, especially in the tuberculoid pole and reactional events.

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Objectives: Although previous studies have reported the participation of IL-23 in leprosy patients in blood, the role of this cytokine in skin have not yet been described for this disease.

However, the role of IL-23R on IL-17-producing cells in leprosy was not well studied. In this study, we investigate the response of IL-23 in leprosy lesions.

Patients/material and methods: Twenty-eight tissue samples were evaluated, including those obtained from control subjects (normal skin, n=5), patients with TT (n=11), and patients with LL (n=12). For histopathological analysis, 5-µm-thick histological section of tissue was conducted with anti-IL-23 antibody. Cellular quantification for immunostaining with the anti-IL-23 antibody was conducted with five randomly selected fields chosen to quantify the immune-expression of IL-23 in keratinocytes, endothelial cells and macrophages.

Results: IL-23 expression was markedly higher in patients compared to that of the normal skin controls. Also, leprosy patients had higher percentage of IL-17A-producing IL-23R+CD4 T cells than healthy donors. IL-23R blocking showed markedly downregulated IL-17A secretion in leprosy patients compared with control group. Furthermore, TGF- b showed markedly induction after IL-23R blocking.

Limitations: Further investigations are necessary to understand the mechanism underlying the increased IL-23R expression on CD4+ T cells, as well as the induced Th17 responses in leprosy patients.

Conclusion: This study establishes that Th17 cells produce IL-17A in an IL-23 dependent manner in skin of leprosy patients and provide more focused treatment strategies for type I or type II reactions."

Keywords: Leprosy, IL-23, Th17 cell

#0315/ ILCABS988

IL-37 PARTICIPATES IN IMMUNE REGULATION OF LEPROSY BY DOWN-REGULATING PRO-INFLAMMATORY CYTOKINES THROUGH THE NF-KB SIGNALING PATHWAY

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Objectives: Leprosy is a chronic infectious disease caused by Mycobacterium leprae (*M. leprae*), annually affecting roughly 200,000 people, which poses a major threat to global public health. Interleukin-37 (IL-37), a novel member of the IL-1 family (IL-1F), is a crucial anti-inflammatory and immunosuppressive cytokine. Recent studies have indicated that IL-37 is involved in the process of leprosy, but the mechanism of IL-37 on leprosy has not been fully elucidated. Therefore, this study was undertaken to evaluate the role of IL-37 in leprosy and further explore its possible mechanisms.

Methods: IL-37 protein levels and mRNA expression in skin lesion, serum, and peripheral blood mononuclear cells (PBMCs) from leprosy patients and healthy controls (HCs) were assayed by immunohistochemistry, real-time polymerase chain reaction (RT-PCR), and enzyme-linked immunosorbent assay (ELISA). RT-PCR was used to detect the effect of *M. leprae* infection on the expression of IL-37. RT-PCR was used to detect the expression of IL-6, IFN-γ and TNF-α in PBMCs and THP1-induced macrophages stimulated by recombinant human (rh) IL-37. The pathway in which IL-37 functions is detected by RT-PCR.

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Results: We found that IL-37 was highly expressed in leprosy patients. *M. leprae* infection may be the cause of the increase of IL-37. IL-37 can obviously alleviate the expression of pro-inflammatory cytokines such as IL-6, TNF-α and IFN-γ in PBMCs of patients with leprosy. IL-37 plays an inhibitory role through the NF-κB pathway in leprosy.

Conclusion: Our results suggest that IL-37 plays an immunosuppressive role in the pathogenesis of leprosy by down-regulating the production of pro-inflammatory cytokines through the NF-κB pathway

Keywords: Interleukin-37 (IL-37), Leprosy, Inflammation, Cytokines, NF-κB

#0316/ ILCABS989

IL-23/IL23R PROMOTE TH1/TH17 CELL DIFFERENTIATION AND AUTOPHAGY AND PYROPTOSIS OF MACROPHAGE IN LEPROSY

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Objectives: Although the understanding of leprosy immune processes were greatly advanced by immunological and genetic studies, the underlying mechanisms of disease pathogenesis have not been completely understood. Epigenetic factors, especially DNA methylation have recently emerged as potential elements in explaining and redefining diseases. The DNA methylation landscape of leprosy has not been reported yet.

Methods: In this study, qPCR, IHC and ELISA assay were performed for detect Th1/17 cell relative cytokines expression in skin lesions of leprosy and PBMC, which were isolated from 6 health individuals, were infected by Mycobacterium leprea. Meanwhile, IL23R-/- KO mice was constructed. Autophagy and pyroptosis related proteins were analysed by Western Blotting in BMDMs and THP-1 cells, which were isolated from WT and IL23R-/- mouse. The percentage of Th1, Th2 and Th17 cells in CD4+Tcells were analysed by flow cytometry in mice.

Results: Multiomics study showed that IL23R plays a key role in the pathogenesis of leprosy based on DNA methylation, Bulk-RNA sequencing and genome SNP combined analysis. We found that the expression of IL-23/IL23R were significantly increased in skin lesions of leprosy. The bactericidal ability of macrophages were significantly inhibited and autophagy and pyroptosis related proteins (NLRP3, GSDMD, GSDME, Caspase-1, 3, 4, 5, 11, LC3II, ATG5, ATG16L1) were significantly downregulated in IL23R-/- mice. Meanwhile, the differentiation of Th1 and Th17 cells were also repressed in IL23R-/- mice. In human THP-1 cells, the inhibition of NLRP3/Caspase-1/GSDMD-pyroptosis and autophagy were validated after IL23R was knock out.

Conclusion: Taken together, IL-23/IL23R promote pyroptosis and autophagy of macrophage and the differentiation of Th1/17 cells, which leading to the decrease of IL17A and IFN-secretion, subsequently enhance the bactericidal ability of host immune system. The knock out of IL23R attenuate the bactericidal ability of host.

Keywords: IL-23/IL23R, Leprosy, Th1/17 cell, Macrophage

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#0317/ ILCABS994

LEPROSY: A MODEL TO STUDY INTERACTION BETWEEN INTRACELLULAR INFECTIONS AND HOST IMMUNE RESPONSES

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Leprosy is an ideal disease model to study interaction between intracellular infections and host immune responses due to the spectral clinical manifestations and strong genetic predisposition. Using large scale and multi-omics approaches, such as genome wide association study, exome wide association study and transcriptomics study, we systemically revealed the genetic landscape of leprosy, discovering 32 susceptibility genes associated with the disease and related pathways involved in the development of leprosy, most of which were related to innate or adaptive immune responses. The genetic landscape of leprosy depicted the genetic defects in genes involved in skin barrier function, the recognition and killing of bacteria in innate immune cells and the T cell effector responses, clarified the susceptibility of patients to Mycobacterium leprae, demonstrating the complexity of leprosy pathogenesis. Further functional investigations confirmed some inherited variants contributed to the defects in the responses to mycobacteria infection, such as the mutation E54K in pattern recognition receptor NOD2 attributed to the inappropriate response to its ligand muramyl dipeptide and mutation G149R in IL23R decreased the immune defense ability of host by affecting the responsiveness of Th17 cells to mycobacteria infection. Our findings systemically demonstrated the contributions of host genetic factors to the variability in susceptibility to pathogens between individuals, providing appropriate insight for understanding the interaction between intracellular infections and host immune responses.

Keywords: Leprosy, Genetic susceptibility, Infection, Immunity

#0318/ ILCABS1017

HLA CLASS II-RESTRICTED CD8+ T CELLS CONTRIBUTE TO THE PROMISCUOUS IMMUNE RESPONSE IN DAPSONE HYPERSENSITIVE PATIENTS

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HLA-B*13:01 is associated with dapsone (DDS)-induced hypersensitivity and it has been shown that CD4+ and CD8+ T cells are activated by DDS and its nitroso metabolite (DDS-NO). However, there is a need to define the importance of the HLA association in the disease pathogenesis. Thus, DDS and DDS-NO-specific CD8+ T cell clones (TCC) were generated from hypersensitive patients expressing HLA-B*13:01 and assessed for phenotype and function, HLA-allele restriction, and killing of target cells. CD8+ TCC were stimulated to proliferate and secrete effector molecules when exposed to DDS and/or DDS-NO. DDS-responsive and several DDS-NO-responsive TCC expressing a variety of TCR sequences displayed HLA class-I-restriction, with the drug(metabolite) interacting with multiple HLA-B alleles. However, activation of certain DDS-NO-responsive CD8+ TCC was inhibited with HLA-class-II block, with DDS-NO binding to HLA-DQB1*05:01. These TCC were of different origin, but expressed TCRs displaying the same amino acid sequences. They were activated via a hapten pathway, displayed a CD45RO, CD28, PD-1 and CTLA-4 surface molecules, secreted the same panel of effector molecules as HLA class-I-restricted TCC, but displayed a lower capacity to lyse target cells. To conclude, DDS and DDS-NO interact with a number of HLA

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molecules to activate CD8+ TCC, with HLA class-II-restricted CD8+ TCC that display hybrid CD4/CD8 features also contributing to the promiscuous immune response that develops in patients.

Keywords: Dapsone; hypersensitivity syndrome; HLA-B*13:01; T cell

#0319/ ILCABS1018

MULTI-OMICS REVEALS THAT TAP2 DRIVES HLA-B*13:01-LINKED DAPSONE HYPERSENSITIVITY SYNDROME TOLERANCE AND REACTIVITY

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Background: Dapsone hypersensitivity syndrome (DHS) is restricted to human leukocyte antigen HLA-B*13:01. However, the positive predictive value for HLA-B*13:01 is only 7.8%, indicating that other factors may be involved in the development of DHS.

Methods: A genome-wide association study, single cell T cell receptor (TCR) sequencing, and genome-wide DNA methylation profile analysis were conducted in a Chinese population, comparing DHS patients with dapsone-tolerant controls both carrying HLA-B*13:01 and taking dapsone. The qPCR was performed to verify the expression of candidate genes, including JRK helix-turn-helix protein (JRK), prostate stem cell antigen (PSCA), transporter 1 associated with antigen presentation (TAP1), and TAP2. Functional experiments, including co-cultures and impaired TAP function assays, were performed to compare the function of antigen-presenting cells (APCs) between DHS and dapsone-tolerant controls and to elucidate the roles of TAP1 and TAP2 in the activation of dapsone-specific T cells.

Results: No non-HLA SNPs associated with DHS patients were identified on a genome-wide level, and TCR sequencing showed no shared specific clonotypes in DHS patients. DHS patients showed a hypomethylation status in the body of TAP2 and higher mRNA level of TAP1 and TAP2 compared to dapsone-tolerant controls. The release of IFN-γ produced by dapsone-specific T cells was significantly higher when co-cultured with EBV-B cells from DHS patients compared to those from dapsone-tolerant controls. And the release of IFN-γ produced by dapsone-specific T cells was inhibited when TAP function of APCs was impaired.

Conclusion: The present study illustrated the epigenetic regulation of TAP1 and TAP2 affecting the function of APCs as a critical coefficient factor in mediating the development of DHS.

Keywords: Antigen presentation, Drug hypersensitivity, T cells

#0320/ ILCABS1019

THE MECHANISMS INVOLVED IN MAIT CELLS REGULATE INFECTION AND BACTERIAL LOADS OF MYCOBACTERIUM LEPRAE

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Mucosal-associated invariant T (MAIT) cells are an invariant innate T cell subset, which reacts to most bacteria through T cell receptor (TCR)-mediated recognition of metabolites derived from the vitamin B2 biosynthetic pathway. They have been reported to involve in a broad range of infectious diseases, such as

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Mycobacterium tuberculosis, Pseudomonas aeruginosa and Vibrio cholerae caused infections, by driving cytokine release and granzyme B production in a TCR-independent manner. Leprosy, a disease caused by the intracellular parasite Mycobacterium leprae, can be divided into multibacillary (MB) and paucibacillary (PB) on the basis of bacterial loads. Different kinds of innate and adaptive immune cells have been reported to modify the development of leprosy, while roles of MAIT cells in the process of infection and regulation of bacterial loads still remain unclear. Here, MAIT cell frequencies have been found to be decreased in the blood of patients, and the number of MAIT cells were further reduced in the patients with MB compared to the PB, indicating frequency of MAIT cells was negatively correlated with bacterial load of *M. leprae*. Moreover, MAIT cells from MB patients secreted less anti-mycobacterial cytokine (IFN-γ) and cytotoxic factors (perforin and granzyme B) than patients with PB and healthy controls. These results suggest that MAIT cells are involved in the process of *M. leprae* infection and regulation of bacterial loads. The study will further explain the pathogenesis and provide new theoretical basis for disease prevention of leprosy.

Keywords: MAIT cells, Mycobacterium leprae, Infection, Bacterial loads

#0321/ ILCABS1020

LOW EXPRESSION OF DNMT3B REGULATING THE ACTIVATION OF INFLAMMASOME SIGNALING AXIS TO INDUCE INFLAMMATION IN LEPROSY GRANULOMAS

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Granuloma formation is an essential pathological marker of hosts to defense mycobacterium leprae infection. IL-1β was the fundamental gene responsible for the antibacterial response of leprosy granulomas. However, the immunological mechanisms of IL-1β production and granuloma formation remains to be elucidated. In our study, immunohistochemistry results revealed that both IL-1β proteins and its upstream regulatory inflammasome including AIM2, NLRP3 are highly expressed in leprosy granulomas. A significant enrichment of inflammasome signal axis in the skin lesions of leprosy patients was also presented using association analysis between genome-wide DNA methylation and mRNA expression profile. Further studies found that DNA methyltransferase DNMT3B was decreased in leprosy patients, and its knockout promoted the expression of inflammasome and secretion of IL-1β. This work described DNMT3B acted as DNA methyltransferase of NLRP3 inflammasome to regulate granuloma inflammation, which proposed DNMT3B as a target for leprosy prevention and control will provide a cumulative basis for accurate leprosy prevention and provide a new idea for other infectious diseases research.

Keywords: Inflammasome, Leprosy granulomas, DNA methyltransferase, DNMT3B

#0322/ ILCABS1021

THE PLEIOTROPIC EFFECT OF TNFSF15 IN PRIMARY BILIARY CIRRHOSIS, CROHN'S DISEASE AND LEPROSY

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Multiple associations have been reported within the 9q32 locus, suggesting a pleiotropic effect of risk variants in diseases such as Crohn's disease (CD), primary biliary cirrhosis (PBC) and leprosy. However, it is still

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unclear which gene it affects and whether it's driven by the same or different causal variants. We performed a systematic fine-mapping analysis of the locus in three large disease datasets of leprosy (9,619 cases and 12,896 controls of Chinese), CD (1,576 cases and 3,013 controls of Koreans) and PBC (1,594 cases and 1,529 controls of Japanese). Our study revealed two independent genetic associations at rs6478108/rs6478109 (r2=1) and rs4979462 for CD and leprosy, but only one association at rs4979462 in PBC. These associations show an opposite genetic effect between leprosy and CD/PBC. Strong eQTL effect of rs6478109 on TNFSF15 expression in whole blood and isolated monocytes suggests that high expression of TNFSF15 could be a risk factor for CD and PBC, but protective for leprosy. Cell/tissue-specific regulatory function was also observed at the locus, suggesting a diverse functional role for TNFSF15 in gastrointestinal cells, epithelial/connective tissues and immune regulation, thereby providing protective effect against infectious diseases such as leprosy, but increasing the risk for immune and inflammatory diseases.

Keywords: Leprosy, Tnfsf15, Crohn's disease, Primary biliary cirrhosis

#0323/ ILCABS1024

THE IMMUNE-SUPPRESSIVE LANDSCAPE IN LEPROMATOUS LEPROSY REVEALED BY SINGLE-CELL RNA SEQUENCING

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Lepromatous leprosy (L-LEP), caused by the massive proliferation of Mycobacterium leprae primarily in macrophages, is an ideal disease model for investigating the molecular mechanism of intracellular bacteria evading or modulating host immune response. Here, we performed single-cell RNA sequencing of both skin biopsies and peripheral blood mononuclear cells (PBMCs) of L-LEP patients and healthy controls. In L-LEP lesions, we revealed remarkable upregulation of APOE expression that showed a negative correlation with the major histocompatibility complex II gene HLA-DQB2 and MIF, which encodes a pro-inflammatory and anti-microbial cytokine, in the subset of macrophages exhibiting a high expression level of LIPA. The exhaustion of CD8+ T cells featured by the high expression of TIGIT and LAG3 in L-LEP lesions was demonstrated. Moreover, remarkable enhancement of inhibitory immune receptors mediated crosstalk between skin immune cells was observed in L-LEP lesions. For PBMCs, a high expression level of APOE in the HLA-DRhighFBP1high monocyte subset and the expansion of regulatory T cells were found to be associated with L-LEP. These findings revealed the primary suppressive landscape in the L-LEP patients, providing potential targets for the intervention of intracellular bacteria caused persistent infections.

Keywords: Lepromatous leprosy, Single-cell RNA sequencing, Immunosuppression, APOE, TIGIT, LAG3

#0324/ ILCABS1033

EXPERIMENTAL STUDY ON CONSTRUCTING TISSUE ENGINEERED WHOLE LAYER SKIN TISSUE WITH ADIPOSE-DERIVED STEM CELLS

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Objective: To explore the method for building tissue engineered whole layer skin tissue with adult adipose-derived stem cells as seeding cells and provide experimental basis for it's clinical application on repairing full layer skin defect.

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Methods: Epidermal cells and fibroblasts isolated from human foreskin were cultured and identified in vitro. The fibroblasts were inoculated firstly into bovine collagen gel in order to building dermal substitute. The epidermal cells were inoculated secondly on the dermal substitute to build epidermis and dermis composite skin by gas-liquid interface culture. Adipose-derived stem cells were isolated, cultured and identified from 10 ml liposuction at adult abdomen by Body-jet System. The adipose-derived stem cells as seed cells were inoculated into bovine collagen gel as scaffold. They were induced and differentiated into adipose tissue by continuous cultivation. The composite skin was assembled with the adipose tissue into tissue engineered whole layer skin tissue according to normal skin structure order.

Results: The dermal substitute built by inoculating fibroblasts into bovine collagen gel was analogous to dermis. The composite skin could be constructed by inoculating epidermal cells on the dermal substitut with gas-liquid interface culture. ADSCs could be isolated, from adipose tissue and possess multidirectional differentiation potential. The adipose tissue could be constructed successfully with ADSCs and bovine collagen gel as scaffold in vitro. The tissue engineered whole layer skin tissue could be built by assembling with the adipose tissue and composite skin including epidermis and dermis according to normal skin structure order.

Conclusions: The tissue engineered whole layer skin tissue could be constructed successfully with a variety of cells as seed cells, such as epidermal cells, fibroblasts and adipose tissue-derived stem cells, and bovine collagen gel as scaffold.

Keywords: Adipose-derived stem cells, Epidermal cells, Fibroblasts, Construction, Tissue engineered whole layer skin tissue

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#0325/ ILCABS1037

RESEARCH ON THE MECHANISM OF LANGERHANS GIANT CELL AGAINST *M. LEPRAE*

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Granulomatous diseases caused by mycobacterial infections have are a serious global health concern. A hallmark of mycobacteria-induced granulomas is the Langhans multinucleated giant cell (LGC), yet there is limited knowledge about their mechanism of formation and role in the host antimicrobial response. In this study, we induced murine LGC-like cells in vitro to investigate the mechanism by which they are formed and their response pattern against *M. leprae* infection. We provide direct evidence supporting that cell fusion is the main and necessary way of LGC-like cells differentiation from specific macrophage population, which could be in different phases of cell cycle G1 and G2M phase. The formation of murine LGC-like cells was mediated by some molecules such as Ocstamp. With the purified LGC-like cells, we established the potential response pattern of LGC-like cells in the anti-*M. leprae* infection. Enhanced phagocytic capacity with a maintaining ability to kill the bacteria, phagosome-lysosome fusion, NO production, immunoregulator TGF-β secretion, as well as pyroptosis were among this pattern. The study is a step towards a deeper understanding of how LGCs are formed and its ability to control *M. leprae* infection.

Keywords: Granulomatous diseases, Langerhans Giant Cell, Formation, *M. leprae*

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#0326/ ILCABS1064

A CLINICO EPIDEMIOLOGICAL STUDY OF HISTOPATHOLOGICAL OF SPECTRUM OF HANSEN'S DISEASE IN INDIGENOUS TRIBES OF SOUTH GUJARAT

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Introduction: Hansen's disease is a chronic infectious disease caused by Mycobacterium leprae is a serious public health concern because of associated case load, morbidity and stigma attached to it. From 13.3% in 2009, the proportion of new leprosy patients belonging to the indigenous people has increased to an alarming 18.8% in 2017. In Gujarat, statistical figures from Gujarat suggest that 64.8% of leprosy patients in the state belong to scheduled tribes, while the proportion of scheduled tribe population in the state is a mere 14.8%.

Objectives: 1) Diagnosis and confirmation of Hansen's disease using skin biopsy. 2) Identification of histopathological spectrum of type of Hansen's disease in skin biopsies and 3) identification of hot spots of Hansen's disease in South Gujarat.

Methods: Retrospective data analysis of skin biopsies of 211 cases of Hansen's disease registered in the clinic during the period 2018–2022.

Results: There is higher prevalence of Hansen's disease in Male patients (58%) in age groups of 21 to 40 (52% of cases), With 75% cases in Lepromatous Pole with high bacillary load. The youngest patient was of age 8 years and oldest patient was of age 79 years. PR per 10,000 was found comparatively higher in Tapi District.

Limitations: Only cases pertaining to 2 districts were included. The data regarding grading of Deformity was not available.

Conclusion: Analysis showed that, there are tribal districts in south Gujarat have a higher burden of Hansen's disease as compared to the all other districts indicating imminent need of focussed efforts, for the effective control and elimination of Hansen's disease from India.

Keywords: Hansen's Disease, Leprosy, Histopathology, Gujarat, Indeginous tribes

#0327/ ILCABS1083

LEPROMATOUS LEPROSY MASQUERADING AS ANETODERMA-A CASE SERIES

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Introduction: Anetoderma refers to a circumscribed area of slack skin associated with a loss of dermal substance on palpation and a loss of elastic tissue on histological examination. Anetoderma is an elastolytic disorder characterized by localized areas of flaccid skin, which may be depressed, macular, or popular. Leprosy is one of the causes of secondary anetoderma, but it is not commonly reported, especially in multibacillary leprosy.

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Objectives: To evaluate clinically and histopathologically the presentation of anetoderma in lepromatous leprosy patients.

Materials and methods: This study was a prospective case series study conducted after obtaining informed consent of the patients who were clinically diagnosed as Hansen`s disease. All patients were examined by through history taking, clinical examination and were confirmed by histopathology.

Results: The study included a total of 5 patients, out of which 3 were male and 2 were female. The mean age of the patients was 39 years. Two patients presented with generalized anetoderma and three with localized presentation. Two patients presented with erythema nodosum leprosum. Clinically the patients presented with multiple well-defined round to oval atrophic plaques with decreased sensations. On an average, slit skin smear was 3+. Most of the patients on histopathology showed foamy macrophages with surrounding lymphocytes and plasma cells. No evidence of granulomas and loss of dermal elastic tissue.

Limitations: Short sample size.

Conclusion: Leprosy presents with varied morphology, so people from endemic areas should be screened for leprosy even on a slightest of suspicion. As Anetoderma is a rare benign entity with poorly defined pathogenesis and numerous clinical associations, which necessitates a careful clinical and histopathological evaluation for all newly diagnosed patients.

#0328/ ILCABS1084

DERMOSCOPY IN LEPROSY WITH CLINICOPATHOLOGICAL CORRELATION IN DIFFERENT SPECTRUM OF LEPROSY

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Background: Leprosy is a chronic granulomatous infection with varied clinical presentation. The multitudinous clinical presentations of leprosy have always posed a diagnostic dilemma to dermatologists. The most challenging part is not the diagnosis of leprosy but the categorization of a patient's clinical form, owing to such variable presentations. Dermatoscopy being a noninvasive, bedside investigation is a valuable tool in clinical dermatology for diagnosis and monitoring of skin diseases.

Objectives: To study the dermoscopic features of all types of leprosy and correlate them with clinical and histopathological features.

Materials and methods: This was a prospective observational study which included all the patients of leprosy attending the DVL OPD over 6 months period (March 2022 to August 2022) after obtaining informed consent.

Diagnosis was confirmed by slit-skin smear and skin biopsy. Based on Ridley-Jopling classification, patients were categorized into different spectrum of the disease. Dermoscopy was performed by using DermliteDL4 attached to a smart phone and pictures were clicked and assessed.

Results: A total of 20 patients were included in the study. 12 patients were male and 8 were female. Out of 20 patients, 3 were tuberculoid leprosy, 5 were borderline tuberculoid (2 with Type-1 reaction), 6 were borderline lepromatous, 6 were lepromatous leprosy (4 with Erythema nodosum leprosum). On dermoscopy, yellow-orange areas with broken pigment network and linear branching vessels seen in tuberculoid spectrum. Broken pigment network with decreased hair follicles and white characteristic scaling over the dry xerotic skin were seen in lepromatous spectrum.Additionally

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Type 1 reaction had violaceous to erythematous structure less areas, follicular plugging and scale.

Type 2 reaction showed prominent erythema and telangiectasias.

Limitations: Small sample size.Followup during and after treatment was not done.

Conclusion: Dermoscopy has emerged as a novel noninvasive modality for the rapid diagnosis of clinically confusing dermatoses, particularly granulomatous dermatoses. It could aid in the quick diagnosis of leprosy and should be used as a tool to complement other invasive investigations. Especially in the case of a clinically doubtful type 1 reaction, dermascopy can be handy and histopathology confirmation requires several days.

Keywords: Dermoscopy, Leprosy

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THERAPEUTICS

#0329/ ILCABS1

THE SIGNIFICANCE OF MACROPHAGE COUNT IN TOPICAL ADMSC-CM APPLICATION FOR CHRONIC PLANTAR ULCER OF LEPROSY: A RANDOMIZED CONTROLLED TRIAL

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Introduction: The mosaic of wound healing is cascaded by the unique interaction of several cells, growth factors, and cytokines. Naturally, the macrophage is considered a key regulator of the wound process to ensure proper healing. Growth factors and cytokines can be found in the secretome of adipose mesenchymal stem cell-conditioned medium (ADMSC-CM) in the hope of favoring the phenotype of macrophages with the suitable stages of chronic wound healing evading prolonged inflammatory phase, including in chronic plantar ulcer of leprosy (CPUL).

Objective: To compare the macrophage count between topical ADMSC-CM group and farmazertin gauze dressing (FGD) only group on the healing of CPUL.

Patients/Material and methods: A randomized controlled trial was conducted comparing topical ADMSC-CM (n = 16) and FGD (n = 16) applied every three days for up to eight weeks. Ulcer size, adverse reactions, and possible complications were monitored weekly. Macrophage count was evaluated pre- and post-intervention through histopathological examination obtained from ulcer area and tissue and compared between groups.

Results: The healing percentage increased each week in both groups. Significant statistical differences (p value < 0.05) between groups were observed from week 2 and 3 onwards for ulcer mean size and depth reduction, respectively. Mean macrophage count ± SD showed significant statistical difference (11.25 ± 3.64 vs 6.19 ± 4.32; p value 0.001). No adverse reactions or complications were noted.

Limitations: We did not perform off-loading (reduction or removal of the load on the legs through assistive devices) on the subjects.

Conclusion: Topical ADMSC-CM is a potential therapeutic agent for targeting and correcting cellular and molecular causes of prolonged inflammation in a chronic wound, including CPUL, through the possible promotion of a suitable macrophage microenvironment leading to a significant increase in macrophage count to return to the healing states.

Keywords: ADMSC-CM, Chronic plantar ulcer of leprosy, CPUL, Leprosy, Tropical disease

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#0330/ ILCABS17

ACTION-RESEARCH ON PREVENTIVE MULTIPLE DRUG THERAPY AMONG CONTACTS OF MULTIBACILLARY LEPROSY CASES IN MOBA HEALTH ZONE, THE DEMOCRATIC REPUBLIC OF THE CONGO, 2016-2021

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Moba Health Zone in the DRC is one of the areas in the country that has not reached the threshold for eliminating leprosy as a public health problem at the end of 2010. It has therefore been targeted for a research-action project whose general objective was to "Accelerate the achievement of leprosy elimination as a public health problem".

The action research methods consisted in the implementation of:

• Leprosy Elimination Monitoring (LEM) exercises (2011 and 2015)

• Capacity building of health personnel (2011 and 2015)

• Recruitment of MB leprosy cases and enumeration of their household contacts in the most endemic health areas (7 health centres) (2015-2016),

• Administration of a MB MDT blister-pack to non-sick and consenting household contacts (2016-2017)

• Five-year follow-up of household contacts (2016-2021)

Intra-domiciliary (household) contacts who did not consent and/or did not receive the MB MDT pack for prevention for various reasons were considered as controls.

The results after five years of follow-up confirm the preventive efficacy of a MB MDT blister-pack. Indeed, out of 925 contacts who received a MB MDT blister-pack and were followed up for five years, there was only one new case of leprosy, i.e., a detection rate of 2.16 per 10,000 person-years. In the control group of 207 people followed up to the fifth year, four new cases of leprosy were diagnosed, giving a detection rate of 38.65 per 10,000 person-years.

Considering these results, administration of one MB MDT pack for prevention of leprosy to household contacts of MB leprosy cases could be recommended in areas and health zones that are hyper-endemic for leprosy, particularly in the DRC, to accelerate the elimination of leprosy.

Keywords: Leprosy, Preventive multiple drug therapy, The Democratic Republic of the Congo, Chemoprophylaxis

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#0331/ ILCABS20

SUCCESSFUL CLOSURE OF NATIONAL LEPROSY CONTROL CENTER

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A small town in rural district of Karnataka, then famous for its high leprosy cases. I joined this institute as a young Medical Officer in 1985. In the year 1986, MDRP to treat leprosy patients in rural areas of Karnataka was inaugurated by the Government.

During my tenure, a total of 1320 active cases of leprosy were identified from existing 2800 cases, and grouped into 220 MB and 1100 PB cases.

1) Preparatory phase 6 months – include selection of active cases, necessary investigations, training of staff, and preparation of route map and MDRT points. 2) Attack phase 36 months – intensive phase of 14 days, daily supervised dose. Pulse phase, visiting MDRT points once in 28 days, and giving the 1st day supervised dose, with 28 days domiciliary dose, and cycle was repeated after 28 days. 3) Consolidation phase 12 months – completion of 24 pulses or extra pulses for all patients, especially for late registered patients. 4) Maintenance phase 5 years – repeated surveillance of all villages for new case detection.

NLCC covered 1013351 populations, 3 talukas. 220 MB cases completed 14 days initial intensive therapy, 214 cases completed 24 pulses of MDT, and 6 cases took 30 pulses of MDT, and then declared RFT. Out of 1100 PB cases, 1092 cases completed 6 pulses, and 8 cases were switched to MB dose of MDT.

4 MB cases developed pain in abdomen, after completion of 3rd dose of MDT, the intensity of pain increased, and patients died.

MB cases developed Clofazimine induced pigmentation and dryness. 2 MB patients complained, that breast milk turning brown and curd like.

Leprosy awareness Programme helped patients come forward for treatment.

The NLCC was closed in the month of March 2009.

MDRT was successful and brought down PR.

Keywords: Leprosy, MDRP, Supervised dose, Domiciliary, RFT

#0332/ ILCABS34

AUTOLOGOUS PRP - A TREATMENT MODALITY OF NEUROPATHIC ULCERS IN LEPROSY PATIENTS- PILOT STUDY

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Ulcer formation is one of the significant sequelae of leprosy due to peripheral neuropathy. Recent studies have emphasised on the effectiveness of Platelet-rich plasma (PRP) in the management of chronic non healing ulcers. PRP contains activated autologous growth factors, chemokines and cytokines, which help to promote wound healing.

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Objectives: To assess the therapeutic effect, safety and cost-effectiveness of using autologous Platelet Rich Plasma (PRP) in treatment of ulcers in leprosy patients.

Patients/ Material and methods: Leprosy patients (on treatment as well as RFT patients), with Grade I & II non-healing chronic trophic ulcers (according to Wagner's ulcer classification) attending leprosy clinic from July 2020 to May 2022 in Department of Dermatology, venereology and leprosy, Govt. Medical College, Amritsar were enrolled in the study. Autologous PRP prepared was injected subcutaneously around ulcer margin after callus debridement. An average of four sessions of the procedure were done at interval of 1 weeks (0,1,2,3 weeks) and follow up of further 2 weeks at weekly intervals was done. The patient's response towards therapy was evaluated by percentage of reduction in volume of ulcer and photographic evaluation done on weekly basis for 6 weeks in total.

Results: 10 patients were enrolled, out of which 8 satisfied the inclusion criteria. 6 out of 8 showed 98% reduction in ulcer volume, 1 had 95% reduction while the other showed 92% reduction of ulcer volume in period of 6 weeks. No side effects were observed during this period. Treatment has shown to be cost effective in term of equipment requirements, follow up and treatment period.

Conclusion: In our study, autologous PRP has proven to be a safe and promising intervention in the treatment of chronic non-healing ulcers with no observed side effects. Treatment however requires a trained staff and aseptic PRP preparation.

Keywords: Autologous Platelet Rich Plasma, Chronic non-healing ulcers, Peripheral neuropathy

#0333/ ILCABS52

FIXED DURATION THERAPY/MULTI DRUG THERAPY: POLICY OF STOPPING MULTI DRUG THERAPY AT FIXED PERIOD WITHOUT OBJECTIVE EVALUATION IS APPROPRIATE? OR SHOULD WE CONSIDER EXTENDED MDT ESPECIALLY FOR MB CASES?

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Introduction: Multi Drug Therapy (MDT) is the main weapon against leprosy since its inception in 1981. India achieved the level of elimination (<1 case/10,000) on 31 December 2005.The prevalence rate of leprosy is 0.4/10,000 population. Few studies showed that despite 2 years of regular therapy, 10% of the patients continue to harbor viable persisters.

Aims and objectives: To study the profile of RFT cases in leprosy treated with FD-MDT, who required extended MDT, including details of previous treatment taken, duration between completion of FD -MDT and clinical presentation, Acid Fast Bacilli (AFB) status, histopathology and type of leprosy at the time of presentation.

Materials and methods: A prospective study of 42 RFT (Released from treatment) cases with signs and symptoms of activity were recruited in Department of Skin and V.D. tertiary care hospital between May 2007-November 2008.All cases were diagnosed clinically and investigated for AFB smear, histopathology and Fite Faraco staining.

Results: All the 42 cases, which required extended MDT, were from age group 10 to 65 years, majority between 31-40 years. Majority of the patients were male (80%). Majority (71.4%) had taken previous Multi-

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Bacillary (MB) treatment for 1 year. Eighteen (42.85%) of cases came within one year, 17(40.47%) between one- two years and 7(16.66%) cases after two years of stopping FD-MDT. AFB smear was positive in 36.84% of cases. Majority of previously diagnosed MB cases presented as BT/TT in histopathology. Family history was positive in 2 cases.

Limitations: Test for resistance was not carried out due to unavailability. Leprosy vaccine was given in 5 cases and only 2 patients were given ROM with MDT.

Conclusion: FD-MDT works in majority of cases, but may be inadequate in small number of highly bacilliferous cases. Thus there is need to search for reliable prognostic markers for therapeutic purposes.

Keywords: Leprosy, Multi Drug Therapy, Histopathological examination, RFT cases

#0334/ ILCABS174

HEMATOLOGICAL ADVERSE EFFECTS OF DAPSONE

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Introduction: Dapsone forms the backbone of Multi-drug therapy in leprosy and many other dermatological disorders. Hemolysis is its common side effect which often necessitates drug stoppage. Currently wide variation in data of hemolysis with dapsone exists in literature ranging from 24.7% to 83% and none of the studies point towards the timing of onset of hemolysis/ timing of maximal hemolysis which is important in therapeutic decision making regarding continuing or stopping the drug. This study aimed to answer such unanswered questions.

Objectives: Primary: To estimate the fall in Hb levels after administering MDT for 3 months in patients with Leprosy

Secondary: To determine factors associated with Hb change – Age, G6PD status, Pole of leprosy, Duration of MDT taken (if any).

Materials and Methods: All freshly diagnosed cases of Hansen's disease were studied for 3 months. At baseline, demographic data (Age, sex), Skin biopsy, Slit skin smear and G6PD was taken.

Hemoglobin (Hb), SGOT, SGPT, Serum bilirubin, LDH, reticulocyte count, Peripheral blood smear along with clinical photography was done at baseline, 1, 2 and 3 months.

Results: Out of the 48 patients: Mean Hb (g/dL) decreased from 13.37 at baseline to minimum of 12.08 at 2 Months, and then increased to 12.34 at 3 months. In 42 patients (87.5%) with fall in Hb, 13 (27.1%) had severe (fall >20%), 17 (35.4%) had moderate (fall 10-20%), 12 (25%) had mild fall (fall < 10%) and in 6 (12.5%) there was no hemolysis. Reticulocyte count, LDH, SGOT and SGPT were significantly associated with hemolysis. Severe hemolysis occurred more frequently in the lepromatous spectrum.

Limitations: A study with higher sample size and longer follow up would have yielded more statistically significant results.

Summary and Conclusion: Dapsone causes maximal fall of hemoglobin by 1.29 g/dl at two months following which it increases.

Keywords: Dapsone, Hemolysis, Hemoglobin, Multidrug therapy, Hansen's disease, Leprosy

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#0335/ ILCABS233

CONTRIBUTION OF THE MURINE MODEL OF LEPROSY TO THE USE OF BEDAQUILINE: MINIMAL EFFECTIVE DOSE IN AN IMMUNOCOMPROMISED MOUSE MODEL

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The bedaquiline (BDQ), by targeting the electron transport chain and having a long half-life, is a good candidate to simplify leprosy treatment which remains long and complex to observe for patients.

Our objectives were to determine the minimal effective dose (MED) of BDQ and evaluate the impact of adding clofazimine (CFZ) to BDQ in an immunocompromised murine model of leprosy.

Material and methods: To determine the MED of BDQ, 100 four-week-old female nude mice were inoculated in the footpads with 5.103 bacilli of *M. leprae* strain THAI53. One day post-infection, mice were randomly allocated into: 1 untreated group, 5 groups of BDQ (0.10 to 25 mg/kg), 3 groups of CFZ 20mg/kg alone or with BDQ 0.10 or 0.33 mg/kg, and 1 group of rifampicin (RIF) 10mg/kg.

Treatment was given daily (5 days a week) for 24 weeks.

Results: All the footpads became negative with BDQ at 3.3mg/kg. The addition of BDQ improved slightly the activity of CFZ alone.

Conclusion: We found that the minimal effective dose of BDQ against *M. leprae* was 3.3 mg/kg in mice and that the addition of BDQ to CFZ may improve the activity of CFZ.

Keywords: Leprosy, Treatment, Bedaquiline, Clofazimine

#0336/ ILCABS267

EFFICACY AND SAFETY OF PERINEURAL PLATELET-RICH PLASMA INJECTION THERAPY IN PERIPHERAL NEUROPATHY IN LEPROSY

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Background: Peripheral neuropathy results in loss of sensory and motor function leading to permanent disability in leprosy . Growth factors rich platelet-rich plasma (PRP) can promote nerve regenaration. The effect of PRP injection in leprosy peripheral neuropathy has rarely been reported in literature.

Aim: and objective: To assess the efficacy and safety of PRP perineural injections in peripheral neuropathy in leprosy.

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Materials and methods: A comparative interventional study was conducted among 40 patients with leprosy peripheral neuropathy. 20 patients were randomly allocated in two groups: group 1 receiving PRP and group 2 receiving platelet-poor plasma as placebo. In Perineural injection therapy, a series of injections containing prp was placed underneath the skin near superficial nerves and near ulnar nerve found by palpation between the medial epicondyle and olecranon. The outcome was assessed by sensory function test : two-point discrimination test (TPDT) and visual analog scale (VAS) for pain, which were taken before and two, four, six and eight weeks after treatment.

Results: Perineural therapy with PRP shown to be significantly effective than PPP ($P < 0.05$) either in VAS or TPDT measurements. Patients receiving perineural injection of PRP showed a significant reduction of TPDT ($P < 0.05$) compared with the baseline. The significant VAS improvement ($P < 0.05$) was observed among the PRP group, while the placebo group showed no signifificant improvement.

Conclusion: This study shows that perineural PRP injection therapy could lead to signicant improvement of sensations in peripheral neuropathy patients with leprosy.

Limitations: Small sample size, smaller observation time and only ulnar nerve and its distribution course was included in the study.

Conflict of interest: none

Keywords: Leprosy, Platelet-rich plasma, Perineural injection, Peripheral neuropathy, Sensory function test

#0337/ ILCABS268

PRELIMINARY OUTCOMES OF THE PEP++ RANDOMISED CONTROLLED TRIAL TESTING AN ENHANCED CHEMOPROPHYLAXIS REGIMEN TO INTERRUPT THE TRANSMISSION OF LEPROSY IN FIVE LEPROSY ENDEMIC COUNTRIES

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Introduction: New post-exposure prophylaxis initiatives are needed to interrupt the transmission of leprosy, particularly for household contacts and blood relations of index cases. This study tests the effectiveness of a more robust preventive regimen (PEP++), combining rifampicin (600mg, adult dosage) and clarithromycin (500mg) in three doses, four weeks apart. It will be administered to ≈ 225,000 closest contacts of index patients, those at highest risk of harbouring *M. leprae* infection and manifesting the disease. The trial began in two endemic areas of Brazil in 2020 and is planned to begin in India, Indonesia, Nepal and Bangladesh shortly.

Objectives: This trial has the specific objectives to, by 2025: a) reduce the number of new cases of leprosy in project areas by 50% compared with the 2019 baseline; and b) demonstrate increased efficacy of the enhanced PEP++ regimen compared to single-dose rifampicin (SDR-PEP).

Methods: The study uses a cluster-randomised controlled trial design. The randomisation units are sub-district geographical divisions specific to each country. In the intervention areas, all close contacts listed by leprosy patients receive the PEP++ regimen after being screened for leprosy and tuberculosis. In the control

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areas, the same number of close contacts will be given SDR-PEP. All contacts will be re-examined after a two-year period to check for leprosy disease onset.

Results: Study enrolment to date is 660 contacts in Brazil following several inception delays; the remaining countries are starting recruitment. After the two-year follow-up period, trial data will be analysed to determine the efficacy of the new chemoprophylaxis regimen.

Limitations: Because of the randomisation method, blinded outcome assessment was not considered possible.

Conclusions: It is anticipated that the combination of antibiotics in the PEP++ regimen will demonstrate increased efficacy compared with SDR-PEP. It would then be available for roll-out as a replicable tool.

Keywords: Post-exposure prophylaxis, Preventive regimen, Randomised controlled trial

#0338/ ILCABS289

ADVERSE EVENTS OF RIFAMPICIN AND CLARITHROMYCIN IN CLOSE CONTACTS OF THE PEP ++ PROGRAMME, BRAZIL

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Introduction: The PEP++ Programme is an international multicenter study that aims to determine the reduction in the risk of Hansen's disease in close contacts (CC) of leprosy cases, using a three-dose regimen with rifampicin and clarithromycin (PEP++). Although antimicrobials are safe drugs, they may be associated with adverse events (AE), which are defined as any negative occurrence present during or after their administration. AEs can be classified as mild, moderate and severe, based on the final outcome.

Objective: To describe the AEs related to the administration of chemoprophylaxis with either single dose rifampicin (SDR-PEP) or rifampicin + clarithromycin (PEP++).

Methods: Cross-sectional study, developed in two endemic municipalities of Brazil, Fortaleza and Sobral, Ceará. The CC were approached during home visits with dermato-neurological evaluation and and administration of chemoprophylaxis. AE monitoring was performed through telephone contact on the day after regimen administration and 3 days after. An electronic REDCap form was used to collect data on AE. Data were analyzed using Stata IC 13.0 software. Results: 433 CC received prophylaxis, 296 (68.4%) SDR-PEP and 137 (31.6%) PEP++. We monitored 261 (60.2%) contacts, of whom 188 (72%) were SDR-PEP and 73 (28%) PEP++. Among those monitored, 113 (43.3%) had urine color change; 19 (7.3%) urine color change associated with gastrointestinal effects; 7 (2.7%) reported other AEs (nerve pain, fever, and shortness of breath); and 2 (0.8%) vomiting. One AE was classified as moderate.

Limitation: Find all contacts approach by call.

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Conclusion: It was verified that the AEs reported were as expected, without major risk to the participants' health. The monitoring allows the guidance to the participants in a more pro-active way, which resulted in greater comfort and safety for the community and researchers. It constitutes an essential practice for the development of clinical research.

Keywords: Adverse Events, Chemoprophylaxis, Leprosy, Contact tracing

#0339/ ILCABS299

EXPLORATION OF BARRIERS AND FACILITATORS OF MANAGEMENT OF LEPROSY REACTIONS AT HOSPITAL-SETTINGS IN TWO LEPROSY ENDEMIC COUNTRIES

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Introduction: Leprosy reactions are immune-mediated complications of leprosy. It is estimated that 8.7 per 100 persons affected by leprosy and 3.2 per 100 persons affected by leprosy are at risk every year to develop type-1 reactions and Erythema Nodosum Leprosum respectively. To date, non-medical aspects related to leprosy reactions are overlooked in leprosy research. Accounting for these aspects is crucial to understanding the realities of the individuals affected, ultimately revealing potential care solutions that respond to their needs.

Objective: To explore barriers and facilitators to accessing quality treatment and care management for people with leprosy reactions.

Methods: This study was comparative and exploratory by nature. Indonesia and India were selected as study sites. Study populations included individuals receiving treatment for leprosy reactions, health workers, and family members aged 17 years old and above. Interviews and focus group discussions were held. Thematic analysis was used to interpret the data.

Results: A total of 103 participants from both countries were recruited purposively. Interviews were conducted with 66 patients, and eight focus group discussions were conducted with 15 health workers and 38 family members. Thematic analysis revealed four main themes which were organization of healthcare system, hospitals as places to respite, limited resources, and alternatives in treatment-seeking. Treatment for leprosy reactions was primarily managed by the government healthcare facilities in Indonesia, whereas individuals in India received care from community-led facilities. Differences in the healthcare organization contributed to treatment decisions (e.g., inpatient or outpatient, use of steroids and thalidomide, and self-care practices), further impacting the lives of people with leprosy reactions and their treatment-seeking behavior.

Limitations: Experience of people with leprosy reactions at primary care facilities were not included.

Conclusion: Barriers and facilitators in accessing quality management of leprosy reactions are related to the healthcare organization and treatment decisions.

Keywords: Management of Leprosy Reactions; Indonesia; India

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#0340/ ILCABS309

COMPARATIVE EFFICACY AND SAFETY OF CYCLOSPORINE PLUS PREDNISOLONE AND PREDNISOLONE ALONE IN A RECURRENT ENL: THINKING BEYOND THE CONVENTIONAL

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Background: Erythema Nodosum Leprosum (ENL) is a serious complication of leprosy. It is normally treated with high dose steroids, but its recurrent nature leads to prolonged steroid usage and associated side effects. There is little evidence on the efficacy and safety of other immunosuppressive for ENL, especially for patients who have become steroid resistant or have steroid side effects.

Aim: and objective: To compare the effectiveness and safety profile of cyclosporine with and without prednisolone in recurrent ENL.

Materials and methods: Recurrent ENL was defined by the appearance of al least one further episode of ENL occurring 28 days or more after withdrawal of treatment.Ten patients with recurrent ENL were randomly recruited into two groups each: group 1 received cyclosporine with prednisolone and group 2 received prednisolone alone. Efficacy of these two regimens was assessed on the basis of clinical recovery measured by reaction severity scores (RSS), visual analogue scale (VAS) and other relevant parameters, requirement of extra dose of steroid for clinical recovery, recurrence of ENL during 12 months of follow up and side effects observed in each regimen.

Results: There was a clear delay of approximately 12 weeks in onset of the next ENL recurrence episode; recurrence episodes were fewer and less severe requiring less additional prednisolone to control ENL in group 1 ($p<0.05$). Systemic features like uveitis, neuritis, arthritis, lymphadenitis and orchitis were well controlled with cyclosporine. Group 1 had less steroid induced side effects.

Conclusion: The results from this small study suggest that cyclosporine can be effectively used in management of recurrent ENL.

Limitations: small sample size.

Keywords: Cyclosporine, Erythema Nodosum Leprosum, Prednisolone, Recurrent ENL

#0341/ ILCABS320

COMPARATIVE EVALUATION OF ETANERCEPT PLUS THALIDOMIDE VERSUS THALIDOMIDE ALONE IN RECALCITRANT SEVERE CHRONIC TYPE 2 LEPRA REACTION

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Introduction: Type 2 Lepra reaction are immunological reactions with profound complications. About 62% of these reactions become chronic and unfortunately in some cases, despite and reaction drugs, 10-15% of them become recalcitrant to conventional treatment and warrent unconventional therapy.

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In this study, such recalcitrant cases were dealt with using the biologic, Etanercept.

Aims and Objectives: To study the comparative efficacy of Inj Etanercept plus Thalidomide versus Thalidomide alone in severe recalcitrant chronic ENL.

Materials and Method: A prospective randomized study was performed on 12 patients with recalcitrant ENL. Patients were randomly assigned (1:1) to receive either Inj Etanercept plus Thalidomide (Group A) or Thalidomide alone (Group B).

Both the groups were given prednisolone as per WHO recommendations. In group A, remission was attained by introduction induction therapy using Inj. Etanercept 6-8 doses based on clinical response. Both the groups received Cap Thalidomide starting at the dose of 300mg, tapered to 200mg, 150mg, 100mg every 2-3 months and maintained at 50mg till remission.

The patient outcome measures were EESS at baseline, 1 week, 1,3,6,12 months, total number of recurrences, cumulative steroid and thalidomide dose, grading of neuropathy and side effect profile.

Results: The mean of % improvement in EESS in group A was 85.31% and 90.43% at 1month and 12months respectively. It was 72.67% at 1 month and 89.74% at 12months in group B. This change was significant at 1month (p=0.004).% improvement in neuropathic pain in groups A and B were 64.66% and 35.53% respectively at 3months.(p=0.005)

Significantly higher number of recurrences were observed in group B.

Limitations: The major limitation in using Etanercept was the paucity of literature and cost constraints.

Conclusion: Etanercept can be used as an effective induction agent in recalcitrant ENL and hence can reduce dose, duration and side effects of thalidomide and steroid.

Keywords: Recalcitrant, Severe, Chronic, Induction, Etanercept, EESS

#0342/ ILCABS446

EFFECTIVENESS OF APREMILAST IN THE MANAGEMENT OF CHRONIC AND RECALCITRANT ERYTHEMA NODOSUM LEPROSUM – A CASE SERIES.

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Introduction: Chronic or recurrent erythema nodosum leprosum (CR -ENL) is a therapeutic challenge in leprosy which leads to significant morbidity and disability. There are a few promising reports of the effectiveness of apremilast in ENL.

Objectives and Methods: A retrospective study was conducted in patients attending a tertiary care centre in South India between January 2019 and April 2022 (40 months) with an aim of describing the use of apremilast in CR-ENL. All patients of ENL were screened and patients with CR- ENL who received apremilast were included.

Results: Among 24 ENL patients during the study period, 9 patients (7 males, 2 females) of CR- ENL were included. (3 chronic, 6 recurrent) Mean age of patients was 35.11±5.7 years and mean disease duration was 18.7±10.9 months. The average bacteriological index (BI) was 3.88± 0.56 and all were on

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WHO -multibacillary multi-drug therapy. Various drugs like prednisolone (9), clofazimine (9), thalidomide (5),azathioprine (1) had been previously tried with partial response.

Gastrointestinal intolerance was the only side effect noted which led to cessation of therapy in 1 patient (after 1 week) and dose reduction in another (15mg once daily). Others received a dose of 30mg twice daily. Three patients were lost to follow up while other 5 were followed up for a mean period of 4 months (range: 1-6). The average time for control of ENLs after adding apremilast (while continuing other medications) was 10 days (7-22). On follow up, tapering of steroids and other immunosuppressants while continuing apremilast was possible in all 5 patients (100%) without any interim flare.

Limitations: Retrospective design and low sample size were the limitations of our study

Conclusion: Apremilast is a safe and effective drug in the management of chronic, recurrent, and steroid dependent ENL patients and can be considered as a viable alternative.

Keywords: Chronic and recurrent erythema nodosum leprosum, Apremilast

#0343/ ILCABS477

COMPARATIVE STUDIES OF SERUM IGG AND IGM AGAINST PHENOLIC GLYCOLIPID-1 IN LEPROSY PATIENTS

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Introduction: Leprosy is a chronic and disabling infection caused by Mycobacterium leprae (*M. leprae*) for which MDT is the standard therapy. Due to unmet therapeutical approaches, a new regime ALT (alternative leprosy treatment) using bactericidal drugs was evaluated for this disease. In addition, phenolic glycolipid 1 (PGL-1) is a *M. leprae*-specific antigen and has widely been used for the serodiagnosis. Therefore, the present study aimed to compare the trends of anti-PGL-1 antibody levels in leprosy patients.

Material and methods: A total of 34 subjects (17 controls and 17 leprosy patients) were enrolled in the study and anti-PGL-1 antibody titres were analysed in serum samples. Standard pooled sera from multibacillary (MB) patients were used at a dilution of 1:100 to 1:3200 for IgG PGL-1 and 1:200 to 1:6400 for IgM PGL-1 to plot a standard graph. Optical density (OD) values were captured at 490 nm.

Results: We evaluated the ability of antigen, natural disaccharide octyl-BSA (ND-O-BSA) to detect antibodies in the sera of control subjects and treatment-naive/relapsed MB leprosy patients. Out of 17 patients, 9 patients were on the ALT and 8 were on MDT. At baseline, the mean OD titres of anti-PGL-1 for IgG in controls and patients were 0.544 and 2.568, respectively. Additionally, the mean OD titres of anti-PGL-1 for IgM in controls-0.386 and patients-0.863. After one year of respective treatments, the mean OD titres of anti-PGL-1 for IgG-2.39 and IgM-0.753 were found in the ALT group. In the MDT group, IgG-2.093 and IgM-0.809 were obtained.

Limitation: To emphasize our outcomes, more patients can be recruited for the follow up based study.

Conclusion: The data showed that anti-PGL-1 ELISA can be considered as a reliable parameter to monitor the early responses in leprosy patients.

Keywords: Multibacillary, Anti-PGL-1, Serum IgG, Serum IgM

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#0344/ ILCABS489

PHOSPHODIESTERASE 4 (PDE4) INHIBITION WITH CC-11050 CORRELATES WITH REDUCED CIRCULATING PROINFLAMMATORY CYTOKINES AND IMPROVEMENT IN CLINICAL OUTCOMES IN LEPROSY PATIENTS WITH ERYTHEMA NODOSUM LEPROSUM

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Introduction: Erythema nodosum leprosum (ENL) is an inflammatory complication of multibacillary Myobacterium leprae infection that occurs despite effective antimicrobial therapy. To replace prednisolone or the teratogenic drug thalidomide, approved for ENL treatment in 1998, we tested the phosphodiesterase 4 (PDE4) inhibitor CC-11050 for its ability to reduce inflammation and reverse ENL symptoms.

Objective: Evaluate whether circulating pro-inflammatory cytokine concentrations temporally associate with CC-11050 treatment and with ENL clinical severity.

Materials/methods: Ten male patients enrolled in a single-arm, open label Phase 2 trial in Nepal were treated with CC-11050 (200 mg BID x28 days). Serum was collected immediately before, during (weekly) and after the treatment period. Using multiplex cytokine analysis, changes in serum cytokine concentrations were determined by pairwise testing (Tukey method). Correlation between cytokine concentrations and ENL severity scores were assessed by Pearson's correlation.

Results: All 10 patients demonstrated rapid improvement in clinical severity scores. Compared to pre-treatment concentrations, serum IL6, IL2Ra and TNFR1 levels significantly declined ($P < 0.01$) during the 28-day treatment period. The decline was greatest within the first 7 days and was durable beyond the 4-week treatment period in a majority of subjects. Reductions in IL6, IL2Ra and TNFR1 correlated significantly ($P < 0.001$) with the decline in ENL severity scores using Pearson correlation (estimate 0.77, 0.63 and 0.56, respectively).

Limitations: This small single-arm pilot study had limited sample collections post-treatment compromising the ability to assess durability of response.

Conclusions: CC-11050 PDE4 inhibition is safe and correlates with improved clinical outcomes and with reduced circulating pro-inflammatory cytokines in ENL patients. These data inform the design of prospective, controlled clinical studies to establish the safety and efficacy of CC-11050 and to enable the development of diagnostics based on ENL-specific biomarkers.

We acknowledge grant support from the New York Community Trust Heiser Program for Research in Leprosy (P20-002779).

Keywords: Erythema nodosum leprosum, Phosphodiesterase inhibitor

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#0345/ ILCABS558

A STUDY OF EFFECTIVENESS OF UNIFORM MULTIDRUG THERAPY (UMDT) IN PATIENTS OF HANSEN'S DISEASE

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Introduction: Uniform multidrug therapy (U-MDT) is a single regimen for all cases of leprosy, lasting for six months. It was first discussed as a serious proposition at the WHO Technical Advisory Group in 2002. Duration of leprosy treatment remains long and difficult to complete in resource poor areas. Studies suggest that shortening duration of therapy for MB patients to 6 months may be possible.

Objective: To study the effectiveness of U-MDT on clinical, bacteriological and histopathological parameters.

Material and methods: It was an open prospective cohort study. The study population consisted of patients attending the department of dermatology, venereology and leprology at tertiary care center in western India with study duration of two years. Inclusion criteria was newly diagnosed leprosy patients presented within initial 6 months of the study duration and all the defaulter, relapsed and RFT cases were excluded from the study. Clinical, bacteriological and histopathological parameters all three criteria were compared to assess the effectiveness of UMDT.

Results: Out of 24 enrolled patients 21 were MB cases and 3 were PB cases. 50% patients achieved 21-40% improvement in cutaneous lesions after 6 months while only four patients achieved 81-100% clearance of cutaneous lesions. More than 50% patient showed partial improvement in deformity but none showed complete recovery. Similarly, more than 50% patient showed histopathological improvement. We had to continue MDT beyond U-MDT in 5 patients out of 18 patients based on rescue criteria. None of patient had complete recovery of deformity showing importance of early diagnosis and initiation of treatment to prevent permanent deformity leading to disability. All patients in whom we had to continue MDT beyond U-MDT were MB patients.

Conclusion: U-MDT may be effective for TT leprosy but may not be sufficient in patients with high bacterial index.

Keywords: Uniform Multi drug therapy (U MDT), Effectiveness, Leprosy treatment

#0346/ ILCABS567

THALIDOMIDE – AN INDISPENSABLE INTERVENTION IN THE MANAGEMENT OF ENL/TYPE 2 REACTIONS IN LEPROSY – LARGER EXPERIENCE

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Objective: Thalidomide is extremely useful in treatment of ENL and type2 reactions in leprosy and proved to be lifesaving in several patients. We had reported our clinical observations on larger efficacy of thalidomide

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earlier (2005, 2013, 2016). We now share our experience spanning over a decade in patients treated with thalidomide for ENL/T2R at our Referral Centre.

Methods: Analysis covers patients with chronic ENL, severe ulcerative/necrotic ENL, steroid dependent and/or with steroid adverse effects, steroid non-responders referred for management with Thalidomide. During period 2005 to 2022, 441 patients with ENL/type2 referred by local medical colleges, practicing dermatologists, Government district/civil hospitals.

Of 441 patients, 97 females and 344 males, age group 8 to 71 years. Patients assessed clinically, bacteriologically and blood investigations done. Informed consent, counselling as per Protocol was ensured. ENLIST severity score ranged from 8-28. Thalidomide was administered in daily dose of 300mg per day in divided doses, tapered and maintained over a period of 12-18 months.

Results: ENLs subsided in week's time with marked improvement in quality of life. No major adverse effects noticed except minor effects like oedema of feet in few cases, drowsiness. New sensory/motor neuropathy seen in 2 patients. Recurrence of ENL reactions observed in 93 (21%) either during/completion of thalidomide requiring additional steroids or stepping up dose of thalidomide. Most had BI >3+. All steroid dependent patients could be weaned off from steroid dependency and steroid adverse effects.

Conclusion: We observed from this larger experience, spanning over a decade, thalidomide as an immunosuppressive and anti-inflammatory drug proved to be an indispensable intervention and excellent drug in the management of severe ENL/Type2 reactions bringing in significant improvement in quality of life, amelioration of pain especially in those with steroid adverse effects and steroid dependency.

Keywords: Leprosy, ENL, Reaction, Thalidomide, Recurrent reaction

#0347/ ILCABS598

BCG VACCINATION AND ITS IMPLICATION ON LEPROSY IN TERTIARY CARE HOSPITAL IN NORTH INDIA

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Introduction: BCG vaccine initially developed to provide protection against TB, has shown immunoprophylactic effect against leprosy also. Its prophylactic effect has been shown to range from 20-90%, in various studies and its role in reducing incidence of leprosy has also been proposed.

Objective: To compare progression of disease in leprosy patients who were vaccinated with BCG to those who were not vaccinated.

Materials and methods: A retrospective study was conducted at tertiary care hospital in North India. All newly diagnosed leprosy patients attending outpatient department of hospital from April 1, 2017 to March 31, 2022 were included. The recorded data, regarding the BCG vaccination status, type of leprosy, type of reaction, grade of deformity were analysed. Patients were divided into two groups-those vaccinated with BCG and those not vaccinated with BCG and the progression of disease was noted.

Results: During the above mentioned time period, 60 patients were diagnosed to have leprosy. Among these, 46.6% of cases were vaccinated while 53.3% of cases were not vaccinated. There was no significant difference seen in the incidence of different types of leprosy in vaccinated and non-vaccinated groups. In non-vaccinated

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group, 62.5% of cases developed lepra reaction as compared to 53.5% in vaccinated group. The incidence of grade 2 deformities in vaccinated group was 17.8% as against 34.3% in non-vaccinated group.

Limitations: As the study was conducted in one hospital only, the results can't be universalized.

Conclusion: BCG vaccination has shown reduction in the incidence of lepra reactions and deformities and disabilities in leprosy patients.

Keywords: BCG vaccination, Reactions, Deformities

#0348/ ILCABS618

TREATMENT OF CHRONIC RECURRENT STEROID DEPENDENT ERYTHEMA NODOSUM LEPROSUM: EXPERIENCE FROM TERTIARY CARE CENTRE OF CENTRAL INDIA

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Introduction: Chronic or recurrent Erythema nodosum leprosum (ENL) is often recalcitrant to treatment. Recommended treatment modalities include prednisolone plus clofazimine or thalidomide. Long term administration of steroids pose serious issues like steroid dependency, resistance and adverse effects. Immunosuppressives like methotrexate, azathioprine, cyclosporine have also been used as steroid sparing agents. Current treatment guidelines are not supported by evidence and are mainly based on practice.

Objective: We discuss our experience regarding the therapeutic outcome of steroid dependent chronic and recurrent, severe ENL cases.

Patients: A total of ten cases were included in this case series.

Results: Seven males and three females were included. Three of the cases had completed MDT before developing ENL. Five cases had steroid induced diabetes mellitus, three had steroid induced cataract and one had glaucoma. All cases were started on thalidomide as steroid sparing agent. Out of them, five cases had good response to thalidomide. However, ENL flare-ups with neuritis did not respond to thalidomide and needed updosing of prednisolone. Five thalidomide resistant cases were given methotrexate and all of them achieved good control of ENL. High dose clofazimine was used along with thalidomide and steroids in only two cases due to its availability issues. Five of the patients were given two year MDT course based on high bacillary load.

Limitations: Small number of cases in this series does not provide enough evidence for guiding treatment recommendations for ENL.

Conclusion: Steroid dependency in recurrent or chronic ENL is a difficult scenario which can be managed by thalidomide. However, in thalidomide resistant cases, methotrexate is a good alternative and is even more economical. Early institution of steroid sparing modalities like thalidomide or methotrexate in chronic and recurrent ENL might reduce cumulative steroid dosage which in turn might prevent steroid induced adverse effects.

Keywords: Erythema nodosum leprosum, Recurrent, Thalidomide, Methotrexate, Resistant

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#0349/ ILCABS648

AUTOLOGUS PLATELET-RICH FIBRIN MATRIX (PRFM) THERAPY IN NON HEALING TROPHIC ULCERS IN HANSEN'S DISEASES

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Introduction: Chronic non healing ulcers cause a great deal of morbidity to a patient of leprosy. Minimizing the duration of healing can be a major step in rehabilitation of patients achieved by PRFM therapy which provide necessary growth factors.

Aim: This study aims at evaluating the efficacy of PRFM in treatment of non- healing ulcers in leprosy patients.

Design: Prospective, Institutional based study.

Material And Methods: 12 patients with 14 non healing ulcers more than 6 weeks duration who presented to OPD. Procedure repeated every week until complete re-epithelisation occurred up to 6 sittings. Clinical photographs were taken before therapy and at every subsequent sitting. Area, volume of ulcer was calculated at baseline and each follow up.

Result: Mean reduction in area and volume of ulcer was 90.5% and 97.3% respectively. Average duration of healing of ulcers was 5 weeks. 79% of ulcers healed completely at the end of 5 weeks.

Conclusion: This study shows good efficacy of PRFM in management of non-healing plantar ulcers in leprosy. PRFM dressing is feasible, safe, simple and inexpensive method.

Keywords: Trophic ulcers, PRFM dressings

#0350/ ILCABS653

EVALUATION OF EFFECTIVENESS OF A SHORT COURSE CHEMOTHERAPY IN THE PATIENTS OF LEPROSY: A COMBINED RETROSPECTIVE AND PROSPECTIVE COHORT STUDY

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Introduction: Leprosy is caused by the Mycobacterium leprae affecting mainly the skin, nerves and mucous membranes. The World Health Organization (WHO) recommended multidrug regimen of rifampicin, clofazimine, and dapsone. In 1998 the WHO technical advisory group noted that multibacillary patients could probably be treated with only 12 months of multidrug therapy. However, no long-term relapse data are currently available for this regimen.

Objectives: To study the effectiveness of short course chemotherapy.

Material and methods: Study was conducted at a tertiary care centre in western India. All newly diagnosed leprosy patients were included in the study. All the demographic data like name, age, sex, residence, occupation etc. were recorded. Baseline clinical examination, slit skin smear and histopathological examination were done. Irrespective of their PB/MB status all were given 12 MB Packs. Pre and post slit skin smear as well as skin biopsies were compared at the end of 12 MB packs. Patients were followed up for another one year after

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completion of short course chemotherapy. All the pre and post data was compared to evaluate the efficacy of short course chemotherapy.

Results: Total 30 patients were included in study; with the MB: PB ratio being 9:1. MB-MDT was sufficiently effective in 86.36 % patients. It was highly effective in PB patients with 100 % effectiveness while in MB patients it showed 72.72% effectiveness. If we compare histopathological improvement treatment showed good response in 72.22% patients and poor response 5.56 % patients while 22.22 % patients didn't show any change.

Limitations: Small sample size, short follow up duration to assess the relapse rate.

Conclusion: There is slow and steady regression of the bacillary load with the treatment which is continuous even after stopping 1 year MDT. Short course chemotherapy is sufficient in leprosy, barring few very high BI and late presenters.

Keywords: Fixed duration therapy, Leprosy, Multi drug therapy, Short course chemotherapy.

#0351/ ILCABS662

TOWARDS ZERO TRANSMISSION: BARRIERS AND FACILITATORS OF SDR-PEP IMPLEMENTATION IN LEPROSY ENDEMIC COUNTRIES

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Introduction: Single-dose rifampicin post-exposure prophylaxis (SDR-PEP) reduces the risk of developing leprosy by 57% when given to contacts of leprosy patients. The World Health Organization (WHO) included SDR-PEP in their 2018 leprosy guidelines. However, the level of SDR-PEP implementation in National Leprosy Control Programmes (NLCPs) is unclear.

Objectives: To explore barriers and facilitators of contact tracing and SDR-PEP administration in routine services of NLCPs in endemic countries.

Patients / material and methods: This is a mixed-methods study using an online questionnaire via Qualtrics (English, French) and semi-structured interviews (English, French, Portuguese) based on the Consolidated Framework for Implementation Research. Study participants are policymakers or programme managers from ministries of health and leprosy organizations working in/for moderate to high endemic countries and WHO global priority countries, counting 33 countries in total. Data analysis takes place via SPSS and ATLAS.ti.

Results: Until now, 35 people from 22 countries completed the questionnaire; interviews are ongoing. Every country had – on various levels – experience with leprosy patients' listing, tracing and screening contacts. Most participants (n=21, 60%) learned about SDR-PEP from WHO guidelines. A total of 15 (68%) countries have practical experience with SDR-PEP; in 9 (41%) countries it is included in the NLCP. SDR-PEP is included in guidelines, manuals or strategy documents in 13 (59%) countries. In 15 (68%) countries SDR-PEP is not currently used, but all plan to plan to integrate it in their NLCP. Reasons why SDR-PEP has not yet been adopted include: insufficient (trained) health workers, lacking rifampicin, costs, doubts about effectiveness, stigma and logistical barriers. More results are expected soon.

Limitations: Because of a great country variety, not all languages were available for the questionnaires/ interviews. Also, low-endemic countries were not included.

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Conclusion: Many countries are interested in implementing SDR-PEP in their NLCP. Support is needed to overcome the implementation/upscaling.

Keywords: Leprosy, SDR-PEP, Prevention, Chemoprophylaxis, Endemic countries, Contact screening

#0352/ ILCABS663

TREATMENT OF RECURRENT ERYTHEMA NODOSUM LEPROSUM BY TUMOR NECROSIS FACTOR INHIBITOR ADALIMUMAB

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Introduction: Erythema nodosum leprosum (ENL) is a multi-system immune complex syndrome often characterized by chronicity and recurrences. Biologics are alternative treatment options for control of recalcitrant ENL.

Objective: To assess the efficacy and safety of adalimumab in recurrent ENL

Patients: Case 1 was a 45-year-old male diagnosed with borderline lepromatous leprosy that developed episodes of ENL after 4 months of intake of multi-drug therapy (MDT). He was started on prednisolone and thalidomide for its control; however, on tapering the drugs patient would develop new crops of lesions. Case 2 was a 36-year-old female who after completing 12 months of MDT for lepromatous leprosy developed painful crops of erythematous nodules which were recurrent. Her lesions did not improve despite multiple extended courses of prednisolone and thalidomide. Case 3 was a 55-year-old male with a diagnosis of ulcerative ENL that did not improve with a repeated course of steroids and thalidomide. All patients underwent a series of investigations in the form of a Mantoux test, chest X-ray, interferon-gamma release assay, and Hepatitis B and HIV serology. Adalimumab was administered in a dose of 40 mg/week subcutaneously for a duration of 12 weeks with a follow-up period of 12 weeks.

Results: All patients improved significantly that allowed for a slow taper of prednisolone and thalidomide. Resolution of constitutional symptoms took a mean of 3.51 days and that of ENL took 7.28 days. The number of recurrent episodes during the treatment period was a mean of 9.6. A single patient had recurrence after cessation of adalimumab.

Limitation: Small sample size with limited duration of follow-up

Conclusion: Access to anti-TNF therapy including more affordable biosimilars continues to increase. There are no yet published case reports on the role of adalimumab in the management of ENL; hence more controlled trials are necessary to establish its role

Keywords: Recurrent erythema nodosum leprosum, Tumor necrosis factor inhibitor, Adalimumab

#0353/ ILCABS794

A STUDY ON NON ADHERENCE TO MDT AMONG LEPROSY PATIENTS ATTENDING TERTIARY CARE CENTER

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Introduction: WHO MULTIDRUG THERAPY as a treatment modality has led to significant decline in the prevalence of Leprosy. Many patients become non adherent to treatment due to personal, economic,

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psychosocial, medical and health services factors causing increased relapse rate, disabilities, emergence of drug resistance and ultimately failure of our National Health Program.

Objectives: To find out reasons for Non adherence to MDT.

Patient Materials and Methods- A retrospective study was conducted among leprosy patients visiting tertiary care center from January 2021 to March 2022. Inclusion criteria was non adherence to MDT for 1 month or more. Data assessed by statistical analysis with Microsoft excel and tool being researcher administered questionnaire.

Results: Out of 118 cases, 22 cases (18.6%) were non-adherent to MDT. 63.6% cases were from urban area and 36.3% from rural area with males being (54.5%) and females (45.5%). Median monthly family income was 20000 rupees ("upper-lower" income group according to modified Kuppuswamy scale 2021). The average duration of MDT taken was 8.11 months and the average duration of discontinuation of MDT was 2.6 months. On finding out reasons for non adherence, 45% were not compliant to drug regimen, 27% had inaccessible government facilities, 18% had side effects due to the drug and 10% had financial reasons. Side effects of drug therapy were as follows-12 cases had weakness, 10 cases experienced nausea, vomiting,diarrhea, headache, 6 cases had drowsiness, 4 cases had discolouration of urine, 4 cases had dark pigmentation of the face, 2 cases had increased appetite. Among the female cases, 80% had some cultural obligations.

Limitation: Small sample size.

Conclusion: Non adherence to MDT was related to gender, socioeconomic group, patient related factors and adverse effects of drugs. Focus on patient friendly health services, counselling, motivation and education about drug therapy should be done.

Keywords: WHO MULTIDRUG THERAPY, Leprosy, Non adherence, Cultural obligations, Adverse effects

#0354/ ILCABS829

RIFAMPICIN SUPPLY CHAIN FOR LEPROSY CHEMOPROPHYLAXIS: PROBLEMS AND SOLUTIONS FOR COUNTRIES DEPENDING ON RIFAMPICIN IMPORT

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Introduction: Single-dose rifampicin post-exposure prophylaxis (SDR-PEP) for contacts of leprosy patients provides a 57% risk reduction in developing leprosy and is recommended by the World Health Organization (WHO). We ordered rifampicin for several projects. In this abstract, we will describe the challenges faced and possible solutions when procuring/importing loose rifampicin.

Description of the case/issue: Unlike for multi-drug therapy (MDT), there is currently no donation programme for SDR-PEP distribution. In some countries, rifampicin is available on national markets or can be procured via tuberculosis (TB) programmes. If not, rifampicin needs to be imported. Close collaboration with ministries of health and customs helps to ensure accurate paperwork and processing. Including SDR-PEP in national leprosy/pharmacotherapeutic guidelines may further smoothen the process. Rifampicin production and import takes around six months; this period increases if active pharmaceutical ingredient (API) shortages or product impurities (e.g. nitrosamine [MeNP]) are present. Prior to purchasing rifampicin, ensure its shelf-life is sufficient and request a quality report which includes the MeNP level. In addition, it

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is advised to order more than 10% surplus to the quantities needed because drug deliveries may be lower than orders and stock problems (e.g. damage, quality control rejections) can occur. Selected dosages (e.g. 450mg) or liquid for children are not always available and it can be challenging to order small quantities of rifampicin.

Rifampicin as leprosy chemoprophylaxis is not formalized in many countries and there is no sound (electronic) reporting and recording system in place to keep track of the usage and to forecast future needs. Correctly storing and monitoring stock is important to avoid medication waste and ensure adequate distribution. Rifampicin has not yet been included in the supply tracking system www.NTDeliver.com.

Conclusion: Close collaboration and making joint (countries or organizations) orders may help to overcome the challenges of importing rifampicin for leprosy chemoprophylaxis.

Keywords: Leprosy, Rifampicin, SDR-PEP, Chemoprophylaxis, Supply chain, Medication

#0355/ ILCABS833

DAILY RIFAMPICIN FOR ERADICATING LEPROSY BY AUGMENTING MULTI DRUG THERAPY (DREAM TRIAL)

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Daily Rifampicin for Eradicating Leprosy by Augmenting multi drug therapy (MDT): DREAM trial

Introduction & background: An optimal dose finding study of rifampicin for treatment of leprosy has never been conducted. Simultaneously proportion of multibacillary cases has increased, These multibacillary cases with high bacterial load can be considered as "cases of Concern" or "cases with consequences" because of the sheer numbers of bacilli which they continue to shed despite receiving fixed duration MDT leading to continued transmission.

Material & methods: The study is designed as Multi-centric, two armed Randomized Controlled Trial of highly bacillated leprosy patients, Group A:- 12 months of Standard WHO MDT MB with daily Rifampicin @ 10 mg/kg not exceeding 600mg; Group B:- receiving conventional WHO MDT MB with capsules B complex (as placebo) with primary objective to compare if there is significant difference in clinical, bacteriological & histopathological parameters among both study groups. Inclusion criteria will be Multibacillary Leprosy patient with Bacteriological Index ≥3+. Patients with primary or secondary immunodeficiency, hepatic dysfunction, history of hypersensitivity to any components of MDT shall be excluded from the study. Withdrawal criteria (Situations warranting exclusion during the study) shall be Severe cutaneous adverse reaction to any component of treatment offered.

Outcome parameters shall be clinical, bacteriological & Histopathological parameters and to observe if there is any reduction in number & severity of Reaction and neuritis episodes among patients treated with Daily Rifampicin in addition to MDT.

Conclusion: The study attempts head to head comparison between conventional WHO MDT MB regimen versus Additional Rifampicin to the same regimen in a Randomized controlled trial in high BI cases at

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multiple centres across India (Novel for the first time). Results can be contributed for policy making both at national as well as International level.

Keywords: Daily Rifampicin, New regimen, DREAM Trial

#0356/ ILCABS861

ERYTHEMA NODOSUM LEPROSUM- AN ENTITY DIFFICULT TO DIAGNOSE AND DIFFICULT TO MANAGE

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Introduction: Erythema Nodosum Leprosum or Type 2 reaction of leprosy is an immune complex syndrome causing inflammation of skin, nerves and other organs. It is an example of type 3 hypersensitivity reaction. Commonly seen in LL and BL spectrum. Here we present 2 cases which directly presented with ENL lesions.

Case 1: A 15 year old female presented with multiple painful ulcers on the body since 15 days. It was associated with joint pains, fever and malaise. History of light colored and dry patchy lesions in the mother since 10 years for which no treatment was taken. On examination peripheral nerves were enlarged and tender. Differential diagnosis included ENL Necroticans, SLE and polyarteritis nodosa. SSS showed high BI and MI.

Case 2: 40 year old male patient came with complaints of multiple red raised lesions over hands and legs associated with fever and joint pains since 15 days. The patient was started on ROM regimen with no much improvement. The patient was later started on MB- MDT and Tab prednisolone with improvement in lesions. The patient developed recurrence of lesions on dose reduction.(4-5 episodes). The patient was later given thalidomide for 6 months. It was stopped when patient developed gynecomastia. Later patient was continued with MB-MDT and was started on clofazimine and prednisolone with little improvement.

Discussion: Type 2 reaction of leprosy can have varied presentations ranging from tender nodules to vesicles pustules and painful ulcers. Proper and timely diagnosis is needed to prevent nerve damage and development of deformities. Reactions can have social impact on patients as it is associated with prolonged treatment and multiple episodes of recurrences. Patients should be adequately counselled regarding the duration of treatment and the need for regular treatment.

Keywords: Erythema Nodosum Leprosum, Type 2 reaction,

#0357/ ILCABS900

AZATHIOPRINE IN RECALCITRANT AND RECURRENT ENL: A CASE SERIES

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Introduction: Erythema Nodosum Leprosum (ENL) may have a chronic course that may be recalcitrant to treatment. Preferred treatment modalities are systemic corticosteroids and thalidomide. Azathioprine, methotrexate, and cyclosporine are immunosuppressants that may also be used as steroid-sparing agents. We herein report 3 cases of recurrent and recalcitrant ENL who responded adequately to Azathioprine.

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Objective: To present a case series of 3 patients with recalcitrant and recurrent ENL, who responded to Azathioprine with no recurrence.

Patients/ Material and Methods: Patients with the clinical diagnosis of recurrent and recalcitrant ENL were recruited. The patients did not respond to the conventional treatment i.e, clofazimine and thalidomide, and started on Tab Azathioprine (1-2mg/kg) along with oral prednisolone (1mg/kg). All the baseline investigations were done before starting the treatment and patients were followed up for a minimum period of 12 months to monitor for any signs of recurrence or relapse.

Results: Three patients were recruited with recalcitrant ENL. They were started with oral prednisolone (1mg/kg). Although, the episodes used to get controlled partially they developed recurrences on and off once the dose was tapered and continued for 1-2years. They were started with Clofazimine followed by Thalidomide for 6 months, but the recurrences continued. Later, they were started on Tab Azathioprine (1-2mg/kg) and the lesions disappeared within 2-4 weeks of starting treatment. The patients were followed monthly for 12 months. None of the patients showed any signs of relapse or recurrence. Neither one developed side effects from the drug and responded well with a good patient satisfaction.

Limitations: Lack of a long-term follow-up and small sample size.

Conclusion: Azathioprine is a safe and effective modality to treat recalcitrant and recurrent ENL cases. Further extensive comparative trials should be undertaken to study the effect of Azathioprine compared to the conventional treatment options.

Conflicts of Interests: None

Keywords: ENL, Recalcitrant, Recurrent, Azathioprine

#0358/ ILCABS912

EFFECT OF POST EXPOSURE CHEMOPROPHYLAXIS WITH SINGLE DOSE RIFAMPICIN TO HEALTHY CONTACTS OF ALL NEW PB/MB LEPROSY CASES IN AN ENDEMIC DISTRICT IN SOUTH INDIA FOR 5 YEARSEARS

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Introduction: Erode is one among moderately endemic districts of India. It is one among the districts with high number of new leprosy cases detected in Tamilnadu. Due to its chronic incubation period of Leprosy, there is very slow decline in number of new cases per annum for decades. After introduction of Single dose Rifampicin to healthy contacts of all new PB/MB leprosy cases, there is a steady and remarkable decline in number of new cases per annum.

Objective: Comparing the annual new cases detected for the past 5 years, after introduction of SDR to healthy contacts of all new PB/MB leprosy cases .

Material and methods: From 2017 SDR is given to healthy contacts of all new PB/MB leprosy cases in Erode district of Tamilnadu. The number of contacts vary from 8 to 15 per case.

Results 1.Prevalence rate/10000 is reduced from 0.68 (31.3.2016) to 0.56(31.3.2022)

2.Number of new cases detected is reduced from 489 (31.3.2016) to 159 (31.3.2022)

3. ANCDR/100000 is reduced from 489 (31.3.2016) to 159 (31.3.2022)

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4.MB cases detected is reduced from 179(31.3.2016) to 74 (31.3.2022)

5.Number of child cases detected is reduced from 43(31.3.2016) to 5 (31.3.2022)

6.Grade 2 deformity detected is reduced from 10(31.3.2016) to 2 (31.3.2022)

Limitations:

1.Stigma of the disease

2.Not revealing the index patient's identity-refusal by contacts.

3.Covid pandemic-reduced examination&new cases

Conclusion: After Single dose Rifampicin to healthy contacts of all new PB/MB leprosy cases, there is a steady and remarkable decline in number of new cases per annum, new MB cases, Number of Grade 2 deformities.

Keywords: Annual New Case Detection Rate, Multibacillary LEPROSY, SDR

#0359/ ILCABS930

IMPACT OF CNHEMPPROPHYLAXIS IN HEALTHY CONTACTS OF LEPROSY PATIENTS

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Introduction: Despite achievement of elimination status for Leprosy at country level in 2005, leprosy case in the UT of Dadra & Nagar Haveli (DNH) continued to increase and Prevalence Rate peaked to 6.7/10,000 in 2015. In addition, the rising proportion of child cases indicated active transmission of Mycobacterium Leprae in the population of DNH. Single Dose Rifampicin (SDR) post-exposure prophylaxis (PEP) was started initially in a project mode and continued later on as a routine component for Leprosy control. By the end of 2021 there was substantial decrease in the PR of Leprosy in the district.

Objective: Assess the impact of chemoprophylaxis in reducing prevalence of Leprosy and analyze the time lag between administration of chemoprophylaxis and development of Leprosy.

Methodology: All the eligible contacts of new leprosy patient were administered single dose of rifampicin chemoprophylaxis under observation. These contacts were followed up every 3-4 months and screened for development of signs/symptoms of Leprosy. The contacts that developed any sign/symptom of Leprosy were further examined by medical officer of concerned PHC for confirming as a case of leprosy. Opinion of dermatologist was taken in doubtful cases before confirming it as leprosy.

Results: Over a period of 7 years, 77430 contacts were administered SDR after excluding the possibility of active leprosy disease. In due course, 160 contacts (including household, neighborhood and School/workplace contacts) were confirmed as a case of Leprosy. PR of Leprosy decreased by 83% during the reference period.

Limitations: The impact of intensified routine programme activities and innovations are not factored in while attributing the impact of chemoprophylaxis.

Inference/Conclusion: Administration of PEP contributes in reduction of prevalence. The time lag between PEP administration and development of first sign of leprosy among the contacts of Leprosy patients varied from a few months to years.

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Keywords: Chemoprophylaxis, Single Dose Rifampicin, Post Exposure Prophylaxis

#0360/ ILCABS1003

ANALYSIS OF LEPROSY RELAPSED CASES AFTER MDT IN YUNNAN PROVINCE FROM 1990 TO 2020

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Background: To analyze the leprosy relapse cases after MDT(Multidrug Therapy) in Yunnan province from 1990 to 2020, understand the long-term treatment efficacy of MDT and the recurrence of relapse, as well as the risk factors of relapse, so as to provide a basis for formulating measures to reduce the relapse rate.

Methodology/Principal findings: Based on the data of cases and annual report data collected from the national Leprosy Epidemic Management Information System (LEPMIS), the author divided patients with recurrent leprosy into two groups: leprosy relapse cases after MDT and leprosy relapse cases after dapsone monotherapy. In this retrospective study, leprosy relapse cases after MDT were defined as the exposure group,while relapse cases after dapsone monotherapy were defined as the control group. The average annual recurrence rate of the exposure group and the control group was compared, so as to distinguish the difference in the recurrence rate of the two treatment regimens.

A total of 125 leprosy relapsed cases after MDT treatment were reported in Yunnan province from 1990 to 2020. Among them, 119 cases could be analyzed with detailed data. And from 1959 to 2020, a total of 1230 leprosy relapsed cases after dapsone monotherapy were reported in Yunnan Province, among which 517 cases could be analyzed with detailed data.

Conclusions/Significance: The average annual relapse rate after MDT was significantly lower than that of after dapsone monotherapy, and the treatment efficacy of MDT was significantly better than that of dapsone monotherapy. The longer the survival time after cure, the lower the relapse rate was. "

Keywords: Leprosy, MDT, Relapse

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DISABILITY AND REHABILITATION

#0361/ ILCABS19

LEPROSY: ASSISTIVE TECHNOLOGY RESOURCES TO PREVENT, MINIMIZE AND REHABILITATE PHYSICAL DISABILITIES.

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Introduction-Objective: Leprosy is an infectious, chronic disease with dermatologic/neurologic signs, causing physical impairments in the eyes/hands/feet. In the last 5 years, 32% of patients developed deformities. 59 thousand people in Brazil living today with disabilities caused by leprosy. Materials and assistive technology (M&AT) devices help rehabilitate morphological changes and provide functionality/independence in routine-daily activities. The objective is to implement Action and donate M&AT to individuals who have/had leprosy, filling a gap in the public-health-services in Brazil.

Materials-Methods: Physicians, Occupational-Therapists, Physiotherapists, and Nurses who assist people who have/had leprosy complete a form on the site. Upon receipt of the form, the material is sorted and sent a free of charge to the address indicated in the registration. Professional who requested the materials guides patients so he/she can efficiently use the materials. Results: From August 2021 to March 2022 113 men (64.2%) and 63 (35.8%) women were reached: 10 were paucibacillary and 166 multibacillary. The mean age 52.7 years (youngest 11 and oldest 92 years old). Materials were requested by 43 professionals, 14 nurses (32.6%), 14 Occupational-Therapists (32.6%), 10 Physiotherapists (23.3%), and 5 physicians (11.5%). In seven months 1404 M&AT devices were donated across 13 (48.1%) states in Brazil. The most requested were: thermal-glove (n=179), grip-aid-in-strips (n=155), eye-drop-lubricant (n=102), silicone-sponge (n=99), sunglasses (n=98), objects (n=92) and polyamide-spoon (n=74). Most frequent injuries/alterations/sequels were: decrease/loss of sensitivity cornea, palms, and/or soles; movable and/or rigid-claw-fingers, lagophthalmos, foot-drop, nasal dryness, obstruction in breathing, perforation nasal septum, and neuritis.

Conclusion: Materials donated are not covered by Brazilian-Public-Health-System and patients and/or health services are unable to acquire them, due to cost and retail purchase difficulty. The Action proved to be promising and collaborates with the third pillar Global Leprosy Strategy 2021-2030 which deals with preventing new disabilities, offering functionality in daily-activities, and improving quality-of-life of patients.

Keywords: Assistive Technology, Prevention, Quality of Life, Disabilities, Rehabilitation

#0362/ ILCABS41

MOBILE (M-HEALTH) IN FACILITATING TREATMENT ADHERENCE AMONG THE LEPROSY AFFECTED

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Introduction: The rapid development in telecommunication sector across the globe has revolutionized communication networks even in the rural areas. To improve treatment adherence, compliance and self-care,

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mobile handsets (non android) with facilities to send and receive short message service (SMS) were provided to individual patients at a tertiary referral hospital in India.

Objectives: Design and develop appropriate self-care tools and strategies to be implemented through mobile (devices) technology. Analyse and document the reasons that are hindrances for patients to adhere to the prevention and early reporting of impairments at their homes.

Materials & Methods: Unmatched Case Control Study – Unequal allocation of the subjects were done in recruiting both the cases and the control group. In the intervention group, (n=54) were new leprosy affected people visiting the institute's OPD for the 1st time to whom individual mobile handsets were given. In the control group, (n=108) were new leprosy affected people visiting the institute's OPD for the 1st time for whom the routine leprosy intervention is given.

Results: Defaulters were significantly low in the intervention group (n=54) compared to the control group (n=106). The defaulters were 3 (5%) in the intervention group and 41 (48%) in the control group. The average delay for treatment were 14 days in the control group and 101 days in the intervention group. Worsening in the EHF score for the intervention group is 31(29%) and for the control group it is 8 (14%)

Limitations: Few patients do not want them to be disturbed (Privacy) through phones

Conclusion: Through the study telecommunication devices were utilized to impart self-care and improve treatment adherence among the leprosy affected. IEC strategies specific for mobile users (Short videos, message feeds at specific timings) were developed. M-health applications for leprosy affected patients were developed.

Keywords: M-Health, Leprosy, Disability, Self-Care

#0363/ ILCABS45

A FOLLOW-UP STUDY OF THE TOE-WEB TRANSPOSITION FLAP AND EXTENSOR TENOTOMY TO PREVENT RECURRENCE OF THE ULCER OF THE BIG TOE BASE IN INSENSITIVE FEET

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Introduction: Between the years 2019 and 2021, (over a three year period) in our hospital, we have seen 148 ulcers of the insensitive foot which resulted in soft tissue defects which could be reconstructed with soft tissue flaps. 19 of these patients (12% of these patients had a defect under the interphalangeal joint of the big toe.

Objective: The study was done to follow up cases who underwent a toe-web transposition flap and extensor tenotomy to off-load stresses at the base of the big toe and prevent recurrences.

Patients and methods: 11 patients underwent the procedure in an attempt to cover the wound and prevent recurrence. All of them, were given customized protective footwear, which helped offloading stresses from the site of the flap.

All those who underwent the procedure were followed-up for a period of 1 to 3 years. They were assessed for recurrence, period interval between the time of wound healing and recurrence, donor site morbidity, cause of

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recurrence (walking too early after surgery, ill fitting footwear etc), whether there was worsening of the status of the toe necessitating amputation of the toe, any further surgeries required for salvage of the toe.

Results: Two recurrences were encountered. One recurrence was encountered in a patient who had started walking even before the flap wound had healed, causing wound dehiscence. One had a recurrence on the flap at the same site of the previous ulcer one and half years after wound healing.

Conclusion: The toe web transposition flap combined with extensor tenotomy is a useful flap and is an easy and simple procedure and is useful to prevent recurrence of ulcers occurring at the base of the big toe . It also helps prevent interphalangeal joint disintegration and amputation of the big toe.

Keywords: Ulcer, Flap, Recurrence

#0364/ ILCABS86

REDUCING THE IMPACT OF NTDS THROUGH WOMEN LED WASH INITIATIVE IN JAGRUTI BIHAR, INDIA

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Background: NTDs are poverty-related communicable diseases, termed 'neglected' because they receive less public health attention and fewer public resources than other communicable diseases. NTDs not only arise in poverty but also accelerate poverty due to their chronic and debilitating effects. Despite the fact that NTD transmission is closely linked to poor Water, Sanitation and Hygiene (WASH) conditions among populations in some of the world's poorest places, little emphasis is given to build strategies that integrate WASH with NTD prevention.

Objectives: To reduce the risk and negative impact of NTDs through women-led initiatives for WASH behavior change and NTD prevention and care among vulnerable communities in 130 villages of Samastipur district, Bihar.

Methods: In 2021/22 Jagruti project has recruited and trained 130 women on the integration of WASH and NTD prevention and care management, WASH rights and community mobilization. Community Resource Persons (CRPs) conducted regular household visits to demonstrate proper hand washing, and NTD self-care.

Results: A total of 3566 people with NTDs (7.3% leprosy, 92.7% Lymphatic Filariasis) were trained on home based self-care practices and WASH related behaviors. Of them, 2210 (62%) practice frequent self-care and adhere to WASH behaviors in their daily lives. A total of 163 (65%) persons reported ulcer healing, 1067 (63%) reduced acute attacks, and 1175 (71%) healed entry pints. 2282 (64%) persons reported fewer man days lost. 7105 Household members were linked to schemes of safe drinking water, whereas 58 persons with G2D were linked to disability compensation systems.

Conclusion: Advocacy by women in the community is an effective and sustainable way to improve WASH and NTD especifically leprosy and LF services while increasing confidence to hold the local government accountable.

Keywords: Key words- NTD- Neglected Tropical Diseases, WASH- Water Sanitation and Hygiene, CRP-Community Resource Person

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#0365/ ILCABS137

SUSTAINING RCS AT SECONDARY LEVEL HEALTH FACILITIES IN ODISHA, INDIA

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Background: Reconstructive surgery (RCS) is an important component of leprosy services. In the past this service was confined to limited tertiary health facilities and NGO institutions. LEPRA Society, ILEP Coordinator and has extensive experience providing RCS services in Odisha. Following the integration of the vertical leprosy programme (NLEP) into the General health system (GHS) in 2004, the LEPRA Society attempted to strengthen the state referral system through a project.

Objective: To increase the capacity of health workers in RCS at the secondary level health facilities

Methods: Twenty government surgeons were taught in RCS, first at tertiary level centres and subsequently at secondary level centres, on drop-foot, claw fingers and thumb, lagophthalmos, claw toes, and wrist-drop by experienced professionals. The concept was first implemented and sustained at secondary level health facilities-Leprosy Home and Hospital in Cuttack, Mission Hospital in Bargarh, and Jharsuguda District Hospital, before being expanded to thirteen other secondary health facilities.

Results: A thorough assessment of beneficiaries was done since the beginning of RCS at secondary centres of persons with more than one year of operation (each beneficiary once for each intervention) in 2011-12 of 314 cases, 2013-14 of 155 cases, 2015-16 of 113 cases and in 2017-18 & 2019-20, 100 cases in each year respectively by the trained surgeons, physiotherapists and sociologists. The results are analysed on the Palande scale and corrective actions are taken for better results and sustainability of the RCS activity in the State GHC system.

Conclusion: Secondary care centres can undertake RCS activity without any hurdles provided proper training for staff and operation theatre equipment is given. Such centres are more accessible to beneficiaries and GHC staff. 'Good' results in hand surgeries are assured by proper selection of beneficiaries, pre-operative preparations, meticulous post-operative management and ensuring regular follow-up.

Keywords: RCS, Disability, Health facilities, Sustainability

#0366/ ILCABS138

ORGANIZING AND MANAGING A PROGRAMME FOR SELF-CARE IN LEPROSY

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Self-care does not exist independently of the broader social and political environment. Thus, concerted action is required across a system in order to initiate, enhance and sustain self-care. Individuals who practise self-care are often supported by peers in self-care groups or by family members.

The purpose of this article is to provide an organisational framework that offers direction to health services and Non-Governmental Organisations (NGOs) who wish to promote effective self-care. To that end, we

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describe the systems level or organisational principles that are necessary, albeit not sufficient, conditions for the promotion of effective and acceptable self-care.

We conceptualise this system across three 'levels'. The first (macro) level is that of the policy and funding environment—the 'organising authority', such as a Non-Government Organisation (NGO) operating within a government leprosy programme. The organising authority must set the stage by mobilising resources in terms of people, facilities, equipment and information systems. The second (meso) level involves mobility of resources to translate upstream policy into downstream action. This bridging task typically falls to 'facilitators'; people who link the organising authority to the community. The third (micro) level involves peer leaders and individuals who are affected by leprosy who must be enabled to learn and practise self-care as part of their daily lives.

Keywords: Self-care, Ulcers, Organisational, Health services

#0367/ ILCABS167

THERMOPLASTIC THUMB TUCK-IN SPLINT IN MANAGEMENT OF THUMB EXTENSOR INDICIS PROPRIUS (EIP) TRANSFER IN LEPROSY

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Introduction: Splints are an integral part in hand rehabilitation. EIP tendon transfer is a common choice for correction of thumb paralysis due to median nerve impairment in leprosy. Thumb tuck-in splint among other splints plays an important role in enhancing thumb abduction and opposition function post EIP transfer in leprosy.

Objective: To study the long-term benefits of using Thumb tuck-in splint post EIP transfer in terms of quality of opposition.

Patients /Material and Methods: All the patients underwent Extensor Indicis Proprius (EIP) tendon transfer during January 2018 to February 2022 were included in the study. The pre-operative, post-operative and follow up assessments were recorded in the standardized Hospital management information system of the hospital. As part of standard protocol of post EIP tendon transfer, immediately after opening the spica cast, Thumb tuck-in splint was made using thermoplastic materials and continued for use until 3 months post operatively.

Results: A total of 35 patients (19 Male and 16 Female) underwent EIP tendon transfer during the study period and out of which 19 had 3 months follow up records. The quality of opposition (excellent and good) improved from 5.7% at pre-op to 74.3% at post-op and it was 68.4% at 3 months follow-up after completion of post-operative physiotherapy. Active web space angles, 60% poor scores during pre ops were improved to 51.4% excellent in post ops and 84.2% in follow up. There was a corresponding improvements in the functional tasks assessed.

Conclusion: The provision of custom made thumb tuck-in splint using thermoplastic have enhanced the thumb abduction and opposition as well as functional aspects of Thumb. Hence, we recommend for use 3 months or longer in post operative therapy protocol.

Keywords: Extensor Indicis Proprius Transfer, Thermoplastic, Thumb Tuck-in Splint, Opposition, Therapy Protocol

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#0368/ ILCABS172

SCENARIO OF LEPROSY AND PATTERN OF DISABILITY IN POST-ELIMINATION ERA: A SEVEN YEAR STUDY FROM A TERTIARY CARE HOSPITAL OF KASHMIR VALLEY

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Introduction: Leprosy can have a significant impact on the quality of life (QOL) of the affected person owing to the chronic nature, disabilities and deformities associated with the disease. A high degree of social stigma in a conservative place like Kashmir further complicates the problem. This has necessitated the need to revisit realms of disabilities in leprosy in our region. Aim of study: To understand the profile of leprosy patients, categorize the pattern of disabilities and assess its impact on the QOL of persons affected with leprosy. Methods: This cross-sectional study was conducted in a tertiary care hospital, over a period of 7 years. All patients diagnosed with leprosy were included in the project following an Institutional ethical committee clearance. Detailed history followed by a meticulous examination was done with distinctive attention to recording of disabilities. Grading of disabilities was done using the world health organization (WHO) grading of 1988. The assessment of QOL was done using WHOQOL-BREF scale. Out of 90 cases, 42 patients (46.67%) were found to suffer from a total of 72 disabilities with majority suffering from more than one, averaging 1.7 disabilities per person. 48 patients (53.33%) did not have any disability. Fourteen cases (15.56%) had grade 1 disability while grade 2 and grade 3 disability were seen in 23 (25.56%) and 5 (5.55%) cases respectively. The assessment of QOL using WHOQOL-BREF scale demonstrated the quality of life to be worst for the physical domain (median 42) followed by environmental (median 48), global (median 49), psychological (median 56) and social relations domain (median 57). Conclusions: Disabilities and deformities are commonly encountered in our leprosy patients and can have a significant physiological, psychological, economic and social impact on the patient. The disease has a significant impact on the QOL of patients contrary to previous beliefs.

Keywords: Leprosy, Post-elimination era, Disability, Stigma, Quality of life

#0369/ ILCABS183

3D PRINTING TECHNOLOGY IN LEPROSY REHABILITATION

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Introduction: 3D printing technology developed in 1983 has diversified applications in fields like engineering, automobile, fashion design, medical, Games, entertainment and Rehabilitation. Since 2014 onwards there is much applications in hand splinting. Since 2020, our facility has adapted this Novel technology for the rehabilitation of person affected by leprosy in overcoming stigma and enhancing dignity.

Objectives: To highlight the various possible applications of using 3D printing technology for the rehabilitation of leprosy affected persons.

Methodology: The 3D printing goes through 4 stages like Scanning, Designing, Slicing and Printing. 3D Scanning is to get the details for the measurement and can be replaced by manual measure using vernier

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caliper. Then designing the splints using CAD software. Then G coded using slicing software. Finally, the g code is copied in SD card to be fed into 3D printer and ready for print. Based on the purpose of the function the choice of materials varies like PLA and ABS they are hard and rigid materials used in making hand splints and adaptive devices. Whereas, TPU is flexible and soft materials used in making finger prosthesis and foot insoles.

Results: We have 3D printed 83 splints in 2020 and 271 splints in 2021 and made various hand splints like Anti-swan neck splints, Thumb IP Block splint, finger sleeve splints, Buddy splints, Finger Prosthesis, Foot insoles and Build up handle, adapted pen holder etc for the rehabilitation of person affected by leprosy. The 3 D printed splints are customized, aesthetically designed; light weighted, durable and comfortable to wear. We have observed 90% of the users are highly satisfied with the design and using for routine purpose.

Conclusion: This technology if used wisely and creatively can benefit many clients in preventing deformities and reducing stigma.

Keywords: 3D Printing, Splints, Adaptive device, Person affected by Leprosy

#0370/ ILCABS193

A COMPARATIVE STUDY TO ASSESS THE EFFICACY AND SAFETY OF AUTOLOGOUS WHOLE BLOOT CLOT DRESSING AND AUTOLOGOUS PLATELET RICH FIBRIN MATRIX(PRFM) DRESSING IN CHRONIC NON-HEALING ULCERS IN HANSEN PATIENTS

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Introduction: Non-healing ulcers in Hansen disease are a major cause of disability. Chronic non-healing leg ulcer is defined as the "loss of skin and subcutaneous tissue on the leg or foot, which takes more than 6 weeks to heal. They are challenging to manage and cause considerable impact on personal, professional and social levels. Autologous PRFM and blood clot matrix is a simple and cost- effective method which provides necessary growth factors that enhance tissue healing.

Objectives: To compare the efficacy and safety of the continuous weekly application of the whole blood-clot matrix and PRFM in management of chronic non-healing ulcers.

MATERIALS AND Methods: A total of 16 Hansen patients with chronic non-healing ulcers were included in the study which were divided into two groups and informed consent was taken. One group received PRFM dressings at weekly intervals for maximum of six sittings. Another group received blood clot product and covered with primary and secondary dressings which is repeated every 5 to 9 days for up to 12 weeks.

Results: In PRFM dressings the mean percentage improvement in the area was 85.25% and the volume was 97.74% at the end of third sitting. In blood clot product dressing mean percentage improvement in the area was 78% and the volume was 82% at the end of six sitting.

Limitations: This study was limited by small sample size.

Conclusion: PRFM dressing of leg ulcers was better than whole blood clot dressing as it leads to early reduction of ulcer size and enhances rate of wound healing. It is safe, simple and inexpensive method.

Keywords: Hansen, Chronic non-healing ulcers, PRFM, Blood clot

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#0371/ ILCABS199

AN INDIVIDUAL RANDOMIZED EFFICACY TRIAL OF AUTOLOGOUS BLOOD PRODUCTS, LEUCOCYTE & PLATELETS RICH FIBRIN (L-PRF) TO PROMOTE ULCER HEALING IN LEPROSY (TABLE TRIAL).

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Introduction: Leprosy is curable with multidrug therapy and treatment in the early stages can prevent disability. However, local nerve damage can lead to injury and consequently recurring and disfiguring ulcers.

Objectives: The aim of this study is to evaluate the treatment of leprosy foot ulcers using an autologous blood product; leukocyte and platelet-rich fibrin (L-PRF) to promote healing.

Materials and Methods: Consenting participants (n=130) will be individually randomized in a single-blinded, controlled trial. Participants will be 18 years of age or older, admitted to the hospital with a clean, dry and infection-free chronic foot ulcer between 2 and 20 cm2 in size. The intervention involves the application of leukocyte and platelet-rich fibrin (L-PRF) matrix on the ulcer beds during twice-weekly dressing changes whereas the controls receive saline dressings. Primary outcomes are the rate of healing assessed using standardized photographs by observers blind to allocated treatment, and time to complete re-epithelialization. Follow-up is at 6 months from randomization.

Results/Trial Update: A total of 283 participants have been screened and the target of 130 participants have been enrolled by 26th May 2022 despite the challenges of COVID19 pandemic. Six months follow up have been completed in 78 participants, and all further follow-ups will be completed by the end of November 2022.

Conclusion: This research will provide valuable information on the clinical and cost-effectiveness of L-PRF in the treatment of leprosy ulcers. An additional benefit is the evaluation of the effects of treatment on the quality of life for people living with leprosy ulcers. The results will improve our understanding of the scalability of this treatment across low-income countries for ulcer healing in leprosy and potentially other conditions such as diabetic ulcers.

Keywords: Leprosy, Ulcer, Wound-Healing, L-PRF, Autologous Blood Products

#0372/ ILCABS225

FEASIBILITY AND FIDELITY OF HOME-BASED SELF-CARE PROJECT TO PREVENT DISABILITIES AMONG PEOPLE AFFECTED BY LEPROSY IN LEPROSY RECOVERED VILLAGE IN TUBAN, INDONESIA: AN IMPLEMENTATION RESEARCH

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Introduction: Self-care is an efficacious intervention to prevent disability among people affected by leprosy. As COVID-19 pandemic happened, communities could not access health services for self-care treatment, putting them at higher risk of manifesting disabilities.

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Objective: This study assessed feasibility and fidelity of Home-Based Self-Care project. The project focused on empowerment by giving self-care training to volunteers who later would deliver self-care packages to people affected by the leprosy community.

Methods: This study used mixed methods to implement the evaluation within the action research study. Six people were recruited using purposive sampling as volunteers, and 60 people affected by leprosy were recruited as participants. Qualitative data about feasibility and fidelity were taken using in-depth interview and focus group discussion, later analyzed using thematic analysis. Quantitative data about fidelity was taken using a checklist, knowledge and self-care practice before and after implementation were taken using questionnaires, later analyzed descriptively and using t-test analysis.

Results: The project was well- fitting with the feasibility construct of practicality and trialability. However, factors such as difficulty in using tools (latex gloves, scissors, and roll plaster to cover wounds), and lack of trust from the community were affecting the actual fit construct. Volunteers were found not to strictly adhere to the planned intervention, in which mostly only help to do self-care but not the self-care education. There's a significant difference between level of knowledge before and after home-based self-care implementation ($p<0.0001$).

Limitation: Data for self-care practice before and after implementation were not collected as the time was limited.

Conclusion: Home-Based Self-Care project was proven to be feasible to empower the community in implementing self-care. Further strategy is needed to improve the actual fit and fidelity of the project to the real-life situation.

Keywords: Self-Care, Leprosy, Project, Empowerment, Feasibility, Fidelity

#0373/ ILCABS236

PATIENTS' PRE AND POSTOPERATIVE PERCEPTIONS OF RECONSTRUCTIVE SURGERY IN LEPROSY

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Introduction: Health campaigns and health education programs attempted to create better awareness and health personals motivate patients to take advantage of available health facilities such as corrections of disabilities in leprosy by reconstructive surgery. Reconstructive surgery has made significant advances in correcting deformities in leprosy but in spite such available facility the patients needing correction for their deformities have not shown much intrest and there seems hesitant and unenthusiastic to take advantage of this facility. Several studies have addressed the issue of stigma and attitudes of patients and society to leprosy, but few have ascertained the perceptions of patients towards surgical corrections of their deformities.

Objectives: This present study is undertaken to determine the perceptions of patients who have had reconstructive surgery for hand, foot in terms of fulfilment of their preoperative expectations on functional and cosmetic restorations.

Materials and methods: 100 patients who have had reconstructive surgery for Ulnar and ulnar–median paralysis, foot-drop, was under taken to assess patients' perceptions to reconstructive surgery, who underwent

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reconstructive surgery during 2017 to 2021 at 100 bedded referral hospital at Hyderabad, Telangana, India, were interviewed using a Visual Analogue Scale on their pre-operative expectations and satisfaction after surgery.

Each patient was interviewed using a specially prepared questionnaire, by a qualified and trained paramedical worker

Results: Nearly 60% had their expectations fully met, another 20% partially, and about 15% perceived benefits more than expected. Less than 5% were not satisfied. Results are presented for surgery on hand, and foot among males and females.

Conclusion: Health education messages must emphasize and highlight these facts. Patients who have undergone successful surgery be encouraged to convince others to obtain similar benefits. Feedback from patients is important not only to motivate other patients, but also to encourage surgeons to take up reconstructive surgery more actively.

Keywords: RCS, Pre & post Op Perceptions, Awareness, Health education.

#0374/ ILCABS252

FEASIBILITY AND EFFECTIVENESS OF TOTAL CONTACT CAST IN THE MANAGEMENT OF CHRONIC PLANTAR ULCER IN LEPROSY AT THE OUTPATIENT DEPARTMENT.

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Introduction: Leprosy is still the cause for distress to persons affected especially those with disabilities. Plantar ulcers are chronic problems among affected that cost them mental-social-economic life. Total Contact Cast (TCC) is known as an effective intervention in the management of chronic plantar ulcers.

Objectives: To assess the feasibility and effectiveness of TCC in the management of chronic plantar ulcers in leprosy patients as an out-patient department (OPD) intervention.

Material and methods: 40 leprosy affected with chronic plantar ulcers those were managed with TCC (mini cast / below knee) using Plaster of Paris is the base of the study. TCC with window was used in complicated ulcers.

They were treated at 14 Leprosy Referral Centre (LRCs) linked to OPDs of secondary level public health facilities in Maharashtra.

Among them 60% were male; 68% with age 40+ years; 83% had simple ulcers; 60% had ulcers on the fore-foot; 45% had duration 5+ yrs.

Patients were monitored for the complications during the immobilization. The status of healing was clinically assessed on removal of the cast after average 6 weeks.

Operational aspects and learnings are discussed in the paper.

Results:

· 31 (78%) had full compliance to TCC and 9 patients removed the cast prematurely.

· 26 (84%) out of 31 patients showed complete healing of ulcers; recurrence was negligible with 1+ yr follow up.

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· 18 (69%) out of 26 patients showing complete healing had ulcers in forefoot and had < 5 year duration.

Limitations: This is a retrospective study with relatively small population may influence the interpretation of the results.

Conclusion: TCC is a feasible and effective OPD level intervention in management of chronic plantar ulcers especially among leprosy affected with simple ulcers. And, therefore, recommended as an OPD level right-based referral service in secondary level public health facilities.

Keywords: Plantar ulcers, Total contact cast, Disability, Ulcer Care Service, Leprosy Referral Centre, Leprosy affected

#0375/ ILCABS280

SUSTAINING DISABILITY CARE IN GENERAL HEALTH CARE SYSTEM THROUGH REFERRAL CENTRES IN ODISHA, INDIA

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Introduction: LEPRA Society, one of the ILEP partners with expertise in leprosy related disability care services in some states of India, ventured for strengthening the health care system in disability care services in Odisha across the state, after successful implementation of District Technical Support Team (DTST) project (2004-07) through a project Technical Support Team and Strengthening Referral System,

Objective: To determine the extent to which the referral centres established and managed by ILEP partners can meet and sustain expectations in the state of Odisha.

Methods: A total of 10 Referral Centres (RCs) have been established to cover 30 districts at district hospitals having Medical Officer, one physio-technician & one shoe-technician at each centre to cope with the needs of leprosy cases with complications referred from CHCs. On the day of the weekly DPMR clinics, the MO & PT visit the CHCs, train the staff of the CHCs on disability care and complication management and if need be refer to RCs. After successful implementation of DPMR clinics at CHCs, the post MO at RC made redundant and the number of RCs reduced to six.

Results: The first phase (2007-15) included capacity building for DPMR staff at CHCs and districts and complication management at RCs. A total of 35,282 beneficiaries attended, with 2854 receiving reaction treatment and 24319 receiving customised footwear. In the second phase (2016-22), similar services were provided at six other RCs, with 58,736 beneficiaries attending, 4,439 receiving reaction treatment, and 11,990 receiving customised footwear for long-term DPMR services.

Conclusion: In the integrated setup of NLEP programme, referral centres in Odisha played a critical role in identifying, assessing, and providing expertise services to people with disabilities. To maintain POD services at the primary level, CHC staff must be re-oriented on a regular basis, so that DPMR clinics remain at

Keywords: DPMR, Health system, Health facilities, POD

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#0376/ ILCABS297

A CROSS SECTIONAL STUDY ON CLINICAL PATTERN OF DEFORMITIES AND DISABILITIES IN LEPROSY PATIENTS.

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae, that can affect and damage peripheral nerves causing impairments(deformity) and disability. The disease is feared for the deformities and disabilities it produces in its host. Leprosy is associated with social stigma, and patients suffer social discrimination because it often leads to visible physical deformities.

Aims and objectives:

1. To estimate the prevalence of disabilities and deformities in leprosy patients.

2. To assess the clinical pattern of disabilities and deformities in leprosy patients.

Materials and methods: 100 leprosy patients visiting dermatology department of tertiary care hospital and leprosorium were included after taking informed consent. In each case, name, age, gender, occupation, detailed history, thorough general physical, local and systemic examination were recorded with reference to clinical features of leprosy by dermatologist. WHO disability grading was used for clinical assessment tool.

The higher incidence of leprosy and its deformities and disabilities were seen labourers (42%)

Results: Males constituted 76% of leprosy patients. Majority of patients belong to the low socioeconomic status (47 %) and labourers (42%). Lepromatous leprosy (LL) was the most common spectrum (63 %). Deformities were most commonly observed in LL patients. Grade 2 (62 %) disability was higher than grade 1. More number of deformities (37%) are seen in patients with leprosy > 10 years of duration. Most common deformities of hands, feet and face were claw hand (53%), ulceration of feet (54%) and madarosis (41%) respectively.

Limitations: Relatively small sample size.

Conclusion: The preponderance of male patients could be attributed to more environmental exposure and physical activity, thus more likelihood of getting exposed to infections. The higher incidence of leprosy, its deformities and disabilities were seen in labourers because of their involvement in heavy work and they are more prone for injuries.

Keywords: Leprosy, Deformities, Disabilities.

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#0377/ ILCABS312

CHANGING THE PERSPECTIVE OF RECONSTRUCTIVE SURGERY ON THE LIVES OF LEPROSY PATIENTS IN RURAL INDIA AND THE ROLE OF THE GENERAL HEALTH SYSTEM IN PROVIDING PHYSIOTHERAPY, SOCIO-ECONOMIC SERVICES

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Introduction: The role of rehabilitation of patients with the complications of Leprosy involves not only reconstructive surgery (RCS) but also physiotherapy and socio-economic rehabilitation. This is a prospective study to evaluate the outcome of RCS in patients with the complications of leprosy in rural Assam; the impact of effective physiotherapy and socio-economic rehabilitation through the health providers in Assam.

Objectives: To evaluate

1. Functional results of the RCS.

2. Impact on the Psychosocial status of patients who had undergone RCS.

3. Operational activities to improve results of RCS

4. Modifications needed with RCS to improve functional and psychosocial outcomes.

Methodology: A total of 166 consecutive patients with complications of leprosy in need of RCS were recruited (Male-93, Female-61, Child-12) over 10 years (2012-2022). 220 RCS procedures were performed (Hand-103, Foot-106, Eye-11). A questionnaire tool to evaluate the functional and psychosocial outcomes of the patients was used after every 5 years of the RCS procedure. The first assessment was done for 44 patients out of 131 in the year 2018 and the second in 2022.

Results: Among 44 patients evaluated in 2018: 25 reported satisfactory outcomes,16-fair, and 3-failures. The rest of the results will be discussed at the ILC 2022.

Conclusions: 1. There is a need for the Leprosy Control System to initiate a yearly follow-up on RCS patients, especially Physiotherapy services which were missing.

2. Proper initiation and implementation of Socio-Economic rehabilitation services.

3. Lifestyle of patients had adversely affected the RCS interventions.

4. There are few modifications needed for patient-specific surgical procedures

Limitations: It was not possible to trace all the 166 patients, since some of the subjects migrated, got married, were not willing to participate in the study, and a few died.

Keywords: Reconstructive Surgery in Leprosy, Leprosy control, Claw hand, Foot drop, Lagophthalmos, Rural leprosy programme

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#0378/ ILCABS338

EFFECTIVENESS OF A FIELD-BASED DISABILITY CARE PROGRAMME IN THE DISABILITY STATUS OF LEPROSY PATIENTS IN RURAL AREAS: A LONG-TERM FOLLOW-UP ASSESSMENT

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Introduction: Persons with leprosy related disabilities need to practice self-care for a lifetime to prevent worsening of disabilities. However, access to disability care and services, especially in rural areas, is challenging due to non-availability of services and logistic constraints. A study was done to compare the changes in disability status following provision of sustained leprosy disability services.

Objective: To evaluate the effectiveness of a field-based disability care programme in the disability status of leprosy patients living in remote rural areas.

Material and methods: 400 leprosy patients with grade 2 disabilities (G2D) registered during 2013 to 2022 and provided disability care and services in the field by trained health workers were evaluated to monitor the changes in the disability status over a period. Data on the type of disabilities including WHO disability grading and EHF score at registration and reassessed in 2021-22 was analysed and compared with the baseline.

Results: Of the 400 patients, 55% were males and 41.3% were aged between 40 to 60 years. 88.5% were G2D and 72% had hand deformities. Trophic ulcer was the commonest (34.8%) followed by claw hands (29.8%). Overall, 23.3% showed improvement in the disability status of which, 67.7% were ulcers and 20.4% were claw hand. 10.8% G2D cases changed to G1D. 8.3% cases showed decline in EHF score.

Limitations: This observational study focussed on physical disabilities and other factors such as activity limitations and social participation were not assessed to measure the impact of variations in the disability status.

Conclusion: A field-based disability care programme is a sustainable and feasible strategy for provision of services and promoting self-care among leprosy patients in rural areas. Considering the magnitude of the disability burden due to leprosy long-term follow-up is necessary to monitor factors associated with development of disabilities and the availability of POD services.

Keywords: Disability, Field-based, POD, Long-term, Assessment

#0379/ ILCABS363

IMPACT OF BASIC PSYCHOLOGICAL SUPPORT ON STIGMA AND MENTAL WELLBEING OF PERSONS WITH DISABILITIES DUE TO LEPROSY AND LYMPHATIC FILARIASIS

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Introduction: Persons with disabilities due to leprosy and lymphatic filariasis are known to suffer from stigma and discrimination; many of them have poor mental wellbeing. However, there is limited evidence of a community-based intervention for addressing the issue.

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Objective: To provide proof of concept that basic psychological support can reduce stigma experience and improve mental wellbeing and participation among persons with LF or leprosy related disabilities.

Methods: The WHO Psychological First Aid (PFA) toolkit for Ebola was adapted for use with chronic conditions such as NTDs. The adaptation was done by the study team in consultation with global experts. The adapted version is called Basic Psychological Support for persons affected by NTDs (BPS-N). BPS-N was provided through 15 peer supporters to 87 persons with disabilities due to leprosy and lymphatic filariasis. Standard scales were used to measure stigma (SARI Stigma Scale), mental wellbeing (Warwick-Edinburg Mental Wellbeing Scale (WEMWBS)), depression (Patient Health Questionnaire 9 item (PHQ-9)) and participation (Participation Scale Short Simplified (PSSS)) of the clients before and after the intervention.

Results: After 3 months of intervention, the mean of level of stigma decreased from 30.3 to 24 ($p<0.001$); high mental wellbeing increased from 0% to 13.3% ($p<0.001$); moderate to severe depression decreased from 88% to 47% ($p<0.001$). There was no significant change in participation restrictions (87% vs 92% ($p=0.497$)).

Limitations: The study was carried out with a limited number of clients.

Conclusion: The study provides the proof of concept that the BPS-N intervention administered by peer supporters can achieve substantial improvements in levels of stigma, mental wellbeing and depression in persons with disabilities due to leprosy or LF. However, this was based on a pre- and post-intervention design and needs to be tested in a randomized controlled trial.

Keywords: Mental wellbeing, Peer support, Basic psychological support, Disability, Leprosy, Lymphatic filariasis

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#0380/ ILCABS388

ROLE OF FLUORESCENCE IMAGING DEVICE IN THE MANAGEMENT OF TROPHIC ULCERS IN LEPROSY

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Introduction: Patients of Hansen's disease often suffer from trophic ulcers, which are frequently infected. Wound debridement plays an integral part in the management of trophic ulcers. In this study, we use a fluorescence imaging device for targeted wound debridement and to monitor the wound parameters.

Objectives: To compare percentage reduction in ulcer volumes of case ulcers with control ulcers and to evaluate the efficacy of the fluorescence imaging device in targeted wound debridement.

Material and Methods: A point-of-care, non-invasive fluorescence imaging device which combines a proprietary machine-learning algorithm with multispectral imaging was used. It detects and classifies bacteria on the spectral images. It also measures the wound parameters, i.e., length, width and depth.

Three consenting leprosy in-patients, with two trophic ulcers each were selected. The ulcers were labeled as case and control by randomization in each patient.

The controls were first cleaned with normal saline, followed by debridement and betadine dressing.

The cases were first cleaned with normal saline, followed by scanning with the fluorescence imaging device. Targeted debridement of areas showing bacterial growth according to the images generated by the device was done, which was followed by betadine dressing.

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Ulcer parameters were recorded weekly for 8 weeks.

Results: The three patients in the study showed a percentage reduction of 94.4%, 47.4% and 95.2% in the case ulcer volumes respectively. Whereas, in the control ulcers, the percentage reduction was 87.7%, 31.8% and 92.3% respectively.

All three patients showed better percentage reduction in ulcer volumes of case ulcers compared to the control ulcers.

Limitations: Availability and cost of the device.

Conclusion: This study demonstrated the efficacy of fluorescence imaging device in faster healing of otherwise chronic non-healing trophic ulcers. This prevents long term use of multiple antibiotics, thus playing a significant role in reducing antimicrobial resistance.

Keywords: Fluorescence imaging device, Targeted debridement, Trophic ulcers, Leprosy

#0381/ ILCABS407

TEMPORALIS MUSCLE TRANSFER FOR PARALYTIC LAGOPHTHALMOS RECONSTRUCTION IN LEPROSY

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Background: Paralytic lagophthalmos in leprosy can cause ocular complications leading to disability if left untreated in time. Advance age and duration of paralysis of orbicularis oculi significantly increase the risk of ocular complications in an affected person which may result in complete blindness. Hence the surgical reconstruction of lagophthalmos is extremely important in leprosy. Temporalis muscle transfer with autologous tendon graft gives a satisfactory functional restoration.

Objective: To analyze the outcome of patients treated with temporalis muscle transfer and describe the surgical tips and practices to optimize functional outcomes.

Methods: Retrospective chart review of 24 patients (33 procedures) who underwent temporalis muscle transfer with tendon graft (Fascia lata or Palmaris longus) to correct paralytic lagophthalmos from 2009 to 2021. In all patients, diagnosis was made clinically with lid gap measurement during eye closure. Temporalis muscle were functionally intact in all cases and strengthened before the surgical procedure.

Results: Thirty-three temporalis muscle transfer surgeries were performed in 24 leprosy patients between 2009-2021. The average age was approximately 50 years (SD=17, range=17-70 years); and most were males (87.5%). The average duration of lagophthalmos was 5.4 years (SD=6.3, range=0.58-23 years). Lid gap at light closure decreased from 7.9 mm (SD=2.4) before surgery to 2.5 mm (SD=1.9) after surgery ($p<0.0001$). For tight closure, lid gap decreased from 5.0 mm (SD=2.6) to 0.45 mm (SD=1) ($p<0.0001$). Complete light closure (0 mm) was achieved in 27.3% (9/33); and complete tight closure was achieved in 78.8% (26/33) patients. Post-operative complete eye closure was not associated with age, eye-side (left or right), duration of paralysis and pre-operative tight or light lid gap lengths.

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Conclusion: Temporalis muscle transfer to reconstruct paralytic lagopthalmos is minimally invasive and provides good functional results which can be done under minimal local anesthesia and prevents further damage of eyes.

Keywords: Leprosy, Eye, Disability, Lagophthalmos, Tendon transfer, Reconstructive surgery

#0382/ ILCABS412

LANGUAGE NEUTRAL ANIMATIONS AS REMOTE HOME BASED VIDEO INTERVENTION GUIDE FOR LEPROSY MMDP MANAGEMENT: EVALUATING THE CONTENT UNDERSTANDABILITY AMONG COMMUNITY HEALTH WORKERS IN BIHAR, INDIA

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Introduction: Leprosy rarely causes death, but mimics chronic disease conditions by causing lifelong disability, fatigue, blindness, and disfigurement that requires continuous care. Management challenges include multiplicity of local dialects, lack of skills, lack of access to health facilities and resource constraints.

As part of DHARA (Sanskrit for continuous flow)- Digital @ Home based AI enabled Real Time Appropriate interventions for Leprosy, we developed series of language neutral animations on (1) hand/foot exercises; (2) ulcer care; (3) sensory care. DHARA videos were designed to address lack of skills, access and resource constraints –by training local people in communities to provide guidance to people with leprosy in local dialects with supportive animation displayed on a smart phone.

The videos had a set format: (1) step 1 - showing the setting; (2) step 2 – showing the products and activity in animation; (3) step 3 – supporting icon overlay for frequency of activity.

Objectives: 130 women from 130 villages were selected and trained as community health workers (CHWs),to use DHARA for at home demonstration. The training was provided in two rounds – virtual and in person. The study objective was to evaluate if the CHWs can understand, remember and identify the contents and activities of the videos post training.

Methods: Questionnaire with screen shots of the content/ activity was provided post training to 130 women. The responses were recorded on paper and audio recorder.

Results: 70% of questions were answered correctly in the first round of virtual training that improved to over 93% in the second in person round.

Limitations: The study was conducted at one location only and will soon be conducted at multiple locations to explore scalability of the solution.

Conclusion: Language neutral animations on smart phones provided to local women with training can empower resource constrained communities to manage chronic morbidity and disabilities due to leprosy.

Keywords: Language neutral animations, Digital, Interventions

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#0383/ ILCABS413

IMPACT OF A MOBILE THERAPY UNIT APPROACH FOR INDIVIDUALS WITH LEPROSY AND OTHER DISABILITIES IN RURAL AREAS IN TAMIL NADU

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Introduction: People with leprosy and other disabilities, especially those living in rural areas, have difficulty getting to therapy centres located at district headquarters. Less awareness of therapeutic services in the community. Community health workers and healthcare professionals have a lack of understanding of leprosy.

Objective: To assess and address the physical and functional needs of people affected by leprosy and other disabilities. To build capacity on POID for medical and paramedical professionals.

Methodology: In 2019, the inclusive empowerment project of The Leprosy Mission Trust India (TLMTI) designed and modified a van with facilities such as electrotherapy equipment, LED monitor (for health education), webcam for telerehabilitation, Mat activities, Exercise therapy, orthotic & Prosthetic, Ulcer care, occupational therapy, and Podiatry. The mobile therapy van travelled to rural areas with a team of PT, OT, P&O, and community workers to provide therapy services. Volunteers, community workers, and health care professionals were all trained to handle leprosy complications and refer patients.

Results: 312 (48%) people with leprosy and 333 (52%) people with other disabilities have accessed mobile therapy van services. 276 people received special footwear, of which 256 (92%) had leprosy and 20 (8%) had other disabilities. 346 people received aids and appliances, 193 (56%) had leprosy, and 153 (44%) had other disabilities. Following the intervention, the FIM score increased by (119-92) and the WHO well-being index score increased by (22-16). 377 (53%) of the 711 people who have received training were Anganwadi workers, 60 (9%) physiotherapists, 141 (20%) occupational therapists, 87 (12%) nurses, and 46 (6%) government health workers.

Conclusion: This mobile therapy unit has ensured rural residents access to therapy services and prompt intervention, as well as promoting their right to health. The government and other non-governmental organisations can adopt and replicate

Keywords: Mobile, Therapy, POID, Leprosy, Model, CBR

#0384/ ILCABS426

THE ASSOCIATION BETWEEN THE LEVEL OF ACTIVITIES OF DAILY LIVING FUNCTION, SAFETY AWARENESS AND IMPAIRMENT STATUS IN PATIENTS ATTENDING A TERTIARY CARE LEPROSY HOSPITAL IN THE TAMIL NADU STATE OF INDIA: A LONGITUDINAL STUDY.

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Introduction: Persons affected by leprosy are screened for activities of daily living (ADL) performance status during their hospital visits. Safety awareness score is not routinely documented in assessment reports and a very limited data is available about the impact of safety awareness on ADL status on a long term.

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Objective: To find out the association between the level of ADL function, safety awareness and impairment status in leprosy patients and also to evaluate the impact of safety awareness on ADL status.

Method: This was a prospective study design done in leprosy patients who were attending routine out-patient department including the physiotherapy and occupational therapy services. ADL and safety awareness assessment were done using the standardized Screening of Activity Limitation and Safety awareness scale (SALSA) at three intervals with six months gap between each assessments and the socio-demographic details along with the impairment score (WHO and EHF) were analysed. Descriptive statistics was used to report the findings and Chi-square tests were used to study the association between ADL, safety awareness, impairment and other demographic factors.

Result: The Data collection is in process and the findings will be presented during the conference. Based on the each assessment outcome, patients were given routine POD interventions for their problems.

Conclusion: Expected outcomes; The association of the cumulative SALSA scores on the safety awareness score & the impairments and change in the mean SALSA scores & safety awareness scores at baseline & their two follow-up visits and the influence of safety awareness on ADL tasks. A better understanding of the association will help in planning, implementing and determining the efficacy of disability programs for leprosy affected patients.

Keywords: ADL, Disability, Safety awareness, POD, Impairment, SALSA

#0385/ ILCABS434

A PROSPECTIVE STUDY ON EFFICACY OF AUTOLOGOUS PLATELET RICH FIBRIN DRESSINGS IN TREATMENT OF NON HEALING TROPHIC ULCERS OF LEPROSY

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Introduction: Trophic ulcers in leprosy create a major physical and social disability to the patients.These ulcers are of great challenge to the treating physicians.Though various modalities of treatment available, none was found to be universally effective.Platelet rich fibrin (PRF) dressing is found to be an evolving cost effective treatment option for trophic ulcer.

Objective: To assess the efficacy of PRF dressing in nonhealing trophic ulcers of leprosy.

Material and Methods: Fifteen leprosy patients with non healing trophic ulcers fulfilling the inclusion criteria were taken into study and treated with PRF dressings.Ten ml of blood was withdrawn and centrifuged at 3000 rpm for 10 minutes from which PRF is prepared and placed over the ulcer bed .The procedure is repeated weekly for a total duration of 4 weeks.The efficacy of PRF dressing was observed based on reduction in volume of ulcer.

Results: Fifteen patients (10 males) with chronic non healing trophic ulcer were treated with weekly PRF dressing for 4 weeks .Mean age of the patient was 51.6 years.Twelve patients had already completed MDT MB and 3 patients were on MDT MB at the time of study.Most common site of ulcer was found be forefoot.Mean ulcer duration was 7.93 months. At the end of 4 weeks,complete healing of ulcer was noted in 66.6%(10 patients),96-99% reduction in volume of ulcer was noted in 13.3%(2 patients), 91-95 %, 86-90%, 80-85% reduction in volume of ulcer was noted in 6.7% (1 patient)respectively in each grade.

Limitations: Long term follow up was not done .

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Conclusion: PRF dressings provide rapid healing of ulcers and found to have a promising role in the management of trophic ulcers in leprosy.

Keywords: Leprosy, Trophic ulcers, PRF, Rapid healing

#0386/ ILCABS447

TOWARDS DEVELOPMENT OF A USER-FRIENDLY MANUAL FOR SELF-CARE IN LEPROSY: AN EARLY INTERVENTION OPPORTUNITY

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Introduction: In low and middle income countries (LMICs) diseases such as leprosy affect the poorest of the poor. Antibiotics can kill the bacteria that cause leprosy, but the problem does not end with chemotherapy. Local nerve damage leads to repeated injury often-times resulting in recurring and disfiguring ulcers. Self-care practice is recommended as a routine way of managment and preventing recurrence. To further promote this, a simple user-friendly pictorial guide named sElf-cARe in LeprosY (EARLY) manual was developed by the researchers in collaboration with relevant stakeholders. The manual is based on the principle of Inspection, Soaking, Scrubbing, Oiling, Dressing and Footwear (ISSOD-F)

Objective: To develop a pictorial self-care manual aimed at promoting ulcer healing, reducing occurrence of new and recurrent ulcers in persons affected by leprosy.

Method: Intervention development team of prospective end users or persons affected by leprosy, researchers, leprosy program and care experts was constituted. The team assembled and worked with three source documents . The team was subdivided into three working groups for source documents review. Items for inclusion were selected and organized into a single draft and finalized through iterative processes. The draft manual was adapted into a pictorial version validated through a pilot study involving the prospective end users.

Results: A manual of sElf-cARe in LeprosY (EARLY) in form of illustrative colour pictures was produced. The pictures depicted steps in self-care routine practices of ISSOD-F.

Limitations: With additional resources the researchers could have included other stakeholders with non-leprosy chronic ulcers in the development of the manual. However we ensured that the most relevant individuals were included.

Conclusion: EARLY intervention development presented a good opportunity for producing a user-friendly pictorial manual for self-care in Leprosy. A trial is ongoing to assess the effectiveness of this manual.

Keywords: Self-care, LMIC, Leprosy, EARLY, ISSOD-F, Ulcers

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#0387/ ILCABS473

WHY PERSON AFFECTED BY LEPROSY DID NOT LOOK AFTER THEIR PLANTAR ULCER?

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Introduction: Plantar ulceration is the most common serious disability in leprosy and is usually caused by a "previous ulcer," and the prevention of the first ulcer must be the priority in any leprosy program. These ulcers usually result from repetitive stress on the foot. High pressures, deformities, and joint limitations increase the risk of ulcers in insensitive feet.

Many programs provide protective footwear to patients, but at what level are this risk group patients identified. People affected by leprosy have been taught how to carry self-care, but a large number are not able to prevent chronic or recurrent ulceration of their aesthetic feet.

Objectives: To investigate factors responsible for the occurrence of ulcers among leprosy patients reporting to the leprosy referral hospitals and the role of associated comorbid conditions as risk factors in ulcers.

Methods: A 3- years retrospective analysis of records of 135 registered leprosy cases admitted between 2019 to 2021 with planter ulcers were studied. Factors predisposing to recurrence, e.g. patient's age, disease duration, ulcer site, ulcer depth and physical deformity (taking into account neuromuscular and skeletal damage) were evaluated.

Results: About two-thirds of the participants were aged 50 and above, of which more than half were illiterates, and 90% were living below the poverty line. Majority of ulcers (51%) were seen on the forefoot as the commonest site; with the head of meta-tarsal bone, followed by calcaneum 28% and great toe 16%.

Limitations: Follow up of the ulcer patients for a cohort analysis is depending on the self-care the patients taken while at home

Conclusion: Identifying the risk factors of ulcers are of profound importance to predict the outcome of plantar ulcers in leprosy patients. The study findings indicate the need for better policies by the leprosy control program for the comprehensive management of plantar ulcers.

Keywords: Disability - a physical or mental condition that limits a person's movements, Senses, Or activities

#0388/ ILCABS485

WALANT TECHNIQUE IN LEPROSY HAND SURGERY

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Introduction: WALANT surgical technique is wide awake local anesthesia no tourniquet. The procedure doesn't require anesthesiologist, is cost effective, no need of preoperartive preparation.

Objective/s: To see the use WALANT technique in Leprosy hand surgery.

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Patients / material and methods: 5 tendon transfer surgery (opponesplasty) and 5 ulnar nerve decompression surgery were performed with WALANT surgical technique. 40-60cc of local anesthetic solution (pre prepared with mixture of in 100cc of normal saline solution, 20cc 2% lidocaine and 1cc 1:1000 adrenaline) infiltrated slowly with 27G needle subcutaneous and waited for 30 to 60 minutes before surgical procedure.

Results: All the patients well tolerated the WALANT procedure with minor complains of pain during first injection and infiltration of anesthesia. Moreover there was no need of tourniquet and preoprtative preparation and cost effective.

Limitations: It is not used in other tendon transfer surgery needing bloodless dissection such as ulnar claw correction.

Conclusion: WALANT is very safe, reliable and cost effective technique in Leprosy hand surgery such as tendon transfer and nerve decompression surgeries.

Keywords: WALANT, Tendon transfer, Nerve decompression, Tourniquet

#0389/ ILCABS506

NOVEL ANTIMICROBIAL APPROACH FOR TREATING INFECTED CHRONIC FOOT ULCERS IN LEPROSY

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Introduction: Biofilm formation is the defense mechanism of pyogenic organisms which infect chronic foot ulcers in leprosy patients. Biofilms are refractory to conventional antimicrobial treatment leading to delayed healing and chronicity. Hence better alternatives to conventional antimicrobial drugs are the need of the hour for treating infected foot ulcers.

Objective: To assess the antimicrobial and antibiofilm activity of natural peptides (bacteriocins) against the pyogenic pathogens infecting the leprosy foot ulcers.

Patients/material and methods: A total of 75 leprosy patients with foot ulcers were enrolled in the study during 2019-20. The wound swabs were cultured for pathogen identification. Known biofilm producers like Staphylococcus aureus and Pseudomonas aeruginosa were considered for in-vitro biofilm activity. This is a work in progress. We could carry out anti-biofilm assays by microtiter plate method using natural peptides (Garvicin KS peptides) plus (Micrococcin P1)

Results: Among 75 patients recruited ulcers from 51 patients were positive for pathogenic bacteria on swab cultures. 22/51 was S. aureus, out of which 77.27% demonstrated biofilms. All biofilm-producing organisms were multidrug-resistant. In vitro assay by bacteriocins demonstrated excellent anti-biofilm activity against all the biofilm-producing isolates.

Limitations: This is an in-vitro study. In-vivo studies are in progress which could give information on clinical outcomes.

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Conclusion: Our results suggest the in-vitro efficacy of natural peptides on biofilm-producing S. aureus and their potential usefulness in the topical treatment of leprosy ulcers.

Keywords: Plantar ulcers, Biofilm, Natural peptide

#0390/ ILCABS531

ROLE OF SECONDARY AND TERTIARY GOVERNMENT HEALTH SERVICE POINTS IN LEPROSY COMPLICATION MANAGEMENT

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Introduction: Annually about 2,500 people require hospital admission due to leprosy complication services provided by 3 Government and 3 NGO managed hospitals. Usually, leprosy complication care is difficult to access due to limited-service provision and distance, which creates delay in service and financial burdens for people with leprosy complications. Govt. secondary and tertiary care hospitals are well equipped and have skilled human resources to manage leprosy complications with quality and easy accessibility.

Objective: Understanding the availability and capability of secondary and tertiary Government services points in dealing with people suffering from leprosy complications.

Materials and Method: The Leprosy Mission International Bangladesh piloted to activate and engage one district general hospital and one medical college of Government in two southwestern districts for providing leprosy complication management services. The project built trust, sensitized local health, and capacitated dermatologists, surgeons and other relevant staff. Project also provided travel cost and additional food support to families if only earning person.

Results: -First time 53 persons (male 51%, female 49%) with leprosy complications received treatment from a medical collage (in-patient 32% and out-patient 68%) and 8 persons (male 75%, female 25%) received treatment from a district general hospital.

-88% received ulcer care and 12% received reaction management services from dermatology and surgery department.

-31 persons (male 55% and female 45%) with leprosy complications received treatment during COVID-19.

-This is the first-time doctors dealt with leprosy complication.

-80% of service users are satisfied with the service received as it reduced burden of distant travelling, financial and mental stress from family detatchment.

Limitations: Pialoting in only two government service points.

Conclusion: Results suggest that if relevant health personnel of Government service points are capacitated, communicated and refer complication management cases they can contribute in reducing burden of people suffering from leprosy complications.

Keywords: Leprosy complication management in government health service point, Activating and engaging, Capability building, Health system

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#0391/ ILCABS583

ADDRESSING QUALITY OF LIFE (QOL) FOR PEOPLE WITH SEVERE NTD DISABILITIES IN INDIA USING AN INTERVENTION-FOCUSED, MINIMUM ESSENTIAL DATA QOL TOOL

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Introduction: The human consequences of chronic NTDs like leprosy and lymphatic filariasis (LF) increase proportionately with worsening disability. A hybrid quantitative and qualitative, intervention-focused quality of life (QoL) tool to collect minimum essential data on key aspects of life within a particular sociocultural context, was developed for people with severe NTD disabilities and piloted in India, in 2022.

Objectives: To pilot and assess the tool's reliability and value in obtaining an overview of issues needing immediate attention, and in developing interventions to improve situations of people with severe NTD disabilities in India.

Methods: 150 people (75 male; 75 female), with WHO Grade 2 leprosy disability (n=30), WHO Grade 3+ lymphedema (n=95), and LF hydrocoele (n=25), from 39 villages in one administrative Block, were selected through stratified random sampling. Four male and four female trained data collectors conducted the pilot in February 2022 using KoBoToolbox for data collection and analysis.

Results: 84.6% respondents reported difficulty in accessing morbidity and disability care at the single Primary Health Centre in the Block. 88.6% reported insufficient finances for basic necessities. 80% reported needing assistive devices to support their activities of daily living. They prioritized these three needs as requiring immediate attention to improve their quality of life. Our analysis was followed by five focus group discussions with the respondents in March 2022 to develop relevant interventions. These will be piloted over the next year, and impact assessed using the same tool.

Limitations: The unequal sample size of leprosy and LF disability is a limitation. This is unavoidable due to the small proportion of leprosy cases as compared with LF in the Block.

Conclusion: A minimum essential data, intervention-focused QoL tool for NTD disability enables quick identification of priority issues, and design and pilot of integrated interventions customized for the local context and the people.

Keywords: Severe NTD disability, Quality of life, Tool

#0392/ ILCABS597

EVALUATION OF PATIENT SATISFACTION AND OUTCOMES OF COMBINED LASSO AND OPPONENSPLASTY AS A SINGLE STEP SURGERY

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Introduction: Peripheral nerve impairment in leprosy can lead to deformity of eyes, hand and feet. Restoration by surgical interventions can, however, require long and multiple hospital stays impacting patient's daily activities and resulting in economic loss.

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Objective: To evaluate patient satisfaction and outcomes of single vs combined Lasso and/or Opponensplasty surgeries.

Materials and Methods: This was a retrospective chart review with satisfaction surveys from patients with single and bilateral hand ulnar and median claw after single or combined Lasso and Opponensplasty surgeries. Satisfaction was measured using a 0-10 visual analogue qualitative satisfaction scale at one month and three months post-operative follow-up. Score zero indicated worst and 10 indicated the best outcome. Satisfaction scale was further subdivided as poor (1-3), good (4-6) and excellent (7-9).

Results: Of 287 total surgeries, 175 patients underwent Lasso, 36 Opponensplasty, and 76 combined surgeries. After post-operative therapy, 70% of patients with combined surgery reported excellent outcome which was lower than Lasso (85%, p=0.01) but similar to Opponensplasty (75%, p=0.65). However, the proportion of excellent outcome for combined group increased to 92% at 3-months follow-up. The duration of hospital stay was found 7.2±1.6 weeks for Lasso, 8±2 for opponensplasty and 8.9±2.8 weeks for combined surgery. Hospital stay with combined surgery was reduced by about 6 weeks for one hand in comparison to conventional separate Lasso and Opponensplasty.

Limitations: This study was limited by short follow-up periods.

Conclusions: Combined surgery reduced hospital stay from 15 weeks to 9 weeks; and, thereby, allow patients to revert earlier to their daily activities and minimize economic loss. Combined surgery produced similar satisfaction outcomes. Chart review and analyses of functional outcomes remain ongoing.

Keywords: Disability, Leprosy, Nerve palsy, Reconstructive surgery.

#0393/ ILCABS602

POST-RECONSTRUCTIVE SURGERY FUNCTIONAL OUTCOME ASSESSMENT USING THE SCREENING OF ACTIVITY LIMITATION AND SAFETY AWARENESS (SALSA) SCALE.POST-RECONSTRUCTIVE SURGERY FUNCTIONAL OUTCOME ASSESSMENT USING THE SCREENING OF ACTIVITY LIMITATION AND SAFETY AWARENESS (SALSA) SCALE.

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Introduction: The most significant health consequence of leprosy is peripheral nerve damage with corresponding functional impairment which, without early and prompt treatment, can progress to deformity and/or disability. Reconstructive surgery (RCS) is often vital for function restoration in deformity; and functional outcomes and improvement can be evaluated using the SALSA scale. The SALSA scale has 20 questions each of which can be scored 0-4; and total scores of <24 indicate no limitation whereas 25-39, 40-49, 50-59 and 60-80 scores indicate mild, moderate, severe and very severe limitations respectively when evaluating function of hands and feet. Functional improvement is signified when the total score is reduced post-RCS.

Objective: The study objective was to evaluate functional outcomes of hands and feet post-RCS using the SALSA scale.

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Methods: A retrospective chart review was performed for leprosy patients who underwent RCS utilizing the SALSA scale from February 2020 to May 2022. Physiotherapist assessments taken pre- and post-RCS (at 4-5 weeks) were statistically analyzed comparing gender, hands vs feet, and across score parameters.

Result: A total of 55 leprosy patients were evaluated. The male: female ratio was 4:1 with an average age of 40+17 years and median age of 40 (R=15-74). SALSA scale assessment demonstrated average pre- (44+11) and post-RCS (37+10) scores indicating significant functional improvement (p=0.0005) from moderate limitation to mild limitation of a 'little difficult'. Participants (n=21) having an average pre-score <40 displayed improved functional outcomes after surgery (32+6.5 vs 27+6.5, p=0.01). Similarly, those (n=37) with an average pre-score >40 demonstrated improved functional outcomes after surgery (50+5 vs 43+7.4, p=3.8-07).

Conclusion: Comparing with SALSA pre-score, the average post-score was significantly lower across test parameters for hands and feet (p<0.01). Access to RCS can be vital for functional improvement in leprosy patients with paralytic deformity and/or functional disability.

Keywords: Leprosy, Disability, Deformity, Reconstructive Surgery (RCS), Screening of Activity Limitation and Safety Awareness.(SALSA)

#0394/ ILCABS640

STUDY ON EFFICACY OF PLATELET RICH FIBRIN (PRF) IN HEALING THE TROPHIC ULCER OF LEPROSY

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Introduction: Leprosy is a chronic infectious condition caused by Mycobacterium Leprae which mainly affects skin and peripheral nerves. Approximately 30% patients with leprosy develop nerve damage. Trophic or neuropathic ulcer is a chronic ulcerative complication of anaesthetic foot, mostly on bony prominences. It is resistant to local or systemic therapy with tendency to reoccur.

Autologous PRF(platelet rich fibrin) is prepared from patient's own blood by centrifugation and separation of formed fibrin. On application to the wound, it directly introduces growth factors, cytokines, thereby promoting neoangiogenesis, activating local immunity, improving cellular metabolism, leading to reparative phase .

Aims, Objectives: To find the efficacy of PRF in healing the trophic ulcer of leprosy.

Source: This is a prospective study conducted after approval from institutional ethics committee of Osmania medical college. Based on clinical and histological investigation,all leprosy patients with trophic ulcer attending leprosy clinic of Osmania general hospital from March 2022 to may 2022 were enrolled.

Methodology: Initial measurement of ulcer is done(length,width,depth)which is compared at each sitting to know improvement.

Wound is properly cleaned,10 ml of blood drawn from patient under sterile aseptic conditions

Blood is centrifuged at 3000 rpm for 10 minutes, the formed fibrin plug is applied over ulcer base and wound dressing is done.

Follow Up: It is reviewed after one week until ulcer heals or maximum up to 6 weeks.

Results: Out of 25 patients enrolled in the study, 22 (88%) showed complete healing, 1 patient showed marked reduction in wound size with reepithelisation, in remaining 2 patients healthy granulation tissue with partial reepithelisation was observed. Mean time of healing was around 4 weeks.

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Limitation: Less Sample size, difficulty in follow up

Conclusion: PRF therapy is a simple,cost effective,efficient procedure which results in faster wound healing.

Keywords: Platelet Rich Fibrin (PRF), Trophic ulcer of leprosy, Cost effective, Efficient

#0395/ ILCABS671

A RETROSPECTIVE STUDY OF DISABILITIES AT THE TIME OF DIAGNOSIS IN LEPROSY PATIENTS ATTENDING A TERTIARY CARE HOSPITAL IN NORTHERN INDIA

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Introduction: Leprosy is a leading cause of disability, despite extensive efforts to reduce the disease burden. Visible deformities in leprosy patients are one of the major factors responsible for stigma in society.

Objective: The objective of this study was to study disabilities among newly diagnosed leprosy patients at the time of diagnosis.

Material and methods: A retrospective study was performed at a tertiary care hospital in Northern India. All newly diagnosed leprosy patients attending the outpatient department of the hospital from April 1, 2017 to March 31, 2022 were included in the study. The recorded data of these patients regarding disability grades at the time of diagnosis was observed and analysed.

Results: During the five-year period, 60 patients were diagnosed to have leprosy. Grade 1 and grade 2 disabilities were noted in 33.33% and 26.67% patients respectively. 40% patients showed no disability at the time of diagnosis.

Limitation: As the study was conducted in a single tertiary care hospital, the results do not indicate the actual disability burden in the community.

Conclusion: Disabilities noted in 60% patients of leprosy cases at the time of diagnosis highlights the need to identify the burden of disabilities in the community and need for more rehabilitation centres with easy accessibility to the patients. It also emphasizes the role of education of affected patients regarding protective eye, foot and hand care to prevent progression of disability grade.

Keywords: Leprosy, Disability, Time of diagnosis

#0396/ ILCABS700

A CROSS SECTIONAL STUDY TO ASSESS ACTIVITY LIMITATION IN HANSENS PATIENTS USING SALSA SCORE

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Introduction: Leprosy is a chronic granulomatous infection caused by *M. leprae* primarily affecting skin,peripheral nerves. Due to impaired sensation in hands and feet various factors like repetitive

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stress,excess pressure,friction,burns can lead to injuries. If inadequately treated, it can lead to deformities and disabilities resulting in activity limitation in day to day life.

Aims and objectives: To identify patients with risk of activity limitation, assess the extent of activity limitation and measure the results of interventions directed to improve function and self care.

Methodology: A cross-sectional study was conducted among leprosy patients attending the OPD in tertiary care center in Hyderabad from Jan 2021-March 2022. 116 leprosy patients were interviewed randomly using a structured pre tested questionnaire. Patients having osteoporosis and other causes of peripheral neuropathy were excluded.

Results: SALSA score varied from 10 to 75 with a mean of 22. Majority (58%) had no limitation, 35% had mild limitation, 4% had moderate limitation, 2% had severe limitation and 1% had extreme

limitation. The scores were not different between male and female patients. There is a consistent increase of the score with age and with higher bacterial index values. Among 30 respondents without overt disease, the scores ranged between 18 and 20,mean of 19.

Limitations: A study with larger sample size is required.

Conclusion: SALSA score is a screening tool. It can be used to screen patients for activity limitations and refer those with higher scores to specialised services and assists in designing appropriate interventions. Early diagnosis and improved rehabilitative services can reduce the level of activity limita

Keywords: SALSA, Activity limitation, Severity assessments

#0397/ ILCABS771

EFFICACY OF TOPICAL INSULIN THERAPY AND TOPICAL PHENYTOIN SUSPENSION IN THE TREATMENT OF TROPHIC ULCERS IN PATIENTS OF LEPROSY: AN OPEN LABELLED, PROSPECTIVE COMPARATIVE STUDY

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Introduction: One of the principal causes of disability and deformity in leprosy is the chronic plantar ulcer. Despite relentless efforts it's management continues to be a dilemma.

Objective: To evaluate and compare the effect of topical human regular insulin (10 units diluted in 1ml of normal saline) and 2% phenytoin suspension in healing of trophic ulcers of less than 6 months duration in leprosy patients who had completed MDT treatment.

Materials and Methods: A total of 32 leprosy inpatients were divided randomly into two groups- Group. A had 17 patients with total of 19 ulcers and Group B had 15 patients with total of 15 ulcers. Group A received topical regular human insulin therapy while Group B received 2% topical phenytoin suspension (100mg tablet dissolved in 5ml NS) dressing once daily for 10 weeks. Primary endpoint of study was proportion of patients with complete wound closure by 10 weeks. Secondary end points were time taken to heal, wound area reduction and DLQI scores at end of 10 weeks. All ulcers measured <10 cm2. Bacterial culture of ulcer swabs was done both prior and at end of study.

Results: The ulcer area reduction was greater in the insulin group as compared to Phenytoin group with no statistical significance. The location of ulcers was maximum on forefoot (47.05%), then at back of foot (35.29%)

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and then least was at mid foot (17.65%). At end of 10 weeks, complete healing was seen in 10 ulcers of Group A and 6 in Group B. Wound healing was faster in Group A. No side effects were reported in any group.

Limitations: Smaller sample size, Non randomization

Conclusion: Both treatment appear to be an effective, safe and cheap therapeutic option for healing of trophic ulcers in leprosy.

Keywords: Trophic, Ulcer, Insulin, Phenytoin

#0398/ ILCABS801

GRADE-2 DEFORMITY AMONG LEPROSY PATIENTS: A STUDY ON STIGMA AND HEALTH RELATED QUALITY OF LIFE

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Background: Quality of life (QoL) has become a key goal of contemporary health care. It is often confused with standard-of-living. However, standard-of-living refers to the possession of wealth or material goods. As Leprosy is a chronic infectious disease which adversely affects the QoL of those affected and this disease is caused by Mycobacterium Leprae, which affects the skin and peripheral nerves and other tissues. This disease is attached with stigma and patients may suffer from discrimination along with other health issues. Hence the disease may have an impact on the quality of life(QoL) of these Leprosy affected persons.

Aims: and objectives: The aim of the study focuses on evaluation of Stigma and health related quality of life in deformed Leprosy affected persons.

Materials and Methods: This study was done by surveying the Shanthinagar area in Rangareddy District of Telangana State during the period of April 2021 to March 2022. The study enrolled 50 patients with Leprosy Grade- II Deformity, who met inclusion criteria after obtaining their informed consent. Data was obtained using a questionnaire and interviews to identify stigma and health related quality of life. Details such as emotional well-being, functional well-being, physical well-being, social/family well-being were included in the questionnaire. This specially designed questionnaire was used to meet the study requirements and data was collected and recorded on the lines of WHO grading system of deformities.

Conclusion: Early diagnosis and MDT treatment will prevent Grade-II deformity cases. Healthcare personals must be trained to provide DPMR services to the Grade-II disabled patients for the improvement of their quality of life. Case detection in the field must be strengthened by adopting proper preventive measures.

Keywords: Quality of Life, Deformities, Emotional well being, Stigma, Health.

#0399/ ILCABS840

A DESCRIPTIVE OBSERVATIONAL CROSS SECTIONAL STUDY OF VARIOUS DEFORMITIES SEEN IN LEPROSY IN A TERTIARY CARE CENTRE IN THE POST ELIMINATION ERA

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Introduction: WHO declared leprosy as a major health problem as it is known to be associated with crippling deformities and social stigma. This cross-sectional study was carried out in a tertiary care hospital

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during 2018-2019 to study various deformities in leprosy patients and associated clinical factors in order to understand the prevailing situation of the disease burden in the country in the post elimination era.

Objectives: To study the various deformities in patients of leprosy and associate with- 1. duration of disease.

2. spectrum of leprosy 3. reactional status 4. treatment status

Materials and Methods: According to NLEP data NLEP Annual Report 2016 – 2017, the Grade II Deformity Rate was 3.74 in Maharashtra. For our sample size considering the prevalence with deformities as and with a 5% variation allowed, the sample size at 95% confidence level for infinite population size was calculated as 125.

Results: BL (44.0%) and LL (28.8%) cases were greater than BT (18.4%). PNL constituted 8.8% of cases. 52.8% were newly diagnosed untreated ones. 14.6% cases developed deformities after completion of treatment. Most common grossly visible grade II deformity was claw hand (39.2%) followed by trophic ulcer (28.8%), both more in males. Ocular deformities were seen in 8%, including lagophthalmos and acute iritis. The duration of disease was more than 5 years in 35.2%. Type 1 reaction was seen in 28.8%, type 2 reaction in 28% and no history of reactions could be obtained in 43.2%.

Limitations: 1. Limited data set 2. Recall bias cannot be completely ruled out. 3. Longterm follow up was not possible.

Conclusions: In order to assess the current situation of leprosy in India and to address the possible loopholes in the running program, data from referral clinics is an essential pre?requisite, highlighting the importance of our study.

Keywords: Leprosy, Deformities

#0400/ ILCABS848

DEFORMITIES AS THE PRESENTING SYMPTOM IN LEPROSY- 'THE SCOURGE' IN THE POST-ELIMINATION ERA

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Introduction: In this era of leprosy elimination, early diagnosis and treatment play an important role in the prevention of deformities. Though various programs have been implemented to prevent the disease burden, leprosy still remains a scourge in the society. Many patients are diagnosed to have leprosy present with deformities. This does not auger well for leprosy eradication programs.

Objectives: 1. To study the proportion of leprosy patients presenting with deformity to the hospital.

2. To study the various deformity patterns in the post-elimination era.

Materials and methods: A total of 570 cases of leprosy belonging to all age groups were retrospectively analyzed, of which 210 cases were found to have deformities related to leprosy. All records of the patients pertaining to deformities were noted and statistically analyzed. They were further segregated into the type of leprosy, sensory and motor deformity, site of involvement, and graded according to WHO classification.

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Results: The study included 570 leprosy patients, of which 210 patients had deformity at initial presentation. The majority of patients belonged to the age group of 30-40 years, with a male predominance of 68%. The deformities were more with lepromatous pole of leprosy (86%). Of all, around 39.4% of patients had Grade 1, 51.5% had Grade 2 and 9.1% had Grade 3 deformities. There was a greater number of Grade 2 deformity, with trophic ulcer being the most common (76%), and this was also commonly seen in the lepromatous pole of the disease.

Limitations: This study was done as a retrospective analysis.

Conclusion: Early diagnosis plays an important role in the prevention of deformities in leprosy. It is appalling to notice even today, patients present with complications such as deformities during the initial diagnosis.

Keywords: Deformities, Leprosy eradication programs

#0401/ ILCABS855

TO DETERMINE RADIOLOGICAL CHANGES IN LEPROSY PATIENTS WITH DEFORMITIES IN A TERTIARY CARE HOSPITAL

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Introduction: :Leprosy is a slowly progressive infectious disease caused by *M. leprae*. It primarily affects skin and the nerves. The damage to the nerves can cause sensory and motor impairment leading to deformities and disabilities. An increased bacillary load can also affect many internal organs. The lesions of the skeletal system are significant since they can be directly responsible for deformities associated with leprosy.

Objectives: To determine the radiological changes in leprosy patients with deformities in a tertiary care hospital.

Patients/Materials and Methods: This was an observational study done in the Department of Dermatology over a period of 24 months. 50 patients of leprosy with deformities involving hands,feet and skull weresubjected to radiological examination with roentgenograms.

Results: Among 50 patients(35 males and 15 females),the majority of the cases were lepromatous leprosy (19 cases) and borderline tuberculoid to borderline lepromatous leprosy (15 cases). The mean age of the patients was 38.8 years. Radiological changes were seen in 19 patients(38.0%). Specific radiological changes were present in 12 patients (35.3%) and non-specific changes were seen in 22 patients (64.7%). The most common radiological findings were resorption of the bones and periosteitis.

Limitations: This was an observational study conducted on a small sample size, so the results may not be generalised to a larger population.

Conclusion: Leprosy is a dreaded disease due to related deformities. The study of radiological changes in leprosy patients may help the clinicians in early detection of bone changes, thus providing an opportunity for timely intervention and rehabilitation.

Keywords: Leprosy, Radiological changes, Deformities,

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#0402/ ILCABS891

COMBINED SELFCARE APPROACH FOR PREVENTION AND MANAGEMENT OF DISABILITY DUE TO LEPROSY AND LYMPHATIC FILARIASIS_ A PILOT MODEL TO ADDRESS THE TWO DISEASES

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Introduction: Leprosy and lymphatic filariasis (LF) are two most common diseases causing disability which affects the physical, mental, social and financial status of the person affected. Self-care (SC) helps in preventing and ameliorating the disability among persons affected. The self-care camps for persons affected by either leprosy or LF are organized at one place at the same time - thus combined selfcare.

Objective: To train the persons affected by leprosy and LF on self-care practices and build capacity of General Health Care (GHC) staff across 61 blocks of 6 districts in Uttar Pradesh and Bihar.

Material and methods: The list of registered persons affected by leprosy and LF were collected and shared with respective GHC staff for inviting the persons affected for attending SC camps at health facility. Assessment of disability of each person was conducted & documented. They were trained on SC for two days with demonstration of practices. The GHC staff were also trained on selfcare. Review meetings were organized every month for initial 3 months, then every 3 months and progress made were recorded. Master trainers on SC were identified and developed.

Results: 232 master trainers were developed and total 1883 beneficiaries including 1291 persons affected by LF were trained. 85 % of 638 persons affected having ulcers reported healing while 75% of 1291 lymphoedematous cases reported their swelling reduced. Total 1614 GHC staff and 2781 ASHA including representatives of Disability People Organization (DPO) and Panchayat Raj Institutions (PRI) were trained on SC.

Limitations: None

Conclusion: SC if practiced properly can improve the condition of disability among persons affected by leprosy and LF.

Keywords: Leprosy, Filariasis, Combined, Selfcare, Disability, Ulcer

#0403/ ILCABS911

A COMPARATIVE STUDY ON THERAPEUTIC EFFICACY OF PLATELET RICH FIBRIN MATRIX WITH PERILESIONAL PLATELET RICH PLASMA INJECTION THERAPY VERSUS PLATELET RICH FIBRIN MATRIX ALONE IN PERIPHERAL NEUROPATHY ASSOCIATED CHRONIC NON HEALING ULCERS IN LEPROSY

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Background: Peripheral neuropathy results in loss of sensory function leading to chronic non healing trophic ulcer in leprosy . Growth factors rich platelet-rich plasma (PRP) can promote both nerve regeneration and wound healing especially along with autologous platelet rich fibrin matrix (PRFM) dressing.

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Materials and methods: A comparative interventional study was conducted among 30 known cases of leprosy with chronic non healing ulcers and associated sensory loss due to peripheral neuropathy . 15 patients each were randomly allocated in two groups: group 1 receiving PRFM dressing and perilesional PRP injection weekly and group 2 receiving PRFM dressing alone. In Perilesional PRP injection therapy, a series of injections containing PRP was placed underneath the skin near superficial nerves in 5 cm diameter around the ulcer including its margins. The outcome was assessed by the healing of the ulcer was assessed, the area was calculated, and photographs were taken at the beginning and end of every week. End point was reepithelialization of ulcer. Besides this, sensory functions were also assessed by two point discrimination test.

Results: Group A showed a mean reduction in the ulcer area by 81.90% which is highly significant (P-value <0.05). Group B showed a mean reduction in the ulcer area by 65.75% which is also significant (P-value <0.05) . Patients in group A achieved around 80% healing by 4 weeks earlier than group B. There was a significant improvement in sensory functions in group A.

Conclusion: Perilesional PRP injection therapy along with PRFM could lead to signicant improvement of sensations owing to nerve regeneration and rapid healing of non healing ulcers owing to release of multiple growth factors like NGF and TGF b around the ulcer.

Limitations: Small sample size.

Keywords: Leprosy, Platelet-rich plasma, Platelet rich fibrin matrix, Perilesional injection, Peripheral neuropathy, Trophic ulcer

#0404/ ILCABS920

SELF-CARE PROGRAM FOR PERSONS WITH DISABILITY DUE TO LEPROSY: HOW A SCALE-UP ON SELF -CARE IN LEPROSY WAS ACHIEVED IN BIHAR

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Introduction: People affected by leprosy are at increased risk of ulcers from peripheral nerve damage that in turn can lead to visible impairments, stigmatisation and socio-economic marginalisation. Health care providers suggest that patients should be trained on self-care (SC) to manage their condition to improve outcomes and reduce reliance on public health services.

Objective: To scale up leprosy self-care in Bihar through enabling and empowering persons with disability due to leprosy, for practising self-care

Methods and material: The initiatives to train persons with disability due to leprosy and GHC staff on SC practices was taken up across five districts of Bihar in 2008. Relevant government officials, GHC staff and Accredited Social Health Activist (ASHA) were trained on SC protocols and practices, with provision of logistic support and SC kits. The positive outcome of the processes adopted were disseminated at several forums with participation of government officials, media and International Federation of Anti-Leprosy Associations (ILEP) agencies. Advocacy meetings with government officials were held for adoption of SC as an effective approach to prevent and manage disabilities due to leprosy.

Result: In 2015, Bihar government adopted SC as a policy by integrating it under Disability Prevention and Medical Rehabilitation (DPMR) and rolled it out across all 38 districts. In the process of scaling up, technical

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support is provided to government functionaries on training, supervision and monitoring of SC practices. It is assumed that stigma and discrimination might had reduced in family and community of persons with disability due to demonstration of SC practices by GHC staff and ASHA to them. It has helped in improving their mental well-being and mainstreaming themselves in society.

Limitations: None

Conclusion: Scale up of leprosy SC was possible due to collective efforts of beneficiaries belonging to underserved districts, government officials and stakeholders led by NLR

Keywords: Disability prevention, Self-care, Ulcer care .

#0405/ ILCABS932

STUDY OF SPECTRUM OF DEFORMITIES IN ELDERLY AND PAEDIATRIC PATIENTS WITH LEPROSY IN TERTIARY CARE CENTRE KARNATAKA

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Background: Presence of physical deformities in elderly and paediatric patients with leprosy reflects the rate of disease transmission in the community; delay in detection of cases; and inadequacy or failure of treatment.

Objectives: To determine the spectrum of physical deformities in patients with leprosy in elderly and paediatric age group and to assess the treatment history of the selected number of patients.

Materials and Methods: The study was an analytical study conducted on all leprosy patients between Age group of below 16yrs and above 60yrs who visited the dermatology out-patient department in a tertiary care hospital the period of 1 year.

Results: Males constituted 63% and females constituted 27%. It was found that a majority were in the age group of 60-80 years than in the age groups 0-16 years . Among the 30 patients studied, it was found that majority of the patients (18) had WHO grade 0 or grade 1 deformity. Those with visible deformities (WHO grade 2 deformity) constituted 12 patients of the study population. Among those with visible deformities, the most common deformity was seen to be trophic ulcer (21.73%). This was followed by claw hand, resorption of bones, foot drop, madarosis, lagophthalmos, ear lobe deformity, and finally nose deformity.

Conclusions: In this study it was found that more than one third of number of leprosy patients had deformities. It reflects the need for further efforts to prevent and curb this infectious disease and increase education among general population.

Keywords: Elderly, Paediatric, Leprosy, Trophic Ulcers, Lagophthalmos

#0406/ ILCABS971

EXPERIENCE IN THE TREATMENT OF 32 CASES OF LOWER LIMB ULCERS SECONDARY TO LEPROSY

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Objective: To analyse clinical characteristics of lower limb ulcers secondary to leprosy and conclude the effect and experience of new comprehensive treatment methods in our hospital since 2010 for providing reference of better diagnosis and treatment.

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Methods: & Results: 32 patients with leprosy secondary lower limb ulcers were treated in our hospital from January 2010 to March 2021. The disease course of all patients was more than 10 years, all of them had nutritional disorders and pressure injury, 27 cases were caused by trauma, and 13 cases were complicated with type 2 diabetes. All patients were suffered complicated and multiple ulcers, 21 cases had secondary foot deformity, 17 cases had secondary toe necrosis. 26 cases had ulcers on the feet and 6 cases on the feet and calves. 25 cases were complicated with ulcers infection, including 19 cases with two or more type bacterial infections. All patients were strengthened nutrition, corrected acid-base imbalance, anti-infection and provided supportive management. 23 cases were combined with relieving pressure, debridement, ozone treatment, phototherapy, anointing anti-infective drugs and growth factors, negative pressure therapy, toe amputation, skin transplantation, flap transfer and artificial skin covering. 9 cases were treated with PRP/PRF and ADSCswhich could further improve the speed and quality of ulcers healing in recent 3 years. All ulcers healed clinically.

Conclusion: All patients with leprosy in our hospital were suffered complicated and multiple ulcers, which are most secondary happen in the feet and most caused by trauma. They were difficult to treat due to type 2 diabetes and multiple bacterial infections on the wound. Systemic support therapy and local wound therapy should be strengthened to improve the speed and quality for ulcer healing. Prevention of foot trauma is particularly important, while improvement of nutritional disorders and relieving stress is a key link in treatment.

Keywords: Leprosy, Lower limb ulcers, Treatment, Experience

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MISCELLANEOUS

#0407/ ILCABS15

DERMOSCOPIC, CLINICAL AND HISTOPATHOLOGICAL ASPECTS OF LEPROSY AND LEPRA REACTION CASES – AN OBSERVATIONAL CROSS-SECTIONAL STUDY

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Introduction: Owing to myriad clinical presentations of leprosy, it becomes a diagnostic challenge. Dermoscopy visualizes skin structures not normally visible to the naked eye, thus providing additional morphological information. **Aims & objective:** To study & evaluate the various dermoscopic pattern of different types of leprosy and assess its association with clinical & histopathology.

Materials and methods: A descriptive cross-sectional study was undertaken at dermatology OPD between Nov 19–and Mar'21 after ethical approval. Thorough clinical, physical & local examinations were done. Gross photographs were taken using a Canon HD DSLR camera. Dermoscopy was taken with DL-4 DERMLITE dermoscope. The images were analyzed for dermoscopic features. A biopsy from the same lesion was taken.

Results: A total of 50 naive leprosy cases with skin phototypes of IV to VI were studied. Males (30) outnumbered females (20). The majority of cases were from adulthood (21-65years) noted as 42(84%) cases. A history of migration was noted in 6(12%) patients. The most common type was BT (21,42%). We observed yellowish-brown and white structureless areas, associated vascular findings predominantly of linear irregular vessels, and variable loss of appendageal structures histologically corresponding to dermal granulomatous infiltrate, perivascular and periappendageal infiltrate respectively were predominant features throughout the spectrum. Appendageal structures were markedly reduced in the tuberculoid pole. We noted reduced pigmentary network towards the tuberculoid pole whereas accentuation towards the lepromatous pole. Follicular plugging, scaling, and shiny white areas were additional features in the lepra reaction.

Conclusion: Yellowish-brown and white structureless areas, associated vascular findings predominantly of linear irregular vessels, and variable loss of appendageal structures were key features throughout the spectrum. Sunflower-like appearance, rosette-like pattern, and milky red background in histoid leprosy, target-like pattern in type 2 lepra reaction were the unique dermoscopic findings from our study.

Keywords: Leprosy, Dermoscopy, Yellowish-brown structureless areas, Granuloma

#0408/ ILCABS22

LEPROSY IS MENTIONED IN VEDIC LITERATURE OF ALL RELIGION

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Leprosy has found prominence in description in most of the religious books like Hindu Puranas, Christian's Bible and Islamic Books. Though we are in modern era with lot of research evidence and scientific explanations about each and every aspect of leprosy, it's quite interesting task to uncover the ancient understanding of this dreaded disease, as understood and quoted through these religious books.

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Leprosy has tormented humans throughout history. The earliest possible account of a disease that many scholars believe is leprosy and it appears in an Egyptian papyrus document written around 1550 BC. Around 600 BC in India, Sushruta Samhita described a disease that resembles leprosy. Throughout history leprosy has been feared and misunderstood. For a long time leprosy was either thought to be a hereditary disease or a curse or a punishment from God. Before and even after the discovery of its biological cause, leprosy patients were stigmatized and shunned. Leprosy has been mentioned in all four Yugas of Hindu religion. Yuga in Hinduism is an era within four age cycle. A complete Yuga starts with the Satya Yuga, Goddess Renuka Yallamma suffered from leprosy, via Tretha Yuga, Lord Sri Ramachandra takes blessings from Goddess Durga to free him from leprosy, and Dwapara Yuga, Krishna's son Samba suffer from leprosy, and in Kali Yuga Father of nation Mahatma Gandhi and Baba Amte takes interest in leprosy. Our present time is a Kali Yuga, which started with the end of Mahabharata war at 3102 BC. In the Bible, the word leprosy is mentioned more than 40 times. In the Sahih Al-Bukhari – Book of Medicine also there are quotes about leprosy. This is an attempt to trace the history of leprosy in all three major religions and their religious books.

Keywords: Vedic literature, Purana, Bible, Sahih Al-Bukhari

#0409/ ILCABS64

ENHANCING LEPROSY EXPERTISE: A NEW LEPROSY COMPETENCIES FRAMEWORK

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Introduction: The 2020 ILEP Conference highlighted that limited or dwindling leprosy expertise at all levels is a challenge in almost every leprosy-endemic country and is a major obstacle to achieving zero leprosy. New innovative approaches are needed to enhance the knowledge and skills of existing health and development professionals, and to develop a new cadre of staff intent on defeating leprosy. However, there are a number of prerequisites before developing an innovative and effective approach to leprosy expertise development.

Description: This paper examines some of these prerequisites, and how the introduction of a newly developed Leprosy Competencies Framework can address these. Devised through a global consultation process, with input from experts across the field of leprosy, and piloted in Nepal and Nigeria, this Framework looks at 10 competency areas which when implemented together, will achieve holistic care: Diagnosis, Transmission, Leprosy Control, Nerve Function Impairment, Reactions, Wounds, Eye Complications, Mental Wellbeing, Social Aspects and Laboratory Skills.

For each competency, the Framework maps the leprosy knowledge and skills needed for health and development workers at basic, intermediate and advanced levels. It can be used as a tool to clarify the knowledge and skills needed for each role, and to assess the gaps to identify training and development needs. The list of skills can also be used to develop standard operating procedures to ensure quality standards in leprosy care, which will provide the basis for high-quality training and mentoring materials, thus ensuring consistent standards of care across countries and globally.

Conclusion: New standardised tools are needed to achieve the triple zeros that can be utilised across the health and development sectors. This Leprosy Competencies Framework provides the structure required by leprosy-endemic countries to develop the knowledge and skills essential to achieve the triple zeros.

Keywords: Skills, Knowledge, Capacity, Framework, Competencies, Training

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#0410/ ILCABS65

HEALTH ECONOMIC EVALUATION OF SELF-HELP GROUP INTERVENTIONS IN LMICS: A LITERATURE REVIEW

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Introduction: Self-help groups are voluntary mutual assistance groups of individuals with a common characteristic, e.g., leprosy or impoverishment. They exist to meet a collective objective, such as the improvement of health or promotion of wellbeing, and may be considered for provision through publicly funded healthcare. Such groups may confer benefits and/or costs beyond the healthcare sector.

Objectives: Our objective is to identify and critically appraise the methods used to establish the value of self-help interventions that seek to improve health in LMICs. We define value as the benefits gained net of the benefits forgone from funding it. We consider whether the methods employed can meaningfully inform decisions by Ministries of Health and other sectors, including donors, around whether to fund such interventions.

Material and methods: We systematically searched MEDLINE, Embase, EconLit and Global Index Medicus for peer reviewed studies published between 2014 and 2020. Papers were included if they evaluated a self-help intervention, were based in an LMIC, included at least one health outcome and intervention costs and reported the methods used. We completed a narrative synthesis of the papers with a focus on how papers account for intersectoral effects and provide information to inform decisions.

Results: Nine studies met our inclusion criteria. There was heterogeneity in the extent to which (or whether) all of the relevant costs, benefits and potential disbenefits and opportunity costs were included, and how these were reported.

Limitations: Estimation of the value of self-help groups without potential health benefits is beyond the scope of this review, and is an area for future research.

Conclusion: Informing decisions around funding self-help groups in a way that ensures that their value is accounted for requires collection and reporting of particular types of data. Funders can make better informed decisions when evidence is organised in a cross-sectoral framework.

Keywords: Self-help, Value, Economic evaluation, Cost-effectiveness, Literature review, Leprosy

#0411/ ILCABS151

ROTARY & LEPRA PARTNERSHIP – HELPING IN MAKING INDIA LEPROSY FREE

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Many believe that leprosy is a disease of the past and have no idea of its continued prevalence, spread and the suffering it causes. The truth is, leprosy never went away!! Out of the number of cases reported last year, more than 60% are from India.

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The 'Leprosy Control Project' by Rotary Club of Delhi South with partner Clubs and Lepra was started in November 2019 to make Leprosy a disease of no consequence in India. The project focus is around 4 pillars – battling ignorance, training people, active case finding, and healthcare and rehabilitation.

Background: and Description of the project- We are convinced that Leprosy is an initiative which is tailor-made for Rotary which has done yeomen service in getting rid of Polio virus from India. Seeking to replicate the Rotary's Polio model, we set out in our fight against Leprosy.

Objectives: To control leprosy and reduce it to insignificant levels. Raise awareness amongst various stakeholders, Active Case Finding (ACF) for detection, referral for treatment, increased treatment, medication and palliative care, and confidence building support for leprosy patients.

Achieved till date:

1. Reached out to 60% Leprosy Colonies in Delhi NCR
2. Physiotherapy and Awareness Camps conducted
3. Training of Medical professionals
4. Awareness and Advocacy - during camps, Anti-Leprosy Week, Social Media etc.
5. Installed Solar Plants in Leprosy Colonies.
6. Served cooked food during Covid
7. Distributed Self-Care kits, special / Custom made shoes, Aid and appliances, Wheel Chairs, etc

Next Steps

· Continue above efforts

· Reach remaining Leprosy Colonies in Delhi

· Training for Case finding

· ACF Camps

· Involve the Government for sustainability

· Reconstructive Surgeries

· Vocational Training and Job opportunities

Keywords: Partnerships, Rotary Clubs, Battling ignorance, Training people, Active case finding, Healthcare and rehabilitation

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#0412/ ILCABS161

ORIGIN AND SPREAD OF LEPROSY IN SURINAME

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 DOI: 10.57202/ilc2022

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Introduction: Suriname is populated by indigenous people and people from Europe, West Africa and Asia.

Leprosy was common until 1970s; currently low prevalence rate.

Objectives: To investigate origin and spread of leprosy and environmental presence of *M. leprae*.

Patients, materials, methods: Skin biopsies from patients with MB leprosy were used for strain (sub-) typing by PCR-genotyping and whole-genome sequencing. The presence of *M. leprae* was confirmed by RLEP-PCR.

Soil samples were taken from armadillo burrows, abandoned leprosaria and houses of leprosy patients.

Patients' residencies were geolocated. Dapsone, rifampicine and ofloxacine resistance was investigated using whole-genome sequencing (hgs).

Results: 27 biopsies of MB leprosy patients were collected and 24 were positive for *M. leprae*. Typing revealed the presence of SNP strain 1 and 4; none of the strains harbored a SNP type 3. HGS was recovered from 12 strains and revealed Dapsone resistance with mutation in folP1 (P55S and P55R) in 2 patients. The SNP subtypes circulating in Suriname are 4P (n=5), 1D (n=3), 4N (=3). The strains 4P and 4N cluster with strains from West Africa and Brazil while the 1D strains cluster with the 1D from Asia. One strain harbored two *M. leprae* genotypes 1D and 4P suggesting co-infection.

Geo-plotting showed that the majority of patients lived along the Suriname river. From 28 soil samples 3 from former leprosaria were positive in *M. leprae* by PCR.

Limitations: Limited sampling

Conclusions: § Strain typing reflects partly migration patterns and suggests introduction of leprosy in Suriname from Africa and Asia. Additional sequencing and molecular clock analysis should help to date and retrace the different introductions.

§ Positive soil samples indicate that armadillo's may play a role in the persistence of *M. leprae*.

§ Both patients with Dapsone resistance showed clinical relapse after initial successful treatment with MDT.

Keywords: Suriname, *M. leprae*, Strain typing, Soil samples, Antibiotic resistance, PCR-genotyping

#0413/ ILCABS194

MACHINE LEARNING ALGORITHMS APPLIED TO LEPROSY SUSPICION QUESTIONNAIRE TO IMPROVE HEALTH PROFESSIONALS IN SCREENING LEPROSY PATIENTS

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Introduction: Leprosy is an infectious disease caused by Mycobacterium leprae. It lodges in the skin and on peripheral nerves, potentially leading to serious outcomes. The Leprosy Suspicion Questionnaire (LSQ), developed by Frade and Bernardes-Filho, consists of 14 questions comprising simple dermatoneurological symptoms and signs.

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Objective: Evaluate the viability of implementing machine learning models using LSQ to improve health professionals patient screening for leprosy.

Methods: Dataset contained 1842 LSQ filled by individuals from the region of Ribeirao Preto, Sao Paulo, Brazil. All were clinically examined and 139 had leprosy and 1703 were non-leprosy individuals. Of the 14 questions, 2 were not used because they had more than 70% of missing data. Dataset was divided into 80% training and 20% testing with 10 randomly generated seeds. The rebalancing was done with Synthetic Minority Over-sampling Technique and the hyperparameters were optimized by exhaustive search using cross-validation with 5 divisions and 20 repetitions. The result set of each classifier passed Student's t-test with Bonferroni correction so that only statistically similar models were analyzed. The classifiers implemented with Sklearn were Support Vectors Machine (SVM), Logistic Regression and Random Forest. The model with the highest AUC was applied to the test base.

Results: An example of SVM hyperparameters was C=0.1, degree 2, Gaussian kernel. For Logistic Regression was C=1, L2 penalty and liblinear solver. For Random Forest, maxdepth=10, max_features=1, min_sample_leaf=10 and n_estimators=300. Sensitivities were respectively (0.734±0.089), (0.830±0.117), (0.750±0.080); specificities, (0.755±0.047), (0.684±0.074), (0.740±0.035); precisions, (0.201±0.030), (0.182±0.023), (0.192±0.018); negative predicted values, (0.972±0.008), (0.981±0.011), (0.973±0.008); and AUCs, (0.800±0.031), (0.791±0.029), (0.800±0.034).

Limitations: Using data only from the Ribeirao Preto region may result in prediction bias and need further studies.

Conclusions: SVM, Logistic Regression and Random Forest applied to predict outcomes with LSQ proved to be viable for implementation to improve leprosy screening considering its high sensitivity and specificity around 0.750.

Keywords: Machine learning, Screening, Leprosy suspicion questionnaire, Random forest, Logistic regression, Support vectors machine

#0414/ ILCABS307

DEVELOPMENT OF THREE PILOT INTERVENTIONS TO IMPROVE THE QUALITY OF LIFE FOR PEOPLE WITH LEPROSY REACTIONS IN INDONESIA

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Introduction: In 2018, a study was undertaken in India and Indonesia that aimed to identify needed improvements in the management of leprosy reactions. Indonesian participants expressed the need to have a peer-support network through which they can get help in dealing with the daily impact of leprosy reactions, share common experiences, and provide social support. We identified three interventions (peer-counselling, participatory video, and teleconsultation) based on the study.

Objective: To design and pilot the interventions for people with leprosy reactions in two leprosy endemic areas in Indonesia using interactive learning and action approach.

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Methods: In the co-creation phase, we involved 12 Indonesian experts on leprosy for interviews. The experts were asked about challenges in managing leprosy reactions and possible facilitators and challenges in the implementation of three proposed pilots. Two participatory workshops will be conducted to validate the findings and adjust the pilot activities based on the needs of the affected individuals.

Description of cases: Currently, there is, to our knowledge, no specific intervention that incorporates the psychosocial aspect of leprosy reactions for this target group. Three interventions were co-created based on the local context and sustainability issues. People with a history of leprosy reactions will be trained as co-implementers of each intervention and all participants will be involved in pre-and post-evaluation in a pilot study. Peer counseling will be offered to groups to increase its practicality. Participatory videos will be made and shown in clinical settings. Teleconsultation via an online peer-sharing group will be used to increase openness among people with leprosy reactions and incorporate more psychosocial topics into the group conversation.

Conclusion: Three pilots are developed based on the local needs and contexts to increase appropriateness and practicality. These can be promising interventions aim to increase the quality of life for people with leprosy.

Keywords: Leprosy Reactions, Development of Pilot Interventions, Social Support, Group Counselling, Participatory Video, Telehealth

#0415/ ILCABS387

DERMATOSCOPY IN LEPROSY

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Background: Leprosy is a chronic granulomatous infection with varied clinical presentations. Dermatoscopy is a non-invasive technique that allows rapid and magnified in vivo observation of the skin with the visualization of morphologic features that are invisible to the naked eye. In our study, we aim to describe the dermatoscopic features of all types of leprosy and correlate with clinical and histopathological findings.

Materials and Methods: A prospective observational study was done on all the leprosy patients attending OPD over a period of 1 year. The study patients were categorized as per Ridley-Jopling classification. The lesions of different types of leprosy were photographed and evaluated by dermatoscopy and biopsied.

Results: A total of 60 patients (34 Males and 26 Females) were taken under the study. Out of 60 patients, 6 cases of tuberculoid leprosy, 22 cases of borderline tuberculoid (3 with Type 1 reaction), 16 cases of borderline lepromatous, 12 cases of lepromatous leprosy (5 with Type 2 reaction) and 4 cases of Histoid leprosy. The dermatoscopic features seen are yellowish-orange areas and vascular structures like linear branching vessels and crown vessels. Broken pigment network and white chrysalis like areas are also seen. Absence or diminished hair follicles and eccrine duct openings are seen in tuberculoid spectrum. Scaling and follicular plugs are seen in type 1 reaction.

Conclusion: Yellowish-orange areas and vascular structures are the common dermatoscopic features seen in leprosy. Broken pigment network and paucity of appendageal structures are other features seen.

Keywords: Leprosy, Dermatoscopy, Granulomatous infection

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#0416/ ILCABS435

DRUG UTILISATION STUDY IN LEPROSY CLINIC OF TERTIARY CARE HOSPITAL IN CHANDIGARH

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Introduction: Leprosy (Hansen's disease) is a chronic and curable infectious disease caused by a rod-shaped, intracellular acid-fast bacillus called Mycobacterium leprae. Many factors like malnutrition, expensive drugs apart from MDT, and co-morbidities contribute to maintaining the burden of leprosy in India. Evaluation of such data in conjunction with drug utilization data can help in making judgments about resource allocation.

Aim: This study aims to determine the drug utilization pattern and assess the economic burden of the patient with leprosy associated with or without ENL.

Materials and Methods: Over the period of March 2022 to May 2022, twenty patients with leprosy were evaluated.

Results: 9(45%) patients were on the WHO-MDT MBR regimen and 11(55%) were on an Alternate anti-leprotic regimen. The most common drugs used in the alternate anti-leprotic regimen are Minocycline 100 mg, Ofloxacin 500 mg, and Clarithromycin 400 mg daily. Mean±SD duration of therapy was 26±19. The mean ± SD of the cost of drug treatment per patient was 1205±704. Adherence to treatment was noted to be complete in 19(95%) of patients. 14(70%) gave a history of ENL and were treated with apremilast (10), thalidomide (2), Prednisolone (1), and methotrexate (1). Patients were not very forthcoming about the side effects of the drugs.

Conclusion: The preliminary results of the drug utilization study throw light on various aspects related to the rational use of drugs, cost analysis, patient compliance, and side effects related to the anti-leprotic drugs.

Keywords: WHO-MDT MBR, ENL, Anti-leprotic, Compliance, Cost analysis

#0417/ ILCABS459

DOES CUTANEOUS BIOPSY PLAY A ROLE IN DECIDING TREATMENT MODALITY IN CASE OF LEPROSY? A RETROSPECTIVE ANALYSIS FROM A TERTIARY HEALTH CARE CENTRE IN INDIA

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Introduction: India continues to harbour the most active cases, alongwith significant child proportion among newly detected cases; indicating continued transmission of disease. Early diagnosis and adequate treatment is imperative to make the patient non-infectious and break the chain of transmission. Slit-skin smear (SSS) and Histopathological (HP) examination aid clinical acumen in diagnosis and correct labelling of paucibacillary (PB) or multibacillary (MB) cases.

Objective: This study was done to evaluate the role of HP examination in deciding treatment plan in cases of leprosy.

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Material and Methods: This retrospective, analytical study over 5 years, included evaluating demographic and clinical data of newly detected leprosy cases, using Ridley-Jopling classification. Data of skin biopsies and SSS were analysed for evidence and staging of leprosy, including Fite-Faraco staining. The HP findings were later compared with clinical diagnosis, using the Kappa statistic to determine clinicopathological correlation.

Results: Out of 78 patients, 29 patients matched with clinical and HP diagnosis. Using the Kappa statistic, the interrater reliability was found to be 0.220 ($p < 0.001$) with 95% CI (0.111, 0.329) – suggestive of fair agreement. Maximum discordance was found in the borderline spectrum, with HP suggestive of changes along the lower spectrum. HP findings of 5 (6.4%) PB cases suggested changes towards MB spectrum, thus changing the line of management.

Limitations: The retrospective nature of the study and small sample size were the limitations.

Conclusion: Cutaneous biopsy in clinical PB cases can be subjected to HP evaluation, to pick up early changes suggestive of need for MB treatment. Whereas, evidence of HP changes towards lower spectrum does not warrant change of treatment. So subjecting patients with clinical PB type to biopsy can help in making sure no patient is undertreated. Further studies with greater sample size of PB patients can be planned to validate the findings.

Keywords: Hansen's disease, Skin biopsy, Clinico-pathological correlation, Ridley-Jopling classification

#0418/ ILCABS680

COVID-19 VACCINATION AND LEPROSY – A UK HOSPITAL-BASED RETROSPECTIVE COHORT STUDY

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Background: Individuals with leprosy are at risk of leprosy reactions, T-cell mediated immunological complications, which lead to nerve function impairment. Vaccination for SARS-CoV-2 infection is recommended in the UK since 2021.

Vaccines for SARS-CoV-2 may provoke a T cell response. The latter poses a theoretical risk of provoking an immunological response to latent Mycobacterium leprae infection leading to clinical disease or triggering a leprosy reaction.

Methodology/principal findings: We performed a retrospective cohort study to determine the SARS-CoV-2 vaccination status of individuals diagnosed with leprosy attending the Leprosy Clinic in 2021 and whether any had developed leprosy or new leprosy reaction within twelve weeks of receiving a dose of a SARS-CoV-2 vaccine. The electronic patient records were used to retrieve data.

Fifty-two individuals with leprosy attended the clinic in 2021, which five were newly diagnosed with leprosy. Thirty-seven (71%) were male and median age was 48.5 years old (Range 27-85). Twenty-two (41.5%) individuals were prescribed a systemic immunosuppressant drug. Ten (18.9%) individuals have one or more risk factors for severe COVID-19. The SARS-CoV-2 vaccination status of fifty (96%) were recorded of which forty-nine were vaccinated.

Two males had a new leprosy event within twelve weeks of a dose of SARS-CoV-2 vaccine. One individual was diagnosed with borderline tuberculoid leprosy one week after a second dose of BNT162b2 vaccine; another, a leprosy type 1 reaction eight weeks after a dose of BNT162b2 vaccine.

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Conclusions/significance: The development of BT leprosy and a Type 1 reaction after a dose of BNT162b2 vaccine may be associated with vaccine mediated T cell responses. The benefits of vaccination to reduce the risk of severe COVID-19 outweigh these unwanted events but data from leprosy endemic countries may provide further information about potential adverse effects of augmented T cell responses in individuals with leprosy or latent *M. leprae*.

Keywords: Leprosy, Leprosy reactions, Covid-19, Vaccines

#0419/ ILCABS757

MENTAL HEALTH PROBLEMS IN PERSONS AFFECTED BY LEPROSY IN INDONESIA: IS IT REALLY A PROBLEM?

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Introduction: Persons affected by leprosy are at risk of mental health problems even after they have been completed treatment due to the chronicity of the condition, the stigma surrounding leprosy and disabilities. However, the magnitude of this problem in Indonesia is little known.

Objectives: To describe the frequency of mental health problems in persons affected by leprosy living in two districts in Indonesia.

Patients / material and methods: Participants were persons diagnosed with leprosy at the primary health centers (PHCs) in the last five years, aged ≥18 years old, able to provide written consent and able to communicate verbally in Indonesian or local language. Face-to-face interviews were administered by trained enumerator. Questionnaire included sociodemographic characteristics, knowledge, attitude and practice related to leprosy. Assessment of depression and anxiety were performed using Patient Health Questionnaire-9 and General Anxiety Disorder-7, respectively. Stigma was measured using Explanatory Model Interview Catalogue community stigma scale (EMIC-CSS). Participation was assessed using Participation scale. Data were analyzed descriptively using SPSS version 25.0.

Results: A total of 241 participants, 168 of which were male (69.7%), were interviewed. The mean age was 39.3 years old. One third of participants had a primary school education. Almost 75% participants had been released from treatment (RFT). None of the participants identified severe depression or anxiety. Six (2.4%) participants identified mild depression, while 5 (2.1%) participants identified mild anxiety. The mean (SD) of EMIC-CSS score was 8.45 (6.3), suggesting moderate level of self-stigma. Only ten (4.1%) participants experienced mild-moderate restriction in participation.

Limitations: Non-random sampling may limit the representativeness of the study, especially with the high proportion of participants who had been RFT.

Conclusion: Few persons affected by leprosy in Indonesia reported mental health problems in Indonesia, suggesting good adaptation into the community especially those who had been RFT.

Keywords: Leprosy, Mental Health, Stigma, Anxiety, Depression, Indonesia

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#0420/ ILCABS778

CAN MYCOBACTERIUM LEPRAE BE TRANSMITTED BY BLOOD DONATION?

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Introduction: While tuberculosis cases can donate blood after successful treatment, leprosy-affected people are sometimes barred permanently – which can impact possibilities in contexts continually short of blood or organ donations. Evidence-based policies are needed, and attitudes of leprosy-affected and the general community may be open to such changes.

Objectives: To screen for presence of *M. leprae* in the blood of new and cured leprosy patients and to evaluate attitudes towards blood or organ donation by leprosy-affected and non-leprosy affected.

Methods: Single-tube, nested PCR was used to screen the blood of new and post-MDT cases. A customized questionnaire was used to survey attitudes towards leprosy-affected blood or organ donations.

Results: The study enrolled 175 leprosy-affected participants: 69 new cases and 106 post-MDT. *M. leprae* DNA was detected in 40 (58%) new cases, in only one LL case 3 months after completion of 24 month MB-MDT, and none in the other 105 post-MDT cases (Range: 0-40 years, average 5 years). Most leprosy-affected participants (60%) were positive towards donating blood; however, they also feared their community would not approve (60%). The majority of both groups, >90% of 80 non-leprosy-affected and >60% leprosy-affected, agreed that scientific evidence could change community opinions.

Limitations: Viability of *M. leprae* detected was not determined. Surveys included non-leprosy-affected people attending training or visiting health services at a leprosy specialty center.

Conclusion: Our evidence supports potential transmission of *M. leprae* in blood from untreated leprosy cases, rarely after recent MDT completion, and undetectable after >3 months post-MDT. Nevertheless, as *M. leprae* viability was not assessed, disease transmission risk remains unclear. Further research should investigate viable transmission. Fear of transmission by blood transfusion or organ donation was mostly anticipatory of the community; and most were positive about the issue.

Keywords: Blood-donation, *M. leprae* in Blood, PCR, Attitude, Post-MDT, Leprosy

#0421/ ILCABS874

OPTIMIZATION OF THE DECISION TREE IN THE NLR SKINAPP TO IMPROVE THE ACCURACY OF DIAGNOSIS.

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Introduction: The NLR-SkinApp was developed to guide and empower frontline health workers in diagnosing and managing skin diseases in countries endemic for skin neglected tropical diseases (NTDs). A study found that the SkinApp's functionality could be improved by building in the relative importance of signs and symptoms in relation to the skin diseases in the SkinApp.

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Objectives: Optimizing the NLR-SkinApp by determining the extent to which consensus can be reached among dermatological experts concerning the frequency patterns and relevance of certain signs and symptoms in skin diseases in skin NTD-endemic countries.

Methods: A mixed-methods design was used; a Delphi panel filled in three rounds of questionnaires and in-depth interviews were conducted for a more in-depth understanding. Participants were dermatologists and other health workers with at least five years of professional experience diagnosing skin diseases in skin NTD-endemic countries (n=17), geographically spread.

Results: Preliminary results show that of the total of 268 items presented in the questionnaires, consensus was reached on 81 items (30.2%) concerning the frequency of appearance of signs and symptoms in certain skin diseases in the first round. After adding 4 items in the second round, consensus was reached on 114 items (41.9%). The highest level of agreement was reached on signs and symptoms of blistering diseases and onchocerciasis. The lowest level of agreement was on signs and symptoms of cutaneous leishmaniasis and folliculitis. More detailed results will be obtained in the third round of the questionnaire and the in-depth interviews.

Limitations: On some diseases, like yaws and podoconiosis, very few participants had sufficient knowledge, affecting the response rate for these particular diseases.

Conclusion: There seems to be limited consensus among specialists on the relative importance of signs and symptoms when diagnosing skin diseases.

Keywords: NTDs, MHealth, Skin diseases, Dermatology, Mobile application, Diagnosis

#0422/ ILCABS899

FEW SHOT LEARNING ALGORITHM DEVELOPED USING LEPROSY SKIN IMAGE DATA FROM INDIA

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Introduction: As per the WHO, the tropical infectious disease leprosy is still prevalant globally in India. Early detection can be improved with innovative public health screening tools, which helps providing treatment on time so that transmission of disease can be prevented. Digital screening applications with artificial intelligence (AI) can help simplify and improve screening accuracy while addressing the issues of resources to reach. In our research work, a skin image based AI method was developed that can identify Leprosy skin lesion from non-Leprosy lesions.

Objective: An AI alogrithm was developed using a siamese network that was trained on skin image collected from leprosy patients in India. This paper experiments with this new AI method, built due to the scarcity of non-Leprosy images in our study to see how we can develop a near accurate model even with the limited Leprosy images.

Data and Methods: The train data is image dataset of 1798 from India with 14 labels in which Leprosy lesions are subgrouped into 9 unique groups based on lesion morphology. The siamese model used in this study has four 2D convolution blocks as encoder follwed by L2 norm as metric and contrastive loss as loss function.

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Experiments and Results: The training is conducted on train data for more than 20000 episodes and reached an accuracy above 85% and tested on Brazil data with three and five way one shot task.

Conclusions: A meta-learning based approach can identify intra class varaiations like in skin diseases like Leprosy

Acknolwedgements: Brazil dataset is obtained with permission from Dr Moraes, Milton Ozório, 2021, "AI4leprosy", https://doi.org/10.35078/1PSIEL, Fundação Oswaldo Cruz, V1.

Keywords: Few Shot Learning, Meta-learning, Siamese network, Artificial intelligence, Screening, Digital

#0423/ ILCABS925

NUTRITIONAL ASSESSMENT IN LEPROSY

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Introduction: Leprosy is a chronic infectious disease with significant morbidity. Malnutrition in leprosy is multifactorial owing to pathological, socioeconomic and psychological causes. This study aims to elucidate the nutritional status of leprosy patients.

Objectives: To assess the nutritional state of patients with leprosy and correlate it with outcome of the disease.

Materials and Methods: A descriptive study was conducted among leprosy patients over a period of one year. Socio-demographic history, calorie intake, clinical details and disease characteristics were noted. Nutritional status was evaluated using body mass index, mid-arm circumference, waist-hip ratio (WHR) and calorie intake. Body fat percentage was calculated from triceps skin fold thickness.

Results: Sixty-two patients were included in the study, with a male: female ratio of 2.4:1.The majority of patients belonged to the borderline tuberculoid spectrum(46.77%). Of the 31 patients in reactional state,30 were on concomitant steroid therapy. Disability was noted in 33 patients. Steroid use and reactional states were significantly associated with over-nutrition as measured by Waist Hip ratio, independent of age, gender or socioeconomic status.

Limitations: 1) Small sample size and lack of control population.

2) Estimation of micronutrient levels would be more objective in correlating with nutritional status.

3) Inclusion of dietary intervention and advice at first and subsequent visits would ensure a comprehensive approach towards patients with leprosy.

Conclusion: Nutritional assessment is an important tool in evaluating patients with chronic infectious diseases like leprosy, especially in India. Waist-hip ratio is a sensitive anthropometric indicator of central obesity and should be incorporated in routine examination of leprosy patients as a holistic approach towards management of the disease.

Keywords: Leprosy, Nutrition, Anthropometry, Waist-hip ratio

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Award Papers

AWARD PAPERS

#0424/ ILCABS754

CHARACTERISTICS AND LONG-TERM OUTCOMES OF PATIENTS WITH PURE NEURITIC LEPROSY

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Introduction: The diagnosis is difficult and delayed in pure neuritic leprosy. There is limited data in the literature about its treatment outcomes.

Objectives: To characterize patients with pure neuritic leprosy and their long-term outcomes, and to compare them with patients with other forms of leprosy.

Patients and Methods: Records of leprosy clinic at a tertiary centre for past seven years(2015-2022) were analysed for various parameters. Baseline and follow-up sensorimotor loss was compared for pure neuritic leprosy patients who agreed to participate physically/telephonically.

Results: A total of 191/1132(16.87%) patients were diagnosed with pure neuritic leprosy in seven years. The mean age and duration of disease at presentation were 33.8 years and 3.89 years respectively. Radial cutaneous nerve thickening was present in 78 (40.84%), out of which 54(69.23%) underwent a nerve biopsy, which showed lymphohistiocytic infiltrate in 24(44.44%), and acid-fast bacilli in 7(12.96%) cases. Nerve conduction studies showed compatible sensorimotor abnormality in 35/37(94.59%) cases. Ultrasound showed thickened nerves in 7/11(63.64%) cases where nerve thickening was clinically doubtful.

Follow-up data were obtained from 70/191(36.65%) patients, with a median follow-up time of 3 years post-treatment. A total of 38(54.29)% showed improvement, 11(15.71%) worsened, and static course in 21(30%). Out of those 33 who reported improvement in sensory symptoms, 4(12.12) had mild, 18(54.55%) moderate, and 11(33.33%) had significant improvement. Out of those 18 who reported improvement in motor symptoms, 10(55.56%) had moderate and 8(44.44%) had good improvement. Out of those 18/70(25.71%) who received treatment for leprosy reaction, 12(66.67%) had improvement.

Limitations: Retrospective design and potential participation bias.

Conclusion: The diagnosis of pure neuritic leprosy was predominantly clinical, with poor documentation through investigations. Improvement with treatment was seen in about half of the patients. Patients who had a recent-onset sensorimotor loss and were treated for leprosy reactions had better outcomes.

Keywords: Pure Neuritic leprosy, Treatment outcomes, Long-term outcomes

#0425/ ILCABS721

LEPROSY TRANSCRIPTOME ANALYSIS REVEALS DIFFERENT IMMUNOLOGIC PATHWAYS ON LEPROMATOUS AND TUBERCULOID POLES

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Introduction: Immune system disruption in leprosy is historically described in literature. Lepromatous and tuberculoid poles are completely different according to clinic manifestations and immune regulation

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is important for the fate of the patient. A better understanding of pathophysiology, detailing biological mechanisms of each process impaired on immune system, is still required.

Objective: To unveil the differences on immunological pathways obtained from differentially expressed genes on both leprosy poles.

Material and methods: Transcriptomic analysis were performed by RNA-seq from skin samples collected by biopsy of eight leprosy patients (4 BL/LL and 4 BT) and 2 health endemic controls. RNA was extracted by TRIzol Reagent and a library was constructed using TruSeq Stranded Total RNA kit. Altered biological pathways were observed by bioinformatics analysis using Reactome database.

Results: Tuberculoid pole showed alteration on classic immune pathways related to MHC-I antigen presentation, endosomal or vacuolar peptides processing and interferon type I and II signaling, while lepromatous pole presented differentially expressed genes on immunoglobulins and complement family (IGH, IGK and C1Q), resulting on altered biological pathways related to diverse steps of complement systems as triggering complement molecules recruitment, activation of complement cascade and modification of classical antibody-mediated complement pathway. Therefore, membrane attack complex (MAC) formation and immune recognition by microorganism opsonization may be altered on lepromatous patients.

Limitations: The results are just from skin lesions, but blood samples are being analyzed now.

Conclusion: Different patterns of genes expressed by each leprosy pole resulted on divergent biological pathways, indicating that classic immunologic recognition is suppressed on LL pole, while other inflammatory mechanisms, as the complement system, are stimulated.

Keywords: Leprosy, Physiopathology, Transcriptome, Skin, Immune system.

#0426/ ILCABS702

PERIPHERAL NEUROPATHY AMONG CONTACTS OF HANSEN'S DISEASE PATIENTS CONTACTS DETECTED BY HIGH-RESOLUTION ULTRASOUND OF THE PERIPHERAL NERVES.

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Introduction: Hansen disease (HD) primarily infects peripheral nerves and there are no HD-patients without peripheral nerve damage. Household contacts of HD-patients (HHC) are at 5 to 10 times higher risk of HD than the general population. Neural thickening is one among the three cardinal signs for defining a case of HD according to WHO guidelines, only considering exclusively palpation examination which is subjective and in the earliest cases may not be detected even for well-trained professionals. High resolution ultrasound (HRUS) can evaluate most peripheral nerves, a validated technique with good reproducibility allowing detailed and accurate examination. Objective: Peripheral nerves HRUS test using HD-protocol as a diagnostic method for neuropathy comparing HHC with healthy individuals-HVs and HD-patients.

Material and methods: In municipalities from different regions of Brazil we selected at random 83 HHC to be submitted to peripheral nerve ultrasound to compare to 49 HVs and 176 HD-patients.

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Results: HHC assessed by HRUS showed higher medians and means of the absolute values of the CSAs of the peripheral nerves and greater asymmetries (?CSA) as compared to HVs at same points. Our results showed higher median and mean absolute values of peripheral nerve CSAs in HD-patients as compared to HCCs at almost all points and the ?CSA in all points were equal. Considering the focality (?TpT) between HHC and HD-patients respectively, the means±SD were 2.7±2.2 / 2.6 ± 2.2 for median nerve and 2.9±2.7 / 3.3± 2.9 for common fibular (p>0.05) while 1.3±1.3 / 2.2±3.9 for the ulnar nerve (p<0.0001). HHCs have asymmetric multiple mononeuropathy in at least 20% of the nerves evaluated and have a higher risk to develop HD-neuropathy. so, assessing more nerve points in HHCs, they become more seemed with HD-patients according to the nerve thickening by HRUS which should be a cutting-edge tool for early leprosy case diagnostic.

Keywords: Hansen disease, Household contacts, Neuropathy, High resolution ultrasound, Cross sectional area, Multiple mononeuropathy

#0427/ ILCABS644

AN OBSERVATIONAL STUDY ON OCULAR CHANGES IN LEPROSY PATIENTS IN POST ELIMINATION ERA IN A TERTIARY CARE CENTRE

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Introduction: Leprosy is a chronic infectious condition principally affecting skin and peripheral nerves, causing disabilities and blindness if not treated in time. Leprosy remains a significant health problem worldwide and India is one of the country with high prevalence of registered patients.

Leprosy can cause ocular changes like keratitis,scleritis,lagophthalmos,corneal anaesthesia,hypersensitivity reactions,madarosis, trichiasis,entropion,chronic dacrocystitis.

Aims, objectives: To study the ocular changes in leprosy patients in a tertiary care centre in post elimination era.

Methods, Materials: This is an observational study conducted at a tertiary care centre where all patients attending leprosy clinic for a period of 2 months(April - May2022) were enrolled.

General examination including a detailed eye examination was done by an ophthalmologist. After taking detailed history, examination of the ocular adnexa, anterior and posterior segment of the eye was done.

Result: 72 patients were examined of whom 72.5% were males, the mean age of patients was 45.8 years (19- 70years) ; 55.2% were suffering from PB leprosy. The mean duration of the disease in MB patients was 18.2 years (range 6-36years) and in PB patients 13.1 years (range 5-30years). There were no patients with borderline leprosy. Ocular lesions,at least one pathology in the eye related to leprosy were seen in 56 (77.77%) patients; 48(66.6%) of these patients were suffering from the disease for more than 10 years. Potentially sight threatening lesions were seen in 30 (42%) patients; approximately 34 (47.77%) patients had more than one eye lesion.

Limitations: Less sample size

Conclusion: The prevalence of ocular lesions in leprosy was found to be high in the study and they were seen more frequently in patients with longer duration of the disease. Routine eye examination and proper follow up of leprosy patients should be done to prevent ocular complications.

Keywords: Ocular Complications in leprosy

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#0428/ ILCABS551

IMPACT OF MULTI-DRUG THERAPY ON NERVE FUNCTION IMPAIRMENT AND DEFORMITIES IN THE LEPROSY PATIENTS AT A TERTIARY CARE HOSPITAL IN INDIA - A RETROSPECTIVE DATA ANALYSIS OF 398 PATIENTS

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Introduction: Protective role of multidrug therapy (MDT) in nerve function impairment (NFI) is debatable.

Objectives: To study-effect of MDT on NFI and deformities in leprosy patients and analyse risk factors associated with worsening of NFI.

Patients/material and methods: Records of leprosy patients treated between June-2010 and March-2016 were retrospectively analysed to study the incidence of new NFI in leprosy patients on treatment. Patients were then classified into those who had NFI at the time of diagnosis/ initiation of treatment (group-A), during or after MDT (group-B) and those who did not develop NFI at all (group-C). The patients were followed up for 5 years after MDT completion

Results: We analysed records of 398 leprosy patient. The mean age was 36.3±14.4 years, and M: F ratio 2.1:1. Of these patients, 87.4% were on MDT-MBR and others on MDT-PBR.

NFI at baseline was observed in 78.4% (Group-A), while 12.3% developed new NFI during therapy and 9.3% developed after completion of treatment. In Group-B, reactions were the cause of NFI in 42.8%, while silent neuropathy was implicated in rest. 26.8% of the patients of Group-B displayed deformities, of these 57.1% developed deformity during MDT therapy (92% on MB-MDT).

Comparing group B and C: male sex (adjusted odds ratio:4.0, p=0.02), disease duration (adjusted odds ratio:1.1, p<0.01), and MDT-MB (adjusted odds ratio:3.61, p<0.01) were statistically associated with presence of NFI, but no significant association was seen with patient occupation.

Those with NFI during-or-after MDT(both PBR, MBR) were 1.1 times more likely to have had a longer disease duration and 4.1 times more likely to be males.

Limitations: Retrospective study.

Conclusion: NFI may develop during or after MDT therapy and reactions are a common cause in majority of patients. Early and prompt diagnosis and treatment of reactions can prevent worsening of NFI and development.

Keywords: Nerve function impairment, Multi drug therapy, Risk factors

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#0429/ ILCABS524

RISK OF DEVELOPING DISABILITY 16 YEARS AFTER DIAGNOSIS IN A COHORT OF PEOPLE AFFECTED BY LEPROSY

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Introduction: Leprosy guidelines suggest following paucibacillary (PB) patients for two years post-multidrug therapy (MDT), and multibacillary (MB) patients for five years. Evidence is needed on the appropriateness of these guidelines in preventing disability longer term.

Objectives: To assess the long-term risk of developing new or worsening of the existing leprosy-related disability among higher-risk patients who have completed MDT.

Materials and Methods: A retrospective cohort of patients registered with non-governmental Referral Centres in India between April 2005 and March 2010 were reached for assessment in 2013 and 2021. Trained staff assessed patients for the presence of leprosy-related disabilities and for the history of complications. Multivariate logistic regression was used to, assess the risk of disability.

Results: Out of the 631 participants with follow-up data from 2013, 326 (51.6%) were available and consented to be re-examined in 2021. Among them, 22 (6.7%) and 35 (10.7%) patients were found to have grade-1 and grade-2 disabilities respectively, at the time of diagnosis. By 2013, progression of disability was observed in 4% (14/326) and from 2013 to 2021 progression was seen in 9.8% (32/326) of the cohort. The progression was associated with the presence of reactions or nerve involvement at any point in time and with MB-type leprosy. Overall, 233 (71.4%) were found to be disability-free at all three points in time (diagnosis, 2013 and 2021).

Limitations: Participants were patients treated at tertiary referral centres, and findings are not generally applicable.

Conclusion: About 1 in 4 higher risk patients experienced some form of disability from the point of their diagnosis to 16 years post-MDT. Given the chronic and dynamic nature of the leprosy-related disability, it is a priority to develop a risk assessment tool for complication and disability development at release from treatment, and at a two-/five-year follow-up period for PB/MB patients, respectively.

Keywords: Disability, Follow-up, Post-MDT, Post-RFT

#0430/ ILCABS361

A CASE CONTROL STUDY OF RESISTANCE TO RIFAMPICIN, DAPSONE AND OFLOXACIN IN TYPE 1 AND TYPE 2 LEPROSY REACTIONS AND THERAPEUTIC IMPACT OF MODIFIED TREATENT REGIMEN ON REACTIONS

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Introduction: Leprosy reactions are acute or subacute episodes with cutaneous and systemic manifestations which can occur anytime during the disease process due to change in immune response of the patient. So far, the focus on resistance study has been on retreatment cases with exclusion of reactional cases. Treatment of

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reactions with steroids and immunosuppressants in the setting of resistance will increase the load of resistant bacilli.

Objectives: To study resistance to rifampicin, dapsone and ofloxacin in patients of leprosy and leprosy reactions.

To study the therapeutic efficacy of modified treatment regimen in patients with resistance.

Materials and methods: A case control study was undertaken over a period of 19 months which included 40 patients of leprosy and 42 patients of leprosy reactions. Complete clinical evaluation was done followed by slit skin smear examination for bacteriological index and skin biopsy for spectrum of disease and resistance study. Screening of resistance was done using pPCR HRM assay. Mutations in rpoB, folP and gyrA was detected using PCR sequencing approved by WHO.

Results: Resistance was seen in 14/42(33.3%) of cases as compared to 3/40(7.5%) of controls(p=0.008). Reactions included 9/27 (33.3%) of T2R (five Late ENL, three Recurrent ENL and one Chronic ENL) and 5/15(33.3%) of T1R (four downgrading and one upgrading reaction). Of the cases, four(9.5%) had dapsone resistance, five(11.9%) had rifampicin resistance, two(4.8%) ofloxacin resistance, one(2.48%) had dapsone+ofloxacin resistance; two(4.8%) had rifampicin+dapsone resistance. Of the cases initiated on modified anti leprosy treatment(n=7), only three cases had clinical improvement.

Limitations: Long follow up period complicating evaluation of efficacy of modified treatment regimen.

Conclusion: Resistance was more pronounced in the reactional group. Rifampicin resistance was found only in the reactional group. Administration of modified anti leprosy treatment did not consistently control reactions.

Keywords: Leprosy, Reactions, Resistance, Treatment

#0431/ ILCABS292

A DESCRIPTIVE STUDY OF PERIPHERAL NERVES OF LEPROSY PATIENTS BY ULTRASONOGRAPHY AND COLOUR DOPPLER ALONG WITH CLINICAL CORRELATION

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Introduction: Leprosy is a chronic disease where peripheral nervous system, skin, and other tissues are affected. Sonography provides an objective measurement of nerve damage such as increased thickness, abnormal echotexture, and increased vascularity while clinical examination of nerves in leprosy patients is subjective.

Objectives: 1. To study ultrasound and colour doppler features of bilateral ulnar nerves, bilateral common peroneal nerves and bilateral posterior tibial nerves in leprosy patients.

2. To correlate the above findings with clinical findings in patients with leprosy.

Material and Methods: A total of 50 patients with leprosy were included in this study. After detailed history and clinical examination, patients were subjected to ultrasound and colour doppler examination of the bilateral ulnar, common peroneal and posterior tibial nerves.

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Results: Most common type was borderline tuberculoid (BT) which was seen in 56%. Type 1 reaction was seen in 24% patients and type 2 reaction was seen in 10% patients. In this study, clinical enlargement was detected in 125 out of the 300 nerves examined, while thickening was observed on USG in 166 nerves. The most common ultrasound finding was focal thickening of the nerve (54%). Only 3 of our patients showed increased vascularity on colour doppler. Asymmetrical nerve thickening of the 3 nerves was observed across the different poles of leprosy.

Limitations: Control population was not used. For the classification of CSA as normal or abnormal, we have used previously published values obtained from healthy volunteers.

Conclusion: In this study we detected thickening of more peripheral nerves on USG than clinical palpation. Among the various changes detected on USG, thickening was the most common. Asymmetrical thickening was noted across the spectrum. USG abnormalities of increased CSA and changes in echotexture can be used as a newer tool to methodically diagnose nerve thickening.

Keywords: Leprosy, Ultrasound, Peripheral nerves, Colour doppler

#0432/ ILCABS102

TREATMENT DEFAULTERS IN LEPROSY: MAGNITUDE AND CONTRIBUTING FACTORS

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Introduction: Treatment defaulters endanger their own health along with putting leprosy control programmes at risk.

Objectives: To study magnitude and factors contributing to treatment default in leprosy.

Material and Methods: A hospital-based survey was done in tertiary centre from July'17-June'21 including all defaulter leprosy cases who failed to complete their blister packs in stipulated time (6/9 months-PB, 12/18 months-MB). After informed consent/assent, patients were subjected to predesigned questionnaire mentioning demography, pertinent disease details and reasons for default. Minors were subjected to modified survey after assent from guardian/s. After noting responses, all patients were offered counselling regarding disease, importance of treatment and consequences of undertreatment. Family members were provided counselling, screening for leprosy and single dose rifampicin as chemoprophylaxis as per eligibility.

Results: Total of 754 cases were screened out of which 294 patients (38.99%) fulfilled the criteria as "defaulters". From 274 patients who gave consent for the survey, 73.36% (n=201) were MB and 26.64% (n=73) PB cases. Mean age was 37.62±10.4 years with 66.61% females and 33.39% males. Most common occupation was manual labour in 66.68% (n=183). Most common underlying reason for treatment default was loss of wages and inability to afford to travel to centre for regular therapy, in 40.51% cases (n=111). Reasons were treatment related in 90.51% (n=248): feeling of no improvement with treatment, aggravation of symptoms, redness/itching, high pill burden and fear of adverse effects of drugs; social-cultural factors in 71.53% (n=196): refusal by family members for treatment, migration and stigma in community. On multivariate analysis, significant association was seen with female gender, MB leprosy and low socio-economic class. Total of 61 doses of rifampicin prophylaxis were dispensed to eligible contacts.

Limitations: Residual confounders/bias, possibility of recall bias

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Conclusion: Treatment non-adherence is often due to feasibility; programme outreach and active surveillance for treatment completion can prove rewarding.

Keywords: Defaulters, Non-adherence

#0433/ ILCABS96

LOW DOSE THALIDOMIDE IN STEROID DEPENDENT ERYTHEMA NODOSUM LEPROSUM

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Introduction: Thalidomide is considered gold standard for Erythema Nodosum Leprosum (ENL). However, this drug has cost and feasibility deterrents in practice. Many dosage regimens have been proposed with variable results.

Objectives: To assess efficacy and safety of low dose thalidomide in steroid dependent ENL.

Material and Methods: A randomized, prospective study was carried out in tertiary centre for one year after ethics approval. Inclusion criteria were ENL patients>18 years and either sex with ENLIST score >= 10, relapsing on lowering doses of prednisolone below 30mg. Pregnant/lactating/women of child-bearing potential and known drug hypersensitivity were excluded. After baseline screening and investigations, patients were randomly allocated to two groups: Group A-T.Thalidomide 100mg BD for 2 weeks and maintained on 100mg OD and prednisolone gradually tapered off; and Group B- T. Prednisolone(1mg/kg/day), tapered according to standard guidelines. ENLIST and modified Ramu's scoring were done bimonthly for three two months followed by monthly till end of study period.

Results: 74/85 patients completed study, 37 in each group. At baseline, both groups were comparable in terms of age, sex, type of leprosy and bacillary index. Resolution of symptoms and significant regression in cutaneous lesions was achieved in mean time of 6.15 days and 14.54 days respectively in group A, whereas these mean values were 10.51 and 19.6 days, respectively in group B($p<0.05$). Mean period of remission in groups A and B were 9.51 months and 4.4 months, respectively. 8.3%(3/36) in group A and 59.4%(22/37) in group B had recurrences. More patients in group B(27.03%) experienced side effects compared to group A(16.22%), without any serious adverse event.

Limitations: Smaller sample size, short follow-up duration

Conclusion: Low dose thalidomide provides earlier symptom resolution, lower recurrence rates and longer remission period. It gives equivalent clinical response; reduces incidence of dose-dependent adverse effects and is cost-effective.

Keywords: Thalidomide, ENL, Steroid-dependent ENL

#0435/ ILCABS882

GENOTYPING AND DRUG RESISTANCE STUDIES OF *M. LEPRAE* STRAINS FROM CENTRAL INDIA

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Introduction: Leprosy is an infectious disease majorly endemic to Asia and South America. Due to whole genome sequencing approaches, *M. leprae* strains have been classified into 16 SNP subtypes (1A–4P). These have helped in establishing the phylogeographical correlation. In India, 76% strains are identified as 1D

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genotype. Although leprosy is efficiently treated by multidrug therapy resistance to first-line and to second-line drugs is reported from worldwide as well as India.

Objectives: Genotyping using SNPs unique to ID genotype and drug resistance prevalence against Rifampicin, Dapsone and Ofloxacin were checked by targeting rpoB, folP1 and gyrA genes in the *M. leprae* strains from central India.

Patients / material and methods: Skin biopsies (n=317) from NSCB medical college, Jabalpur, were collected and taken forward for DNA extraction from January 2020 to May 2022. PCRs targeting the SNP specific for 1D genotype and drug resistance determining region were done followed by Sanger sequencing. The bioinformatic analysis for was done for detection of SNPs and mutation.

Results: Upon data analysis, although 1D genotype was most prevalent (n=285) yet non-1D genotypes were also identified (n=13). No mutations associated with drug resistance in rpoB in all samples analysed so far were found. While n=1 for folP1 and n=23 samples for gyrA mutations associated with drug resistance were found, which is re-assuring of the continued success of MDT. Similar to other parts of India, genotype 1D is most prevalent in Jabalpur and adjoining areas.

Limitations: Whole genome sequencing the *M. leprae* strains from India can uncover SNPs and drug resistance relevant mutations providing a better resolution.

Conclusion: The discovery of novel mutations/ phylogeographic markers in the Indian strains may hold useful information about *M. leprae* genomics. Though currently there are no drug resistance associated mutations detected, a continued surveillance will be useful to monitor the trends.

Keywords: Genotyping, Drug resistance, Central India, Schedule tribes

#0436/ ILCABS879

COMPARATIVE HOST TRANSCRIPTOMICS AS A TOOL TO IDENTIFY BIOMARKERS FOR EARLY DIAGNOSIS OF LEPROSY

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Background: Comparative host-transcriptomics has immense utility in finding biomarkers in several diseases. Laboratory diagnosis of leprosy is challenging due to complex factors related to host genetics and the long incubation period of the disease. These factors make human-transcriptomics studies very difficult in leprosy owing to several confounding elements such as uniformity and duration of infection.

Objectives: The only animal model of leprosy which is nine-banded armadillo, exhibits differential susceptibility to leprosy. Thus, we have used the armadillo model for identifying the biomarkers of leprosy progression by comparing leprosy susceptible and resistant animals using RNA-Sequencing. This revealed differentially expressed genes that are involved in host innate immunity and gene regulation.

Materials and Methods: Peripheral blood mononuclear cells collected and cryo-preserved at 4 months post-infection from the resistant and susceptible armadillos were revived and stimulated with *M. leprae* antigens and their transcriptome profiles were compared using RNA-Sequencing & bioinformatics.

Results: A total of 331 differentially expressed genes (DEGs) were identified. The DEGs could differentiate the resistant and susceptible animals. We compared our findings with other leprosy host-transcriptomics studies and identified IDO1, CD38, and IL10 genes to be upregulated in susceptible armadillos. These

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genes have recently been associated with leprosy progression in humans and therefore could be valuable biomarkers. Particularly, the IDO1 has been associated with immunosuppressive activity and may be linked to the poor cell-mediated immunity observed in lepromatous leprosy cases.

Limitations: A large number of datasets with similar experimental settings might be required for accurate biomarker identification while comparing the results of expressed transcriptomes.

Conclusion: Functional enrichment analysis of the DEGs showed their association with the complement system, immunoregulatory response, and neutrophil-mediated immunity. These findings will be useful for designing improved diagnostics for the early detection of leprosy.

Keywords: Leprosy, Biomarker, Transcriptomics, Differentially expressed genes

#0437/ ILCABS822

EPISTASIS REGULATES INFLAMMATORY BIO MOLECULE EXPRESSION IN LEPROSY

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Leprosy is a disease primarily affecting skin and peripheral nerves. Infection with Mycobacterium leprae produces a spectrum of disease ranging from tuberculoid leprosy to lepromatous leprosy, with borderline forms in between (BT, BB & BL). *M leprae* induced host responses trigger the release of cytokines, antibodies and enzymes against the pathogen and nerve tissue.

Aims & Objectives: The present study is a mendelian analysis of a range biomolecules produced in leprosy patients, patients in lepra reaction, healthy controls and other neuropathies.

Method: The levels of biomolecules was categorized as high and low and comparison of a set of molecules was statistically ascertained to Mendelian or epistatic ratios of 9:3:3:1; 9:3:4; 9:7; 13:3; 12:3:1 and 15:1. The Mendelian method of phenotypic segregation resulted in four categories: both high, both low and either of the molecule high and low. The present study was carried out in 88 leprosy patients; 155 patients in lepra reactions; 39 HIV neuropathy; 52 other neuropathies; and 116 healthy controls. BuChE, Ceramide-Aby, TNF-α (plasma TNF & SNPs TNF (-238, -308), IFN–γ (+874) were the 7 molecules studied in each group. In 155 reactional patients 17 molecules were concomitantly studied. Chi-square test was performed to ascertain Mendelian or non-Mendelian rations.

Results: and discussion: According to classical genetics various segregation ratios 9:3:3:1; 9:3:4; 9:7; 13:3; 12:3:1 and 15:1 as classically observed in dihybrid ratios were observed in the analysis suggesting epistatic regulation in neuropathies and suggests molecular cross talk patterns between the three tissues studied -Plasma, Nerve and Skin. Epistasis at gene to protein level (Plasma, TNF-α / IFN–γ, to their SNP) was observed. Understanding epistasis in immuno pathogenesis helps us select multiple drug targets to regulate inflammatory processes as well as gives insight into unique pathogenic mechanisms occurring in leprosy reactions and their interventional strategies.

Keywords: Epistasis, Mendalian Ratios, *M. Leprae*

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#0438/ ILCABS797

UNUSUAL CLINICAL PRESENTATIONS IN LEPROSY: A CASE SERIES

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Introduction: Conventionally, leprosy has been divided into various spectra of presentation ranging from the tuberculoid to the lepromatous pole as well as histoid, pure neuritic leprosy and reactional states that manifest as acute episodes during the chronic course of the disease. This however might seem an over-simplification. On top of the spectral manifestations, leprosy may present in unusual clinical forms that may further obfuscate the diagnosis.

Objectives: To highlight unusual clinical presentations of leprosy occurring across all spectra

Methods: Clinical diagnosis followed by a histopathological confirmation of ten unusual presentations of leprosy during an 8-year period was performed.

Results: Our case series describes ten cases of eccentric presentations of leprosy occurring across the entire spectrum of tuberculoid to the lepromatous end. These include presentations mimicking benign conditions such as psoriasiform plaques, verrucous plaques, hypertrophic scars as well as perforating dermatosis, while on the other hand also mimicking some more grave diseases such as cutaneous lymphomas and histiocytosis. Many of these rare presentations remain hitherto unreported yet like leprosy presenting as primary hypogonadism and annular plaques mimicking erythema annulare centrifugum and erythema gyratum repens.

Conclusion: Sarcoidosis and syphilis have since a long time been labeled as great mimickers in dermatology owing to their wide spectrum of presentations. The current case series is an attempt to highlight multitude of unusual presentations of leprosy that need a separate mention in order to make a correct and timely diagnosis and prevent the debilitating sequelae of this otherwise treatable infectious disease.

Keywords: Leprosy, Dermatology, Unusual, Atypical, Clinical manifestations, Lepra-reactions

#0439/ ILCABS747

RLEP QPCR OF SLIT SKIN SMEAR IS THE BEST COMPLEMENTARY EXAM TO CONFIRM LEPROSY DIAGNOSIS

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Although the knowledge about science and technology of laboratorial tools increased exponentially in the 21st century, leprosy continues to be diagnosed based only on clinics in a context of loss of expertise during the last decades. In this work at the reference center of Pará state, Brazilian Amazon, we evaluated 351 cases (classic clinical forms by Ridley and Joplin, oligosymptomatic and asymptomatic cases) and 482 healthy

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contacts. Besides clinical examination by experienced leprologists, Acid Fast Bacilli (AFB) and RLEP qPCR from Slit-Skin Smear (SSS), IgM Anti-PGL-I serology, and, in those individuals who had dermatological lesions, a skin biopsy was performed for histopathological and molecular analysis of the RLEP region. When comparing the tests, SSS RLEP qPCR showed greater positivity among leprosy cases, 227/313 (72.5%), followed by the IgM anti-PGL-I serology, 197/322 (61.2%). RLEP qPCR of skin lesion biopsy was positive in 101/175 (57.7%), while AFB were detected in 116/278 (41.7%) SSS and in 29/115 (25.2%) histopathology samples of skin lesion. In contrast, healthy contacts SSS RLEP qPCR showed 128/433 (29,6%) positives, while the IgM anti-PGL-I serology was positive in 199/416 (47,8%). Interestingly, 32 (6.2%) of 514 healthy contacts were positive for very scarce AFB in SSS and positive for RLEP qPCR, becoming new cases. The SSS RLEP qPCR and anti-PGL-I serology showed higher sensitivity (72.5% and 65.8%, respectively), and specificity (70.5% and 52.2%, respectively). In the agreement of laboratory tests with the clinical diagnosis, we found that the SSS RLEP (kappa = 0.42) showed better agreement than the anti-PGL-I serology (kappa = 0.13) in leprosy cases. In conclusion, the amplification of the RLEP region of Mycobacterium leprae in SSS is an important complementary exam for the diagnosis of leprosy, even in patients with early clinical signs.

Keywords: Leprosy diagnosis, RLEP qPCR of SSS, Laboratory tests

#0440/ ILCABS730

A STUDY ON ROLE OF HIGH RESOLUTION ULTRASONOGRAPHY IN THE DIAGNOSIS OF LEPROSY NEUROPATHY WITH ELECTROPHYSIOLOGICAL CORRELATION

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Introduction: Leprosy is a chronic infectious granulomatous disease predominantly involving skin and peripheral nerves, and also one of the leading causes of treatable peripheral neuropathy in many developing countries. Nerve function impairment(NFI) is noted in almost 10-15% of new cases of which significant proportion of people develop lifelong functional disability leading to economic and social seclusion. Both Nerve conduction studies (NCS) and High resolution ultrasonography (HRUS) are non-invasive, safe, rapid techniques that are useful in detecting neuropathy before it manifests clinically.

Aims and objectives: To evaluate the role of HRUS in diagnosing clinical and subclinical nerve involvement in leprosy with electrophysiological correlation.

Patients and methods It is a prospective observational study conducted over 20 months at DVL department in a tertiary health center. 50 newly diagnosed leprosy cases and age,sex matched 50 healthy controls were assessed.Clinical, sonographic and electrophysiological data of 3 pairs of nerves(bilateral ulnar,median,common peroneal) in each individual were recorded and analyzed.

Results: Out of 300 nerves analyzed in leprosy patients, 97 showed changes clinically, 184 on NCS and 189 on HRUS. When combined,HRUS and NCS detected 224/300 nerves.On HRUS, focal thickening(62.9%),diffuse thickening(10.7%),fusiform thickening(9.8%), hypoechogenecity(62.5%) and increased vascularity(33.03%) were noted.The mean cross sectional area of nerve in leprosy cases was higher and statistically significant when compared to controls.The most common pattern on NCS was isolated demyelination followed by demyelination with secondary axonal changes.Temporal dispersion and conduction block signify demyelination and can be considered early markers of neuritis. HRUS with Color

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Doppler showed early changes of nerve damage and inflammatory activity especially useful in Pure Neuritic Hansens and Lepra reactions.

Limitations: Small sample size, single center study.

Conclusion: WHO global leprosy strategy 2021-2030 entitled 'Towards Zero leprosy' focuses on 90% reduction of new cases with Grade-2 diasbility.HRUS and NCS are useful tools in early diagnosis of NFI(subclinical neuropathy)and prevention of disabilities.

Keywords: Leprosy neuropathy, HRUS, Subclinical neuropathy, NCS, Color Doppler

#0441/ ILCABS361

A CASE CONTROL STUDY OF RESISTANCE TO RIFAMPICIN, DAPSONE AND OFLOXACIN IN TYPE 1 AND TYPE 2 LEPROSY REACTIONS AND THERAPEUTIC IMPACT OF MODIFIED TREATENT REGIMEN ON REACTIONS

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Introduction: Leprosy reactions are acute or subacute episodes with cutaneous and systemic manifestations which can occur anytime during the disease process due to change in immune response of the patient. So far, the focus on resistance study has been on retreatment cases with exclusion of reactional cases. Treatment of reactions with steroids and immunosuppressants in the setting of resistance will increase the load of resistant bacilli.

Objectives: To study resistance to rifampicin, dapsone and ofloxacin in patients of leprosy and leprosy reactions.

To study the therapeutic efficacy of modified treatment regimen in patients with resistance.

Materials and methods: A case control study was undertaken over a period of 19 months which included 40 patients of leprosy and 42 patients of leprosy reactions. Complete clinical evaluation was done followed by slit skin smear examination for bacteriological index and skin biopsy for spectrum of disease and resistance study. Screening of resistance was done using pPCR HRM assay. Mutations in rpoB, folP and gyrA was detected using PCR sequencing approved by WHO.

Results: Resistance was seen in 14/42(33.3%) of cases as compared to 3/40(7.5%) of controls(p=0.008). Reactions included 9/27 (33.3%) of T2R (five Late ENL, three Recurrent ENL and one Chronic ENL) and 5/15(33.3%) of T1R (four downgrading and one upgrading reaction). Of the cases, four(9.5%) had dapsone resistance, five(11.9%) had rifampicin resistance, two(4.8%) ofloxacin resistance, one(2.48%) had dapsone+ofloxacin resistance; two(4.8%) had rifampicin+dapsone resistance. Of the cases initiated on modified anti leprosy treatment(n=7), only three cases had clinical improvement.

Limitations: Long follow up period complicating evaluation of efficacy of modified treatment regimen.

Conclusion: Resistance was more pronounced in the reactional group. Rifampicin resistance was found only in the reactional group. Administration of modified anti leprosy treatment did not consistently control reactions.

Keywords: Leprosy, Reactions, Resistance, Treatment

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#0442/ ILCABS261

DETECTION OF *M. LEPRAE* DNA IN HOUSEHOLD CONTACTS OF LEPROSY PATIENTS BY USING MULTIPLEX PCR

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. Diagnosis of leprosy is mainly based on clinical signs and symptoms. Household contacts (HHCs) of leprosy patients have a higher risk of contracting leprosy in endemic areas of leprosy. Early diagnosis and treatment of leprosy is the most effective way to break the chain of transmission of the disease. Multiplex PCR (MPCR) is a more efficient detection tool that utilizes more than one gene specific to *M. leprae*.

Objective: The present study was aimed to detect *M. leprae* DNA in nasal swabs in HHCs of paucibacillary (PB) and multibacillary (MB) patients by using MPCR.

Material and Method: HHCs (n = 90) of leprosy patients were recruited out of which nasal swab samples of HHCs of PB patients (n = 32) and HHCs of MB patients (n = 58) were collected from different hospitals of host institute. The bacterial indexes (BI) of PB patients were negative while BI of MB patients ranged from 3+ to 6+. DNA was extracted from all samples using lysis method. MPCR was done utilizing three gene targets RLEP, 16SrRNA and sodA specific for *M. leprae*. The amplified products were analyzed by electrophoresis on 4% agarose gel.

Results: It was observed that 34.37% (11/ 32) household contacts of PB patients were positive for *M. leprae* DNA by MPCR. Similarly in household contacts of MB patients, 51.72% (30/ 58) were positive by MPCR.

Limitation: Sample size is low.

Conclusion: Household contacts of leprosy patients are the risk population that has to be screened for early detection of the disease. Multiplex PCR appears to be an efficient tool which can be used for surveillance of HHCs.

Keywords: Leprosy, Household contacts, Multiplex PCR

#0443/ ILCABS226

BARRIERS AND FACTORS AFFECTING SELF-CARE KNOWLEDGE AND PRACTICE AMONG PEOPLE AFFECTED BY LEPROSY IN LEPROSY RECOVERED VILLAGE IN TUBAN, INDONESIA

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Introduction: Self-care is a key component of leprosy disability prevention, but good self-care knowledge and practice among people affected by leprosy is rarely reported.

Objective: To assess knowledge and self-care practices among people affected by leprosy and explore its factors affecting and barriers to develop an effective self-care program.

Methods: 60 people affected by leprosy from Nganget leprosy recovered village were recruited in this mix-method study. Quantitative data including socio-demographic, leprosy characteristics, self-care program,

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knowledge, practices, and frequency of practice were collected using questionnaires. Qualitative data about barriers of self-care practice were collected using in-depth interviews. Bloom's cut off point was used to describe self-care knowledge and practice. Logistic regression and chi square were used for analysing quantitative data. Thematic analysis was used to analyse the qualitative data.

Results: More than half of respondents have poor self-care knowledge (53.3%) and poor self-care practice (70.0%). Respondents' self-care knowledge is significantly associated with their self-care practice (p=0.000). Factors that significantly related to self-care knowledge are education and reading ability (p=0.038), living with companions (p=0.029), and ever getting self-care education before (p=0.01). Self-care practices are significantly affected by factors including duration since completing MDT treatment (p=0.049) and ever getting self-care education before (p=0.0035). Most of the respondents practice self-care 1 to 7 times a week. Qualitative finding shows that barriers to practice self-care are working, low awareness, limited tools and medication, and disability.

Limitation: This study was implemented in leprosy recovered village where most of population are people affected by leprosy. The result may only be representative in the similar setting context.

Conclusion: Poor self-care knowledge and practice have been found in this study. Effective intervention is needed to improve the self-care knowledge and practice with respect to factors and barriers in the community.

Keywords: Self-Care, Leprosy, Barriers, Factors, Knowledge, Practice

#0444/ ILCABS80

POLYMORPHISM OF CYTOKINE GENE PROMOTER REGION MAY BE ASSOCIATED WITH CLINICAL NON-RESPONSE OF HANSEN'S DISEASE- A CROSS SECTIONAL INSTITUTION-BASED STUDY FROM EASTERN INDIA.

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Introduction: relapse and non responders are common in leprosy . It was suggested that cytokine gene polymorphism might be associated with altered host response to bacilli.

Objective: To find an association of host gene polymorphism in the IFNγ and in the promoter region of TNFα and IL -6 and the clinical response after multidrug therapy.

Methods: A total number of 417 patients, who were diagnosed as cases of leprosy clinically and/or microbiologically, were included in the study. Whole genomic DNA was extracted from tissue samples from lesional skin and was analyzed for the presence of bacterial DNA. 382 leprosy patients with presence of bacterial DNA were enrolled in the study and polymorphism at TNFα (rs1800629G/A and rs361525G/A), and IFNγ (rs62559044A/T), determined by amplification refractory mutation system PCR (ARMS PCR) and polymorphism at IL-6 (rs1800795G/C), determined by custom TaqMan SNP Genotyping Assay system. 112 healthy control cases were also studied for the same.

Results: The patients were followed up for 12 months post completion of MDT.246 were found to be clinically MDT responder (MDT-R) and 136 patients were found to be clinically MDT non-responder (MDT-NR). Clinical non response was defined as either of i) persistence activity of old lesions, ii) appearance of new lesions or new nerve involvement, and iii) appearance or persistence of lepra reaction. Polymorphism

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of TNFα genes in both rs1800629 A and rs361525 A and IL-6 rs1800795 C were significantly associated with leprosy disease in comparison to healthy control. Same polymorphisms were also found to be significantly associated with MDT-NR in comparison to MDR-R. However, polymorphism at IFNγ rs62559044 T did not showed any significant association with leprosy disease as well as MDT-NR.

Cconclusion: variant allele at TNFα and IL-6 promoter region could play an important role in disease prognosis and clinical response to MDT.

Keywords: Mycobacterium leprae, Single Nucleotide Polymorphism, Leprosy disease relapse, TNF alpha, IFN gamma, IL 6

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EPIDEMIOLOGY AND CONTROL

#0445/ ILCABS2

DATA WORKFLOW FOR GEOSPATIAL METHODS OF CLUSTERING LEPROSY CASE DATA

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Introduction: While many leprosy elimination targets have been met at the national level, high case detection rates persisted at subnational levels, often geographically distributed in specific areas or clusters. These clusters can be identified by case mapping followed by spatial epidemiological analysis.

This need for specific leprosy mapping, spatial and cluster analysis is of increasing importance and priority. Different mapping methodologies and tools are currently used. There is a need for standardized approaches and tools to help inform cluster analysis and targeted, cost-effective interventions, such as contact tracing combined with the provision PEP.

Description: To address the need for a cluster analysis tool, the authors conducted a COR-NTD funded study to assess how various geospatial and statistical clustering techniques can be applied to leprosy data. The study design gathered case-based and spatial data from different settings in Nepal, Tanzania and Myanmar and explored various geospatial statistical methods to identify clusters. One of the primary deliverables was a data workflow. This tool can serve as a guide from data collection to map production to spatial analysis. Data collection can be gathered through established data collection and management processes and should include steps related to cleaning, validating, and collecting any missing data, specifically geospatial data needed. Map production shows the disease distribution and rate using indicators such as new case detection rate, disability rate, and a heat map of disease distribution. Lastly, based on data availability and quality, GIS capacity, appropriate spatial analysis tools can be applied to help statistically identify clusters.

Conclusion: This workflow and the associated toolkit can help provide a framework and sequence of steps to progress through the data and mapping process. This visual data flow can support leprosy program managers to effectively collect and use data to implement strategies that can be more geographically focused and cost-effective.

Keywords: Mapping, Cluster, Leprosy, NTD, GIS

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#0446/ ILCABS37

MASS DRUG ADMINISTRATION FOR LEPROSY CONTROL IN KIRIBATI: THE COMBINE PROJECT

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Introduction: Kiribati has high rates of leprosy (15/10,000 population) and tuberculosis (TB) (425/10,000). Modeling predicts that post-exposure prophylaxis (PEP) with single dose rifampicin (SDR) for household contacts will produce a slow fall in the new case detection rate (NCDR), mass SDR a rapid fall, and both together a rapid and sustained fall.

We are implementing a prospective study to screen and treat the whole population of South Tarawa for active leprosy, provide PEP to household contacts, and administer whole-population mass chemoprophylaxis (COMBINE study). This study complements community-wide screening for TB and achieves mass chemoprophylaxis using either SDR or rifamycin-based TB preventive treatment (TPT) (PEARL study).

Study question: Can community-wide screening and treatment for active leprosy, combined with PEP and mass chemoprophylaxis sustainably reduce the leprosy NCDR?

Objectives: To determine, 1) the effectiveness of active leprosy case-finding and whole population chemoprophylaxis for durably reducing NCDR, 2) the feasibility of combined mass screening for TB and leprosy, 3) the spatial relationships between TB and leprosy cases.

Methods: Effectiveness will be determined by comparing the NCDR in South Tarawa (55% of Kiribati population) before and after the intervention and with the NCDR in the rest of Kiribati (control group) over 5 years.

Feasibility will be assessed using mixed quantitative and qualitative methods including post hoc analysis of SDR coverage, prospective economic surveys of resource requirements and costs and focused interviews on barriers to implementation.

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Geospatial and social data will be used to map relationships between TB infection and disease and leprosy

Results: Implementation recently commenced and will be discussed.

Limitations: The progressive roll-out of mass SDR over 2-3 years may permit re-infection. Long-term follow-up will be necessary to determine the durability of impact.

Conclusions: Combining leprosy and tuberculosis screening, treatment and prophylaxis offers efficiency

Keywords: High prevalence, Whole population screening, Mass chemoprophylaxis, Tuberculosis,

#0447/ ILCABS39

AN OVERVIEW OF LEPROSY TRANSMISSION IN EUROPE OVER THE PAST 200 YEARS.

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Introduction: Leprosy has been in decline throughout Europe for the past 200 years. Until 1872, the cause of leprosy was hotly debated, but since its infectious nature was demonstrated, discussion about how to reduce transmission has been equally vigorous. Data on leprosy cases are incomplete, but some useful inferences can be made from what is available. WHO has proposed indicators for the certification of countries as leprosy-free.

Perspective: Three seminal advances in the study of leprosy occurred in Norway in the mid-19th century. The first detailed clinical description of leprosy was published in 1847. The first National Register for any disease – the Leprosy Register in Norway, started in 1856 – provided data to demonstrate the epidemiology of leprosy. And Mycobacterium leprae was discovered by Armauer Hansen in 1872, proving it to be an infectious disease.

Leprosy had more or less disappeared from NW Europe by 1900, except for Norway. Southern and Eastern Europe saw a steady decline in cases, but few data are available for the period before 1945. The best indicator of ongoing transmission is the rate of new cases in children. Data are incomplete, but it seems likely that transmission had stopped throughout Europe by the end of the 20th century. Leprosy still occurs sporadically in the elderly (infected many years ago) and in people traveling from endemic areas, but the risk of further transmission is negligible.

Possible causes of this decline, especially after 1945 as treatment with dapsone became available, were socio-economic development, BCG in infancy and rigorous contact tracing.

Conclusion: Lessons learned from the decline of leprosy in Europe are applicable to other low endemic situations.

Keywords: Leprosy, Transmission, Europe

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#0448/ ILCABS53

HISTOID LEPROSY: CASE SERIES FROM NON-ENDEMIC REGION IN POST-ELIMINATION ERA

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Introduction: Histoid leprosy (HL) is a rare variant of lepromatous leprosy (LL) with unique histopathological findings and a characteristic bacterial morphology. HL occurs in highly bacilliferous patients such as LL or borderline LL and indicates the reservoir of infection. We report the clinical, histopathological and bacteriological features of four patients with de novo HL.

Case Series: The patients presented with asymptomatic skin papules on face and trunk over a couple of years. Their past medical and family history was non-contributory. There were multiple, discreet, shiny, dome-shaped, skin-colored to erythematous papules and nodules seen on face, trunk and extremities. Slit skin smeared showed bacteriological index of 5+. Biopsy was done and histopathology revealed collection of histiocytes in whorled pattern in dermis.

Discussion: HL is first described by Wade in 1960 as a histological concept of bacillary-rich leproma composed of spindle-shaped cells, along with the absence of globus formation (Wade 1960). HL mainly occurs in the settings of dapsone monotherapy patients (as a relapse indicating earlier response), inadequate or irregular treatment (exhibiting mutant organisms) or seen as de novo cases. Lepra reactions are rare in HL; one of our patients also developed ENL during the course of MB-MDT after 6 months. Microbiological confirmation of drug-resistant strains with mouse footpad inoculation was not done as the facility was not available here. This is the limitation of the study.

Conclusion: Occurrence of de novo cases of HL from a non-endemic area may pose problems of missing/delay in the diagnosis and threat in the process of eradication of leprosy. It raises the question of efficacy of conventional MDT in some of such patients, thus necessitating the need of studies to monitor or following-up these cases for relapse or transmission of disease among closed contacts and measures to control them.

Keywords: Histoid, Non-endemic, Elimination

#0449/ ILCABS71

PERCEPTIONS OF PATIENTS COMMUNITY MEMBERS AND HEALTH PROFESSIONALS ON ACHEIVEMENT OF ZERO DEFORMITY IN INDIA

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Introduction: Zero Deformity is one of the three pillars of the Zero leprosy program as per the target by WHO. In order to achieve this a drastic change needs to be adopted in the operational aspects of National Leprosy Elimination Programme (NLEP) in India.

Research question and objectives: To determine the perception of community members and health professionals working in NLEP towards achievement of zero deformity.

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The objective of the study is to understand the perceptions of community members, Leprosy workers, Patients towards achievement of Zero deformity by 2030.

Methodology: A total sample of 100 individuals have been interviewed form the above categories. The study was carried out in an urban Leprosy tertiary care Hospitals from New Delhi. Interview schedule consists of open-ended and structured question was used for data collection.

Finding: The finding show that about 50% of respondent are not aware of the targets about achieving Zero Deformity by 2030 and those aware are mostly pessimistic about meeting the target. Majority of the respondents identified that Lack of regular methods of case detection for early diagnosis in practise, irregular treatment and nonavailability of MDT in leprosy treatment centres at the right time are the major reasons for deformity. They suggested Leprosy Researchers need to more emphasize on developing early diagnostic tests. Government and policy makers take necessary decisions to establish the village level Leprosy communities involving the cured Leprosy patients, PRJ members in order to reduce Leprosy Deformity to the maximum extent.

Limitations of study: This study was conducted with limited sample of 100 and was conducted in defined geographical area.

Conclusion: The way currently NLEP functions shows it is a challenge to achieve Zero Deformity and it is evident that community has to take the responsibility under the facilitation of NLEP workers.

Keywords: Leprosy, Zero leprosy, Deformity

#0450/ ILCABS77

INVESTIGATING A POSSIBLE LINKAGE OF WORKING WITH MIGRANT WORKERS AND NEW LEPROSY CASES AMONG INDIGENOUS POPULATIONS OF SHIMLA, HIMACHAL PRADESH, INDIA

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Introduction: India continues to account for 60% of new cases reported globally despite all efforts to control the disease. India has recently launched "Sparsh Leprosy Elimination Campaign(SLEC)" that focuses on Leprosy Case Detection Campaigns and minimizing disability due to leprosy. Data from Government of India for the year 2016-2017 show that a total of 135,485 new cases were detected during the year 2016-17 without a significant decline in new cases since the last decade since2005-06. Same trend was observed in Shimla district of Himachal Pradesh India.

Patients / material and methods: We line listed all the new cases that presented to our hospital, DDU Hospital, Shimla in Himachal Pradesh and segregated them as immigrants/migrants from out of state called Outside Project Area (OPA) mostly from Nepal and Bihar and indigenous patients from Shimla district termed as Inside Project Area (IPA) for the year 2016 and analysed the trends.

Results: 13 year trends of Leprosy cases in Shimla District of Himachal Pradesh showing decline in Leprosy in migratory population is having corresponding decline in indigenous leprosy cases as both trend lines go down for the years 2004-2005 to 2015-2017 for which segregated data was available at DLO office. More than70% patients contributed by migrant workers in 2016-17 in this area also indicate the chances of potential spread of leprosy infection to local people.

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Conclusion: Our study demonstrates that there appears to be co- relation between working with infected migrant populations and emergence of new cases among healthy indigenous population of Shimla district of Himachal Pradesh and need further evaluation.

Limitations: Data set was limited to generalize the conclusions.

Keywords: Leprosy Carrier, Sharing Airspaces, Fomites, New Leprosy Case, Droplet Infection

#0451/ ILCABS106

LEPROSY INDICATORS AND DIAGNOSIS DELAY IN THE PEP4LEP DISTRICTS OF NAMPULA PROVINCE, MOZAMBIQUE: A BASELINE SURVEY

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. The PEP4LEP project compares two integrated skin screening interventions combined with the distribution of a single dose of rifampicin as post-exposure prophylaxis (SDR-PEP) for contacts of leprosy patients.

Objectives: To implement the study, it was necessary to assess recent epidemiological indicators of leprosy and to estimate case detection delay as a main outcome indicator at baseline.

Patients / material and methods: This was a descriptive study to establish the trend of epidemiological indicators of leprosy in the three endemic districts between 2015 and 2019, and to calculate the delay to diagnose leprosy cases in these areas. Epidemiological data were extracted from the database of the National Leprosy Control Program. For the delay in case detection, 81 newly diagnosed patients (maximum 6 months prior to inclusion) were interviewed at least one month and at most six months before December 2021 the data of interview.

Results: Over a five-year period, the detection rate of new leprosy cases in the three districts was 1,094 cases per million population from 2015 to 2019, with a high proportion of disability (17.0%). The mean diagnosis delay was 26.6 months (95%CI: 18.4-34.7), while the median was 17.0 months. Multibacillary cases had an average delay of 27.9 months (95% CI: 18.6-37 .1), while patients with grade-2 disability experienced an average delay of 47.8 months (95% CI: 15.4-80.2).

Limitations: This study had limitations determining factors associated with delayed diagnosis. This was mainly due to the limited sample size of 81 participants who were interviewed, insufficient to perform a meaningful subgroup analysis.

Conclusion: The long case detection delay and high grade-2 disability rates indicate that there is a need for active case finding and chemoprophylaxis with SDR-PEP to help interrupt the chain of *M. leprae* transmission in Nampula province.

Keywords: Leprosy, Hansen's disease, Contact screening, Case detection delay, SDR-PEP

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#0452/ ILCABS207

IMPACT OF MORBIDITY MANAGEMENT AND DISABILITY PREVENTION CARE FOR PEOPLE AFFECTED BY LEPROSY AND LYMPHATIC FILARIASIS

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Introduction: Leprosy and lymphatic filariasis both are neglected tropical diseases caused by bacteria and parasites respectively. Leprosy and lymphatic filariasis do not directly cause death, but rather leave patients with chronic illness and incapacitating and disfiguring deformities that interfere with daily life activities and routine functions.

Description: [MM1] Lepra Bangladesh has formed over 500 Self-Care Practice Groups (SCPGs) in its own working area. A group consists of around 10 affected people with leprosy and lymphatic filariasis. Overall, the members of the group are extremely poor and marginalized members of the same community. Members learn self-care techniques through practicing regularly with experienced members of the same group, also known as peer-to-peer learning.

The groups have practice simple techniques of self-care practice regularly at home and often in-group to manage their chronic condition and prevent disability. The basic components of self-care are:

1) To maintain proper hygiene; 2) Regular skin and wound care; 3) Daily exercises for the affected body part; 4) Maintaining elevation for affected body part (especially for lymphatic filariasis); 5) Wearing suitable footwear.

According to the project's evaluation, over 60% of people affected by leprosy and lymphatic filariasis have reported a reduction in acute attacks and reduction in complications after practicing regular self-care practice since the formation of their SCPGs.

Conclusions: The formation of SCPG prove to be an effective strategy for beneficiaries to obtain better physical conditions as well as basic psychosocial support. Simple self-care in these cases is the most cost-effective and sustainable way to manage the disease. Self-care routines for leprosy and lymphatic filariasis are based on the principles of Morbidity Management and Disability Prevention (MMDP) and are almost the same for both diseases, which allows patients to gather in SCPGs together.

Keywords: Morbidity Management and Disability Prevention (MMDP), Leprosy, Lymphatic Fileriasis

#0453/ ILCABS216

ANTIMICROBIAL RESISTANCE IN LEPROSY- A SEVEN-YEAR REPORT FROM A TERTIARY CARE HOSPITAL IN SOUTHERN INDIA.

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Background: The emergence of drug resistance in Leprosy is a threat to the leprosy control and intervention programs. The presence of point mutations within drug interacting genes confers the molecular basis of resistance in leprosy as reported by various countries. The aim of the study was Screening of Drug Resistance in Leprosy using Molecular Methods for relapse leprosy cases reported at various secondary and tertiary care leprosy centers in south India.

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Methods: Leprosy cases that fall under the criteria laid by WHO for Relapse in leprosy were recruited in the study from 2014-to 2021. A total of 200 skin samples were processed through the standard protocol of WHO for Mycobacterium leprae DNA Extraction and Polymerase Chain Reaction (PCR) were performed to amplify genes namely folp (for Dapsone), rpoB (for Rifampicin), and gyrA (for Ofloxacin). Then the PCR amplicons were sent to a commercial agency for DNA sequencing to confirm mutations.

Results: From the 200 patient samples recruited over seven years, 8 patients showed a mutation in the rpoB gene which confers rifampicin resistance. Mutations noted in the rpoB gene of *M. leprae* were found in 436, 476, 441, 435, and 451 codon positions. 5 patients showed mutations in the folP gene of *M. leprae* were found in 53 and 55 codon positions and 4 patients showed a mutation in gyrA gene of mycobacterium leprae in codon position 91. A total of 17(8.5%) patients from the 200 patients recruited showed resistance to various genes.

Conclusion: Although the no. of patients showing resistance is noted to be low compared to other parts of India. It is imperative that primary and secondary drug resistance screening is useful to control the emergence of drug resistance in leprosy.

Keywords: Drug resistance, Relapse, Mutation, Leprosy

#0454/ ILCABS217

COMBINED APPROACH OF LEPROSY NEW CASE DETECTION AMONG TRIBAL POPULATION IN NABARANGPUR DISTRICT, ODISHA

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Introduction: Nabarangpur district of Odisha, India consists of 10 community development blocks and two municipalities with 12,20,946 population, predominantly scheduled tribes (55.8%) with a low literacy rate of 46.43%. In addition to the LCDC campaigns, to enhance active case detection, a combined approach using focal surveys, contact surveys, and Information, Education and Communication (IEC) campaigns was implemented by LEPRA in the district.

Objectives: To analyze the leprosy cases detected using combined approach in the tribal population.

Methods & Materials: Demographic and clinical details of the retrospective cohort of newly diagnosed leprosy patients for the period 2017-2022 was collected from the district & block level NLEP reports and special drive reports of LEPRA projects implemented in Nabarangpur district.

Results: From 2017 to 2022, a total of 2048 new cases were detected in the Nabarangpur district, with 470 (23 percent) detected through LEPRA special drives. Of these 62 percent (296) were found among the scheduled tribes population. Among 296 cases, majority of them were males (47%) and child cases accounted for 12%. Clinically, three out of four cases were diagnosed as Paucibacillary cases. Out of the total 25 Grade-2 disability cases, 64 percent were found among these groups. Diagnostic delays of 6-12 months, less than 2 years, and more than 2 years were observed in 81%, 16%, and 3% of the cases, respectively.

Conclusion: To detect hidden leprosy cases among the tribal population, combined approaches using Focal surveys, and Contact Surveys should be undertaken. Regular IEC activities should be undertaken to reduce the delay in diagnosis among this underreacted population who have low access to health services.

Keywords: ASHA, ACDRS, ACF, Special detection drives and NLEP

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#0455/ ILCABS220

ACTIVE CASE FINDINGS UNDER THE HEALTH SYSTEM STRENGTHENING MODEL IN BANGLADESH

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Introduction: Bangladesh achieved elimination of leprosy (1/10,00 population) in 1998 at a national level. However, some pocket areas remain high burden. NGOs working in the leprosy field in Bangladesh took over the responsibility for further elimination through the Leprosy TB Coordination Committee (LTCC). The peripheral level government staff's capacity for the leprosy program has decreased since.

In 2013, Lepra Bangladesh initiated a Health System Strengthening (HSS) project with the support of an INGO. The first phase was a partnership with all the like-minded NGOs and from 2016 onwards, the project is providing support to the peripheral level health system to increase their capacity to achieve the "Zero Leprosy".

Objectives: The objective of this study is to conduct a retrospective analysis to validate the significance of HSS in Bangladesh.

Methods: The National Leprosy Program is collecting data systematically at different levels. Data regarding new case detection, new case with G2D, child, and MB percentage has been compiled in the HSS project areas in the last three years.

Result: From 2019 to 2021 new case detection was 989 with 4% G2D, 6.57% child cases, and 46% MB cases. The ACF led by the peripheral government health was responsible for identifying 46% of total new cases (2168). The overall data shows an increasing trend of identification.

Conclusion: The elevated child case with consistent MB percentage indicates active ongoing transmission of leprosy in the community, which resulted in the detection of a significant number of new cases. Simultaneouly, the detection of new cases with G2D indicates late diagnosis and missing or mismanaged reaction and neuritis cases. To achieve "Zero Leprosy" the government health system should be highly skilled and sensitive to identifying every new cases and strongly vigilant to detect every case of reaction and neuritis providing timely and appropriate Management.

Keywords: Health System Strengthening (HSS), National Leprosy Program (NLP), Active Case Finding (ACF), Grade 2 Disability (G2D), Multibacillary (MB), Child Case

#0456/ ILCABS263

ROLE OF ORGANISATION OF PEOPLE AFFECTED BY LEPROSY (OPAL) IN THE COMMUNITY (NON-COLONY ENVIRONMENT) IN RESTORING ACCESSIBILITY TO LEPROSY CARE SERVICES DURING COVID 19 PANDEMIC.

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Introduction: Covid 19 pandemic impacted all parts of the world in every aspect of life.

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The accessibility to leprosy care services and the supply chain was severely disrupted affecting those with leprosy disability and lepra reaction. The Organisation of People Affected by Leprosy (OPAL) from the community (non-colony environment) took lead in restoring accessibility to leprosy care services during pandemic.

The paper presents the potentials of the OPAL and suggests its role in National Leprosy Eradication Programme (NLEP).

Objectives: To examine the capacity of OPAL in the community in coordination, planning and executing leprosy care services and suggest its future role in NLEP.

Material and methods: The base of the study is initiatives by the OPAL from two high leprosy endemic districts; community based leprosy care interventions to address the issues of leprosy affected during pandemic.

Required support, financial and technical, was generated from international foundation, leprosy NGO partner.

20 volunteers, all members of OPAL, were trained and engaged.

Leprosy care services were provided through 28 Self Care Promotion Camps followed by periodical home visits by volunteers and referrals to Leprosy Referral Centres (LRC)

Results: 500+ leprosy affected including 339 with disabilities (Gr-I: 63, Gr-II: 276) were reached. 497 disabilities among 276 affected with visible disabilities were attended at the camps. 114 persons availed ulcer care services. 476 aids and appliances (MCR, splints, Self Care Kits etc) were distributed. Home based self care practices promoted and linkage with LRCs re-established to access leprosy care services.

Limitations: The project was of relatively short duration with assured financial and technical support.

Conclusion: The findings of the study substantiate potential of OPAL to play promising role of a responsible stakeholders in the national programme. The authors recommend NLEP to recognise OPAL from non-colony-environment as programme partner.

Keywords: Organisation of People Affected by Leprosy, NLEP Partner, Non colony environment, Self Care Promotion Camps, Home based self care, Stakeholder

#0457/ ILCABS282

PROFILING OF LEPROSY CASES IN PERI-URBAN AREAS OF MAHARASHTRA

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Introduction: Hansen's disease (also known as leprosy) is an infection caused by slow-growing bacteria called Mycobacterium leprae. It can affect the nerves, skin, eyes, and lining of the nose (nasal mucosa). With early diagnosis and treatment, the disease can be cured.

A retrospective record-based study was conducted on already diagnosed leprosy patients during the period 2018-2022 for the purpose of profiling the recorded cases. The objective is to study the frequency and distribution of newly diagnosed leprosy cases, type of leprosy, and treatment continuity.

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Description: The present study was carried out to know the clinical profile of leprosy patients. A total of 53 patients were diagnosed with leprosy cases during the period 2018-2022; out of which 49% are male and 51% female patients. The sex ratio of the taluka area is around 889 compared to 929 which is the average of Maharashtra state. Out of the total population, 33.65% of the population lives in Urban areas and 66.35% lives in Rural area. In this region, the wet season is oppressive and overcast, the dry season is humid and mostly clear, and it is hot year-round .The patients are classified into MB and PB cases. As per WHO classification 28 % PB cases and 72 %MB cases. The proportion of child cases is 5.6% and disability is present in 7.54% of recorded leprosy patients.

Conclusion: In the study, it is recorded that number of female leprosy patients is more than male patients. In the study area, multibacillary cases are more. Also, there is visible deformity is present in some cases. Early diagnosis and early adequate drug treatment are very important aspects to reduce the load in cases of leprosy.

Keywords: Mapping, Profiling, Leprosy, Retrospective

#0458/ ILCABS316

EVALUATION OF THE EFFECTIVENESS OF LEPROSY ELIMINATION PROGRAM UNDER THE 11TH NATIONAL HEALTH DEVELOPMENT PLAN 2012-2016

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This Evaluating research used quantitative and qualitative methods to evaluate the effectiveness of Leprosy

Elimination Programme under the 11th National Health Development Plan. Epidemiological trends, operational situation and related factors were analysed based on the determined targets and indicators. Overall results revealed satisfactory achievement. The programme had achieved planned targets. The key indicators trend, the number of registered cases/prevalence rate per 10,000 population and the number of newly detected cases/detection per 10,000 Population, had decreased relevantly. However, there were some challenges related to the key indicators trends of newly detected cases which reflect early detection and treatment together with leprosy transmission in communitites namely 1) the number of children among new cases had decreased while the proportion had increased 2) the number of newly detected case swith multibacillary leprosy had decreased while the proportion had increased 3) the number of newly detected cases with disability grade 2 has decreased while the proportion remained higher than the criteria 4) the proportion of newly detected cases who had been early treated was stable and below the criteria. Apart from that, the treatment completion rate was below the criteria. The number of non-Thai newly detected cases had increased. The quantitative and qualitative findings were relevant. In order to enhance the effectiveness of the Leprosy Elimination Programme under the 12th National Health Development Plan, the author suggest to raise leprosy awareness and perception, strengthen new case detection, reconsider the criteria to determine target area, build personel capacity, suggest and monitor patient's drug intake, conduct research, and develop operational model and system.

Keywords: Keywords: leprosy, Effectiveness, Evaluation

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#0459/ ILCABS321

FEASIBILITY FOR SURVEILLANCE OF DRUG RESISTANT LEPROSY UNDER NATIONAL LEPROSY ERADICATION PROGRAMME

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Introduction: After achieving nationwide elimination of leprosy in 2005, the National Leprosy Eradication Programme was integrated into Primary Health Care. The prevalence of leprosy was static for almost more than a decade. There was no change in the chemotherapeutic agents in Multi-Drug Therapy (MDT) since past four decades. Anti-Microbial Resistance may be one of the hurdles in further bringing down the burden of disease. Overall Rifampicin resistance in India was 4.7%, the resistance among new &relapse cases was 8.2% and 3.9% respectively. The information on AMR in leprosy was mostly from the sentinel surveillance and no systematic information regarding prevalence of resistant leprosy

Objectives: 1. To demonstrate the feasibility for AMR Surveillance under NLEP.

2. To identify the constraints and challenges in AMR Surveillance.

Material & Methods: According to the guidelines of World Health Organization and NLEP, a feasibility study was conducted in four districts of Tamil Nadu, namely Chennai, Tirunelveli, Villupuram and Madurai to assess the implementation of anti-microbial resistance among new and relapse cases of leprosy.

Results: It was noted that the Slit Skin Smear (SSS) may be the primary mode of screening with punch skin biopsy wherever feasible, the dermal skin scrapping in 70% alcohol and the SSS slides may be adequate for PCR, existing system of specimen transportation (as in NTEP) may be followed, paramedical worker (PMW/HI) or health supervisor (NMS/HA/HE) required to be involved for supervision and coordination of the process, there required a stringent monitoring and motivation of the health functionaries. There required a network of laboratories at least one in a state to perform PCR.

Limitations: The study was disrupted due to Covid-19 pandemic.

Conclusion: Though there was not observed much resistance, the AMR surveillance for leprosy may be implemented in the field with incorporation of the observations.

Keywords: Leprosy, Drug Resistance, Anti-microbial Resistance, Feasibility, Surveillance

#0460/ ILCABS329

LEPROSY: NEED FOR CONTINUOUS AWARENESS

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Background: Leprosy is a chronic, infectious disease caused by Mycobacterium leprae. Even after achieving elimination, new cases are frequently seen. Perhaps there is need of efficient epidemiological studies to understand recent epidemiological trend in post elimination era and to further plan eradication.

Aim & Objective: To study epidemiological aspect of leprosy and deformity

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To study clinicohistopathological correlation in various spectrum

Method: Detailed history of all epidemiological parameters and presenting complaints were noted for all cases of leprosy attending the Skin OPD. They were examined clinically &assessed for any deformity or any sign of reaction. Slit Skin Smear (SSS) and Skin Biopsy specimen were obtained for each patient.

Result: 76 new cases of leprosy were seen during study period of 30 months. Patients' age was ranged from 12 to 80 years (mean-36.4 years). The male to female ratio was 2.4 to 1.Three child cases were seen. The 59.2% cases were from 21-40 years age-group & 80.2% belonging to low socioeconomic status.Maximum (68.4%) cases were laborer by occupation & most(38.1%) patients were residing in Gujarat.64.4% cases presented within 1 year of onset with majority having presenting complaint of glove & stocking anesthesia with trophic ulcer (17%). Multiple body site involvement was present in 67.1% cases. 36.5% cases had deformity on examination & reactionswere noted in 25% cases among them 76.3% had ENL. Lepromatous was the most common presentation clinically(23.6%) & histopathologicaly (31.5%). Highest parity was observed in LL (94.4%). Clincohistopathological agreement was seen in 52 (68.4%) cases. Slit smear positivity was seen in 56.5% cases.

Conclusion: Epidemiological data can help to identify high risk group. Histopathology confirms the exact subtype and facilitates theaccurate therapy with early vigilance for lepra reaction. Upsurge in Lepromatous patients leads to need for early detection and treatment to avoid permanent damage.

Limitation: Study included new cases presenting at one tertiary care center only.

Keywords: Leprosy, Clinicoepidemiological study, Clinicohistopathological correlation, Leprosy reaction, Deformity, Slit skin smear examination

#0461/ ILCABS335

IMPROVEMENT ON LEPROSY KNOWLEDGE AND SERVICE DELIVERY THROUGH PROJECT IMPLEMENTATION: A STUDY IN NEPAL

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Introduction: Leprosy was declared eliminated in Nepal in 2010. Despite efforts to end leprosy, a prevalence rate of 0.69 cases per 10,000 was recorded in fiscal year 2019/20. The HEAL Nepal initiative aims to improve the health, well-being, and dignity of leprosy patients in 11 highly endemic areas. The study was conducted to assess the attitude change towards people affected by leprosy, early case detection and treatment, assess the positive change in well-being, and Quality of Life (QoL).

Methodology: A cross-sectional study was conducted in the sampled districts Morang, Rautahat, Chitwan, Rupandehi and Banke. Of 1000 community people, 290 self-help groups members, 285 individual patients, 230 Individual patients receiving treatment were interviewed on different perspective of awareness, knowledge, health and well-being of leprosy affected people. Quantitative data was collected by semi-structured questionnaire, client's satisfaction interview, through WHOQoL tool. Focus group discussion and key informant interviews were used for qualitative assessment.

Result: The study revealed that the majority (73.1%) of the respondents knew the signs and symptoms of leprosy. 73.6% of the respondents stated that health institutions have services for treatment of leprosy. Out of 1000 respondents 57.5% of the respondents had positive attitude towards leprosy affected people. Out of

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290 SHG members, 63.4% achieved score above 15, indicating more than average quality of life based on WHO -5 wellbeing index. Out of 230 respondents 67.4% were satisfied with attitude of the health workers. Overall quality of life score increased from the 2.4 to 2.95.

Conclusion: The study suggests that the project has had a positive impact on the experiences of people affected by leprosy. Most respondents reported a high level of leprosy awareness, knowledge of the services available. The non-discriminatory attitudes health workers have towards leprosy affected people which, in part, leads to an improved quality of life.

Keywords: Keywords: Heal Nepal, Leprosy, WHO -5 wellbeing index WHOQoL brief, LAP

#0462/ ILCABS336

A STRATEGY FOR TIMELY INTERVENTIONS DURING ONGOING PANDEMIC IN PROVISION OF COVID+LEPROSY CARE UNDER NATIONAL LEPROSY ERADICATION PROGRAMME, IN THE ENDEMIC DISTRICTS OF DIBRUGARH, TINSUKIA AND SIVSAGAR- UPPER ASSAM, INDIA FOR UNINTERRUPTED LEPROSY RELATED ACTIVITIES.

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Introduction: In 2020,due to COVID-19 pandemic,nation-widelockdown was imposed. Health departments had to defer regular operations and focus on the pandemic. As a support to the District Leprosy Programme, activities related to the management of leprosywere limited to phone or online contact during the ongoing pandemic

Objectives: To develop a Covid +ve strategy during the ongoing pandemic carrying out Leprosy Programme activities along with the General Health System in the selected 3 endemic districts of Upper Assam and to share experiences.

Materials and Methods: Online cell phone numbers (patients/family/neighbours/ASHA workers) were collected and contacted.Total number of Known cases in the districts (356), Total number of contact numbers 310(87.07%), Male: 203, Female: 107 (Released from Treatment 193, Under Treatment 43),

A checklist developed with questions on, General Welfare, history of lesions suspected lesions among self or family members, complications, ulcers, lack of medications. The team took initiative to immediately reach the patients and do the needful. Phone calls were made on weekly basis, requesting patients to call back in case they needed. Movement certificate as obtained from authorities for the team.

Results: There were 930 phone calls made, to310 patients.Only 254 responded,7 cases reported with lepra reactions, 39 with plantar ulcers, 25 in need of footwear, 21 suspected of leprosy were reported, examined and found with no leprosy. There were 20 cases withoutanti-leprosy medication,10 patients /13 family members reported symptoms of COVID-19, One patient succumbed to it.

Limitations: Lack of contact numbers, unclear response, non-availability of smartphone, poor network, unanswered calls,curfew, lockdown, andred zone had been a limitation reaching to patients

Conclusion: This strategy made possible to reach patients during ongoing pandemic, rapport with healthcaresystem increased including accessibility, compliance improved, complications identified. Leprosy related activities were accomplished.

Keywords: Leprosy, Leprosy services, Covid+leprosy, Leprosy management

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#0463/ ILCABS347

EXISTENCE OF VIABLE MYCOBACTERIUM LEPRAE IN NATURAL ENVIRONMENT AND ITS GENETIC PROFILING IN A LEPROSY ENDEMIC REGION

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Introduction: Molecular epidemiology of leprosy is very important to study leprosy transmission dynamics and to enhance our understanding of leprosy in endemic areas by utilizing the molecular typing method. Now a days our understanding of leprosy transmission dynamics has been refined by SNP typing and VNTR marker analysis of *M. leprae* strains.

Objective: This study was carried out to find out the presence of viable *M. leprae* in the environment of leprosy patients, understanding their genotypes and compared with that of *M. leprae* present in patients.

Patients / material and methods: Slit-skin smear (SSS) samples(112nos) were collected from the active multibacillary leprosy patients from different blocks of leprosy endemic area. Soil samples (1060nos) and water samples (620nos) were collected from residing areas of leprosy patients. SNP typing and subtyping were performed by PCR sequencing method. Multiplex PCR was performed using fifteen ML-VNTR loci and results were analysed.

Results: We observed high PCR positivity in soil samples (344 out of 1060; 32%) and water samples (140 out of 620; 23%). These PCR positive samples when further screened for viability, it was observed that 150 soil samples (44%) and 56 water samples (40%) showed presence of 16S rRNA. SNP typing of *M. leprae* revealed presence of predominantly type 1. SNP subtype 1D (83%) was most prevalent in all the blocks of Purulia followed by subtype 1C (15%) and subtype 1A (2%). SNP subtype 2F was noted in only one sample. SNP and VNTR combination showed presence of similar strain type in certain pockets of Purulia region which was responsible for transmission.

Limitations: More number of samples need to be tested.

Conclusion: Presence of viable *M. leprae* in the environment, and presence of SNP Type 1 *M. leprae* in patients and environment suggests both environment and patients play a role in disease

Keywords: SNP-VNTR typing, Viable *M. leprae*, Transmission, Environmental samples, Clinical specimens

#0464/ ILCABS351

SPATIO-TEMPORAL PATTERNS OF LEPROSY IN NATIONAL CAPITAL TERRITORY OF DELHI, INDIA

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Spatiotemporal analyses (by geographic area and time) of a disease might help identification of critical factors responsible for high prevalence or the failure of control programs. Despite massive inputs into the

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National Leprosy Eradication program (NLEP) Leprosy has beaten the officials in its control as seen from the continuing high incidence rates. India "eliminated" leprosy as a public health problem" in December 2005, but even after two decades unable to contain the disease.

Populations in capital cities can be highly dynamic due to high migrations of rural and urban population bringing with it the inevitable burdens of illiteracy, poverty and disease. Geographic boundaries keep spreading taxing the Administration to the limit. The National Capital Territory (NCT) of Delhi is no exception. Much can be learned in a careful analysis of the statistics of leprosy meticulously collected by NLEP, promptly analysed and disseminated widely. Currently, there were eleven administrative districts in NCT of Delhi with an estimated population of 20,262,493. As per Government directives, Delhi submits monthly progress reports (MPR) in the uniform proforma designed by national leprosy eradication programme, Data reported during last seven years (April 2013 to March 2020) were analysed by year and district and the following summary statistics are presented: New Case Detection Rate, Prevalence rate, Percent of Multibacillary leprosy, Females, Children and Disability Rates. Wide variations are noticed by area (Districts) and over time, which are correlated with the sociodemographic characteristics of the district. The sociodemographic features of various districts vary widely. In this paper, these data are critically examined, various correlations and trends described and various insights accrued for necessary follow-up actions. Urgent action will be necessary to identify weak spots, deficiencies and programmatic inputs if zero leprosy targets are to be reached.

Keywords: Spatio-temporal, Pattern, Leprosy, Delhi

#0465/ ILCABS357

SURVEY OF HEALTHCARE PERSONNEL ON ERADICATING LEPROSY IN INDIA

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Medical Officers and the grass-root level Accredited Social Health Activists (ASHAs) are two critical forces who could help reach the zero leprosy targets if they are adequately trained, well supervised and properly motivated. Thus, it is essential to get their views, level of knowledge and attitudes towards leprosy, its consequences, so that intensive training can be effectively given. Hence an interview online survey was done on a multistage random cluster survey of Medical Officers and ASHA workers in selected districts of NCT, Delhi during 2020-21 as part of a major research project on challenges and implementation gaps of NLEP. The findings are briefly summarized in this paper.

Of 81 Medical Officers (36 men and 45 women) interviewed, nearly 30% had no prior leprosy experience. Their knowledge on challenges in leprosy were minimal and their attitudes fair. Almost all blamed ignorance and inadequate motivation for delayed reporting. Only half the doctors felt the contact examination was important. Nearly 80% accepted there was leprosy stigma, over 75% said they do not know how to attain zero leprosy.

Of 124 ASHAs (all women) aged 21 to 65 years; nearly 30% had studied less than high school, almost all knew that MDT is good for leprosy, but 90% did not know the names of the drugs. Most felt inadequate knowledge was responsible for late registrations and poor compliance. Only a quarter had no problems

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examining suspects, they all welcomed more training. About half felt stigma exists due to ignorance and superstition. Almost all were willing to help in educational efforts. Nearly 85% felt zero leprosy is possible.

Apparently more intensive training in leprosy, effective mentoring and support will be necessary on an urgent basis to ensure that Medical Officers and ASHA workers contribute significantly towards attaining zero leprosy. Community participatory approaches are essential.

Keywords: Survey, Healthcare-Personnel, Eradicating, Leprosy, India

#0466/ ILCABS373

HEAL PROJECT'S DETERMINATIONS TOWARDS ZERO LEPROSY: A STUDY IN NEPAL

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Introduction: Leprosy was declared eliminated in Nepal in 2010. Despite efforts to end leprosy, a prevalence rate of 0.69 cases per 10,000 was recorded in fiscal year 2019/20. The HEAL Nepal initiative aims to improve the health, well-being, and dignity of leprosy patients in 11 highly endemic areas. The study was conducted to assess the attitude change towards people affected by leprosy, early case detection and treatment, assess the positive change in well-being, and Quality of Life (QoL).

Methodology: A cross-sectional study was conducted in the sampled districts Morang, Rautahat, Chitwan, Rupandehi and Banke. Of 1000 community people, 290 self-help groups members, 285 individual patients, 230 Individual patients receiving treatment were interviewed on different perspective of awareness, knowledge, health and well-being of leprosy affected people. Quantitative data was collected by semi-structured questionnaire, client's satisfaction interview, through WHOQoL tool. Focus group discussion and key informant interviews were used for qualitative assessment.

Result: The study revealed that the majority (73.1%) of the respondents knew the signs and symptoms of leprosy. 73.6% of the respondents stated that health institutions had services for treatment of leprosy. Out of 1000 respondents 57.5% of the respondents had positive attitude towards leprosy affected people. Out of 290 SHG members, 63.4% achieved score above 15, indicating more than average quality of life based on WHO -5 wellbeing index. Out of 230 respondents 67.4% were satisfied with attitude of the health workers. The overall quality of life score increased from 2.4 to 2.95.

Conclusion: The study suggests that the project has had a positive impact on the experiences of people affected by leprosy. Most respondents reported a high level of leprosy awareness, knowledge of the services available. The non-discriminatory attitudes health workers have towards leprosy affected people which, in part, leads to an improved quality of life.

Keywords: Keywords: Heal Nepal, Leprosy, WHO -5 wellbeing index WHOQoL brief, Leprosy Affected People (LAP)

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#0467/ ILCABS380

A RETROSPECTIVE ANALYSIS OF CLINICAL AND EPIDEMIOLOGICAL PROFILE OF LEPROSY PATIENTS ADMITTED IN REGIONAL LEPROSY TRAINING AND RESEARCH INSTITUTE, GOURIPUR, WEST BENGAL

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Introduction: Leprosy is a chronic infectious disease caused by slow-growing bacteria called Mycobacterium leprae. Despite the multidrug regimen against this formidable pathogen for nearly four decades, leprosy remains a public health problem. By the end of 2018, 184212 new cases were reported globally and the prevalence rate stands at 0.2/10,000. In India, the prevalence rate is 0.57/10,000 population (March 2020). National Leprosy Eradication Programme has intensified its efforts to prepare the Roadmap for Zero Leprosy by 2030.

Objective: The objective of this study was to assess the clinical and epidemiological profile of leprosy patients admitted over a period of 5 years between 2017 and 2021 in Regional Leprosy Training and Research Institute (RLTRI), Gouripur, West Bengal.

Methods: This study was based on secondary data analysis of the patients admitted over a period of five years (2017-2021). Case records of 146 leprosy patients admitted at RLTRI Gouripur were studied for clinical and epidemiological profiles.

Results: Most of the admitted patients were in age group of above 40 yrs (74%). Trophic ulcers were the main cause of admission (94.5%) and only 5.5% were admitted for Reactions. Most of admitted leprosy patients, were of Multibacillary type (93.8%). All patients admitted with Reactions, disabilities and 93.5% of patients admitted with trophic ulcers are of MB type. Majority of the patients are of poor socio-economic background (81.7%).

Limitations: This study was hospital based study and not representing any specific catchment area and the study subjects were male patients as there was no female ward.

Conclusion: In our study, we found that multibacillary type of leprosy patients develops complications such as trophic ulcers, reactions and disabilities and requires inpatient care. The counseling and educating patients are important to adhere to treatment regimes, regular follow up and self care

Keywords: Leprosy, Trophic ulcers, Reactions, Multibacillary, Poor socioeconomic

#0468/ ILCABS397

THE ROLE OF COMMUNITY PARTICIPATION THROUGH ACTIVITIES OF COMMUNITY LEPROSY WORKERS IN LEPROSY ACTIVE CASE FINDING AND OPPORTUNITY FOR INTEGRATION OF SKIN DISEASES AND NTDS: THE LESSONS LEARNED FROM THE READY4PEP NIGERIA PROJECT.

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Introduction: In Nigeria, recent leprosy control efforts focus on prevention including active case finding among contacts of leprosy patients and administering of single dose rifampicin as post-exposure-prophylaxis

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(SDR-PEP). In 2020, the first SDR-PEP for leprosy control in Nigeria was administered through the Ready4PEP Project. Active community participation through the engagement of Community Leprosy Workers (CLWs) is a promising strategy in active case finding. It involves identification and referral by trained CLWs of both suspected leprosy patients, and patients with other skin conditions including neglected tropical diseases (NTDs).

Objective: This study demonstrates the impact of community involvement through the engagement of CLWs and the feasibility of integration of leprosy active case finding with other skin (NTD) conditions.

Materials and methods/patients: A cross sectional descriptive analysis of the Ready4PEP data recorded at referral facilities (MDT clinics) and collated by the local government supervisors across the 12 implementation LGAs. Descriptive analysis using SAS statistical software will be conducted. Results will be presented in form of tables, proportions, graphs accordingly.

Results: Over the period of 6 months July 2021 to December 2021 a total of 3787 persons with various skin conditions were referred, 805 were suspected for leprosy, and 148 confirmed leprosy patients were detected. More update results will be shared soon.

Conclusion: The engagement of CLWs is a helpful addition to leprosy case finding activities and seems to ensure community participation. CLWs can support in the integration of leprosy services with the detection of other skin diseases, as well as in SDR-PEP administration to leprosy patients' contacts.

Keywords: Leprosy active case finding, Community leprosy workers, Skin NTDs, Skin diseases, SDR-PEP, Nigeria

#0469/ ILCABS400

STUDY ON MIGRATION AND LEPROSY IN 4 STATES (BIHAR, CHANDIGARH, DELHI AND UTTAR PRADESH) IN INDIA

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Introduction: Migration of people facilitates movement of diseases between endemic and non-endemic areas and has been considered a possible factor in continued leprosy incidence and one of the important obstacles in achieving elimination of leprosy.

Objectives: 1. To study the availability, access, and delivery of treatment among migrant leprosy patients at the source, route, and destination of migration.

2. To understand impact of migration of leprosy patients and their households on new case detection and infection transmission in the source and destination states in India.

3. To influence the NLEP programme design related to management of migrant leprosy patients and their households through evidence-based recommendations.

Methodology:

a. The sampling design: multi-stage sampling is proposed for this survey. Each state will be divided into four directions. From each direction considering the endemicity of leprosy and migration, districts having high endemicity and high migration will be selected randomly in consultation with the state.

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b. Patients sampling: In each selected district, health facilities having more than 200 as per NLEP 2021 report will be listed, 12 health facilities per district will be selected using systematic random sampling.

c. Designing the definition of migration in the context of leprosy in India.

Limitations:

- Covid 19 second wave during April 2021 to June 2021
- Multiple changes in the leadership within central leprosy division since the implementation in March 2021 started.

Conclusion: The linkage between migration and leprosy in India is missing, and the reporting system does not have any provision to record and track migratory patients. As migratory population forms one of the cornerstones to FAIRMED's thematic areas, it is attempting to understand relationship between migration and leprosy so as to inform policies and

Keywords: Access to universal treatment, Policy change,

#0470/ ILCABS401

A RETROSPECTIVE CLINICOEPIDEMIOLOGICAL STUDY OF LEPROSY FROM A TERTIARY CARE CENTRE IN KARNATAKA

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. Despite the introduction of multidrug regimen in 1982, Leprosy remains a public health challenge. India accounted for about 60 % of new cases globally in 2016.

Objectives: The objective of the study is to describe the clinical and epidemiological spectrum of Leprosy patients encountered at a tertiary care centre in Karnataka

Material and Methods: A retrospective analysis of the records of patients attending the Leprosy clinic of the Dermatology outpatient department was done for a period of 2 years from January 2020 to December 2021. The data was analysed for clinical and epidemiological characteristics of the patients.

Results: A total of 63 patients visited the Leprosy clinic during study period. Majority of (92.06%) cases were Multibacillary Leprosy. Borderline Tuberculoid Leprosy was found to be the commonest subtype seen in 25 patients (39.68%). There were 49 males(77.77%), 14 females(22.22%) and the male is to female ratio was found to be 3.5:1. Most of the patients were aged between 21-50 years(80.95%). A hypopigmented patch was the most common clinical presentation in 82.53% of patients. 93.20% patients had peripheral nerve thickening. 7 patients (11.11%) documented Leprosy reactions. 5 patients (7.93%) presented with deformities, claw hand being the most common deformity in 6.34%. 5 patients presented with other forms of Leprosy such as Pure neuritic leprosy(6.34%) and Indeterminate leprosy (1.58%).

Limitations: The number of patients who reported to the Leprosy clinic in the year 2020 were significantly less due to nationwide lockdown imposed in regard with COVID 19

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Conclusions: The study provides an insight into disease burden and effectiveness of health services at a tertiary care centre in Karnataka. The study also highlights the importance of early diagnosis and management thereby minimising deformities and disabilities.

Keywords: Leprosy, Hansen's disease, Epidemiology

#0471/ ILCABS420

GENDER DIFFERENCES IN HANSENS DISEASE- A CLINICO-EPIDEMIOLOGICAL STUDY OF PATIENTS ATTENDING A TERTIARY CARE CENTRE

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Introduction: Leprosy is nearing elimination worldwide as a public health problem, but is endemic in several states and union territories of India. The prevalence rate of leprosy is 0.4 per 10,000 population in India. Leprosy affects males more commonly than females with a ratio of 2:1. Females are known to present in later stages of disease with greater degree of deformity.

Objective: To study the gender differences in Hansen's disease in patients attending tertiary health center.

Material and method:

Type of study: Retrospective study

Place of study: Department of DVL of our medical college

Study Duration: 18 months December 2020- May 2022

Sample size: patients diagnosed as Hansen's disease during the period of dec 2020 to may 2022

Methodology:

Data was collected for over a period of 18months.

• Details such as age, sex, occupation, duration of the complaints, associated symptoms, past history, family history and previous treatment history were collected.

• Details of clinical examination and Investigation results like slit skin smear and skin biopsy were taken into account.

Result: Of 232 patients; the prevalence of Hansen's disease was seen to be more common in male gender (68.9%) group when compared to females (31.1%). The distribution of clinical spectrum of disease and other detailed analysis will be discussed later.

Limitation: The study included only the patients attending the hospital, therefore the sample size was small representing only tip of iceberg of leprosy burden in the country . The number of patients attending the hospital was affected by the COVID pandemic, it was more difficult for females to visit hospital for consultation.

Conclusion: In this study we found the prevalence of disease to be more common in males. Incidence depends on socioeconomic factors, caste, occupation, age etc. Therefore there is need for emphasis on education of females regarding the disease.

Keywords: Gender difference, Males, Females, Socioeconomic status, Leprosy, COVID -19

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#0472/ ILCABS452

ONE ACCESS FOR SYSTEM INTEGRATED SERVICES (OASIS) FOR CLINICAL VULNERABLE POPULATION FOR ADDRESSING CO-MORBID CONDITIONS EFFECTIVELY AND TO ENHANCE INTEGRATED CASE DETECTION – LEPRA PROJECT EXPERIENCES IN STATES OF ANDHRA PRADESH, ODISHA & TELANGANA

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Introduction: In spite of robust General Health Integration approaches and collaborative frameworks with other National health programs, Leprosy screening remain unidirectional. There is opportunity to explore multi-Directional screening for among other clinical vulnerable population for Co-Morbid Conditions like Leprosy, HIV/ Targeted Population, TB, Lymphatic Filariasis, Diabetes, etc. and needs to be institutionalized. There is scope to provide single window access for Screening of High-risk / clinically vulnerable population to enhance case detection and addressing co-morbid conditions effectively

Objectives: The objectives of study are to identify address Co-Morbid Conditions effectively and new cases among Leprosy Patients, Lymphatic Filariasis Patients and HIV Vulnerable population

Patients / material and methods: At LEPRA Referral Centres and Project. Project team are trained on importance of comprehensive screening for Leprosy, TB, HIV, LF etc. Further as a part of process Leprosy/ LF/HIV collection of patient details, Co Morbid Conditions details are also noted for addressal and effective management of disease and will link to appropriate facilities for treatment

Results: Among screening of total of 1118 New Leprosy Cases identified by LEPRA Projects, it is observed that 87 (8%) Cases are having Diabetes, 9 (1%) Cases are having Lymphatic Filariasis (LF), 11(1%) Cases are having HIV and 10(1%) Cases are having TB. All identified 30 Leprosy with Co-Morbidity of LF /HIV/ TB are referred and facilitated for treatment, care and follow up.

On screening of 470 HIV vulnerable population, 2 (0.4%) Leprosy cases have been detected and put on MDT treatment.

On screening of 324 LF patients, 4 (1%) leprosy cases have been detected and put on MDT treatment

Conclusion: Need for Integrated Systematic multi-Directional screening for clinical vulnerable population will enhance to Strengthen Govt Health systems to reach out needs of co-morbid conditions effectively and to enhance Integrated Case Detection

Keywords: Need for One Access for System Integrated Services (OASIS) for all Clinical Vulnerable Population for addressing comorbid conditions effectively and enhancing Integrated Case Detection

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#0473/ ILCABS455

SKIN AND DISABILITY CAMPS FOR PROMOTING EARLY CASE DETECTION & PREVENTION OF DISABILITIES

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Introduction: Over the past decade, India has been showing gradual decline in the number of leprosy patients, however, one of the major challenges faced is the continued occurrence of new leprosy cases, evidenced by almost a static annual new case detection rate. This paper discusses the scope which can contribute the early case detection and the solutions for achieving the target zero leprosy.

Objectives: To promote early case detection and disability services through the integrated set-up with facilitation by an NGO leprosy hospital enable the primary health care to establish sustainable leprosy services.

Methods: The Primary Health Centre is the lowest level health facility to ensure implementation of leprosy control. NGO leprosy hospital facilitated and supports the functions of primary care by organizing skin and disability camps with a focus to promote early case detection, orient health staff, referral and home-based disability care. During this process list of persons affected with leprosy and disability is updated, trained on self-care practices.

Results: A total of 213 people attended in 6 disability camps in 2021, 8 new leprosy cases identified with 5 MB & 3 PB; 48 were old leprosy patients; 89 frontline health staff oriented; self-care demonstration provided to 56 patients. Analysis of follow-up assessments revealed that 65% (n=36) of the patients trained are practicing self-care at home.

Limitation: Collaboration between NGO hospitals and government health system needs to be strengthened. Coordination from programme managers is essential to percolate this concept to the peripheral levels.

Conclusions: The outreach camps envisages that early case detection is possible through passive methods and can promote quality prevention of disability (POD) care in Primary Health Centers, promoting a system of sustained leprosy services. Effective coordination, systematic training and referral support remain vital to improve the quality of life of the people affected by leprosy.

Keywords: NGO - Non Government Organization

#0474/ ILCABS526

EXTENDED POST EXPOSURE PROPHYLAXIS WITH SINGLE DOSE RIFAMPICIN TO REDUCE LEPROSY INCIDENCE

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Introduction: As per NLEP guidelines, Post Exposure Prophylaxis (PEP) with Single Dose Rifampicin 600 (SDR) is given to healthy contacts of newly diagnosed Leprosy cases. In a descriptive study, two high

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endemic villages which reported one or more Leprosy cases for the past 3 years were selected and Extended PEP was given for almost one fifth of population and the incidence of Leprosy cases were studied.

Objective: To study the effectiveness of enhanced SDR-PEP in bringing down the incidence of new Leprosy cases.

Methods: Extending population covered under SDR-PEP. For instance, The method is applied in two high endemic villages in Theni District. Observation facts are as follows:-

1) **Chinnaovulapuram(Odaipatty Block)** -Total Population-508,Total Leprosy cases reported in 2015-16 to 2019-20 is 5(1MB+4PB),PEP issued to 83 persons (in 2020) covering almost 16.33% of population.After PEP cases reported for past 2 years-0. 2) **Mariyamman Kovil Patti(Veerapandi Block)**-Total Population-2302-Total Leprosy cases reported in 2015-16 to 2019-20 is 26(6MB+20PB),PEP issued to 393 persons(in 2019) covering almost 17% of population.After PEP cases reported for past 2 years-1PB.

Results: The incidence of new Leprosy cases came down drastically for the past 2 years in both the villages after administering extended SDR-PEP

Limitation: Since it is a descriptive study, we need to do a analytical comparative(study and control groups) study to generalise the results in future.

Conclusion: The incidence of new Leprosy cases can be reduced by increasing the population covered under SDR-PEP.

Keywords: Extended Post Exposure Prophylaxis, Single Dose Rifampicin & Leprosy Control

#0475/ ILCABS550

ANALYSIS OF EPIDEMIOLOGICAL CHARACTERISTICS OF LEPROSY IN GUIYANG BEFORE AND AFTER THE LEPROSY HAZARD ELIMINATION CAMPAIGN

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Objective: To analyze the changes in epidemiological characteristics of leprosy before and after the Leprosy Hazard Elimination Campaign in Guiyang, and to provide scientific evidences for future leprosy prevention and treatment.

Methods: Retrospectively analyzed the average annual detection rate, demographic characteristics of new leprosy cases, delayed period, grade II deformity disability rate, mode of detection and other related indicators in Guiyang before (2006—2010), during (2011—2015) and after (2016—2020) the Leprosy Hazard Elimination Campaign.

Results: After the Leprosy Hazard Elimination Campaign, the incidence of new leprosy cases decreased, the detection rate showed a significant downward trend (c2Trend=27.965, P < 0.001), the 15~29 years old showed a significant upward trend (c2trend=8.190, P=0.004), the ≥ 50 years old (c2trend=8.882, P=0.003) and farmers (c2trend=26.478, P < 0.001) showed a significant downward trend. In the discovery methods, active discovery and cue investigation (c2trend=14.971, P < 0.001) decreased significantly, while passive discovery (c2trend=13.641, P < 0.001) and outpatient discovery in dermatology (c2trend=21.578, P < 0.001) increased significantly. The rate of grade II deformity decreased from 35.48% before the Leprosy

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Hazard Elimination Campaign to 20.83% after the Leprosy Hazard Elimination Campaign. The proportion of delayed period ≤ 12 months during the Leprosy Hazard Elimination Campaign was 57.35%, which was significantly lower than that in the other two stages (c2trend=9.507, P=0.009).

Conclusion: The Leprosy Hazard Elimination Campaign can detect leprosy patients in time, especially in rural areas, and can reduce the rate of grade II deformity disability and shorten the delay period of case detection, which has a positive effect on promoting leprosy prevention and treatment in Guiyang.

#0476/ ILCABS559

A STUDY ON GENDER DIFFERENCES IN NEWLY DETECTED LEPROSY CASES IN DIFFERENT LOCATIONS IN INDIA

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Background: Research on gender differences in leprosy have found that female patients were detected with the disease later and had more serious disabilities than male patients. We analysed the gender differences related to epidemiological characteristics of new leprosy cases detected from 2016 to 2021 in a leprosy focussed organization.

Methods: A retrospective study was undertaken to analyse the gender differences with respect to age, delay in disease detection, the main modes of detection, and disability grade. The chi-squared test and t test will be applied for the comparison. The data was collected from the hospital management system of the organization.

Results: A total of 19808 new leprosy cases were detected from 2017 to 2021, of whom were 23.3 % were females with a gender ratio of 2.01. New undiagnosed children with leprosy were 9.4% with a total of 1866 cases out of which 1050 (43.6%) were female children and a gender ratio of 1.3 . Total grade 1 disability was 3312 (16.7%) and grade 2 disability which was 4544 (22.9%). Further gender-based analysis will be presented during the conference. Trends of data in 2020 was less than the previous years probably due to the challenges in accessing health care due to the pandemic.

Limitations: All data is taken from tertiary care centres focussed on leprosy care and hence may not be representative of the national data.

Conclusions: Gender-related differences exist among the leprosy cases detected from 2017 to 2021. This needs to be factored while designing leprosy programs. Gender friendly practices and improved access to health care for women could bridge the gender differences.

Keywords: Leprosy, Gender, New case detection

#0477/ ILCABS572

A RETROSPECTIVE CLINICO-EPIDEMIOLOGICAL STUDY OF LEPROSY CASES AT A TERTIARY CARE HOSPITAL

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Background: Leprosy is a communicable disease caused by Mycobacterium Leprae. Despite the multidrug regimen, leprosy remains a public health scourge.

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Aims: This study aims to describe the clinical and epidemiological spectrum of leprosy patients at a tertiary care center.

Settings and Design: Record-based, retrospective, descriptive study.

Methods: Case records of leprosy patients treated at a tertiary care hospital over three years were studied. Eighty four cases that fulfilled the World Health Organization's 1998 case definition of leprosy and whose case records were complete with a basic demographic, case history, examination, and treatment details were included in the study.

Statistical Analysis: Data were compiled in MS Excel

Results: Majority cases i.e 57 (67.9%) were multibacillary and the rest were paucibacillary. 60 cases (71.4%) were males and 24 cases (28.6%) were females. 3.5% of patients were below 10 years of age and 6% of cases were above 60 years. 22.6% of cases belonged to the lower socioeconomic status as per the modified Kupuswammy classification of socioeconomic status.

Contact tracing could be elicited in only 2 (2.3%) of cases.

Sixteen (19.05%) cases had documented leprosy reactions out of which 14 cases (16.67%) were in type 1 reaction and two cases (2.34%) experienced type 2 reaction.

Grade 2 disability accounted for 16.05% cases and grade 1 disability in 22.62% cases.

Conclusions: The present study provides an insight into disease burden as well as the effectiveness of health services at a tertiary care hospital. The study also highlights the importance of early diagnosis and management of leprosy and reactions, thereby minimizing deformities and disabilities.

Keywords: Leprosy, Disability, Mycobacterium leprae

#0478/ ILCABS595

IMPACT OF COVID ON EPIDEMIOLOGY OF LEPROSY

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Introduction: The Global Leprosy situation changed after the introduction of MB-MDT. Despite the success of NLEP, India continues to account for 60% of new cases reported globally every year and is among the 22 "Global priority countries" that contribute 95% of world numbers of leprosy. Sudden COVID pandemic further disrupted the smoothness of NLEP and shut down of OPD services led to neglection of number of cases. Many who were already on treatment, couldn't continue the MB-MDT, few relapsed and few presenting as defaulters. It's a big challenge for clinicians to understand changes in different epidemiological aspects of Leprosy pre and post COVID so as to cater to the unmet needs of patients and contacts.

Objective: To study and compare epidemiological and clinical data of Leprosy in a tertiary care centre, pre, during and post COVID period.

Patients/Material and Methods: Retrospective analysis of Leprosy case records from January 2018 till April 2022 was done with respect to demographic, clinical and histological findings. Patients were divided

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into three groups: Pre-COVID (Jan 2018- March 2020), during COVID (April 2020-July 2021) and Post COVID group (August 2021-April 2022).

Results: A total of 555 patients were enrolled, 407 (73.3%) males, 148(26.7%) females . 370 (66.6%) cases were during Pre-COVID (13.7 cases per month), 63(11.3%) during COVID (4.2 cases per month) and 122(21.9%) post COVID (13.5 cases per month) with commonest spectrum of presentation being Tuberculoid 256 (46.1%). Post COVID, 5 presented with relapse, 3 as defaulters and 3 with deformities.

Limitations: Because of the retrospective nature, case detection is not active; thus missing the hidden cases.

Conclusions: Compliance and regular follow up is an absolute necessity in the treatment of leprosy. COVID lockdowns led to improper case management and community spread by unidentified cases might result in surge in cases post COVID

Keywords: Leprosy in Pre COVID, During and post COVID era

#0479/ ILCABS664

CLINICAL STUDY OF PURE NEURITIC LEPROSY IN A TERTIARY CARE CENTRE

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Introduction: Leprosy is a chronic inflammatory disease caused by Mycobacterium leprae which primarily affects skin and peripheral nerves.Pure neuritic leprosy is a type of leprosy where there will be no skin lesions and nerves will be affected and hence diagnosis will be difficult.

Objectives: To study the epidemiology of pure neuritic leprosy

Materials and Methods: A Retrospective analysis of 217 leprosy patients and their clinic records from the period 2018 to 2021 december was undertaken.

Results: Out of 217 leprosy patients seen over this period 14 had PNL, corresponds to 6.4%.age group between 20-60.More common in males. Predominant presenting symptoms were Parasthesia, Sensory/ Motor deficit and trophic changes, weakness of limbs.Mjaority of the patients presented with more than 1 symptom and involvement of more than 2 nerves.SSS negative for all patients.Ulnar nerve is the most common nerve to get affected. Histopathology revealed non-specific inflammation in the dermis in a majority of patients. USG of nerves in 3 patients shows loss of intra neural fascicles, enlargement of nerves and increased vascularity.NCS done in 2 patients showed axonal injury and demyelinative sensory and motor neuropathy

Limitations: Retrospective nature and study conducted in a tertiary care centre not reflecting the status in the community

Conclusion: PNL is a well recognized clinical entity in India, incidence varies from 4.6% to 5.5% in Western India to 17.7% in South India. PNL cases are more vulnerable to nerve damage and may lead to deformities because of more delay in diagnosis due to absence of skin lesions. Skin biopsy specimen is not conclusive in most of the cases.Use of USG and NCS helps as additional tool in early and easy picking of PNL. PNL needs more attention for early diagnosis and treatment to prevent deformities and sequelae of nerve damage.

Keywords: PNL, Epidemiology

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EPIDEMIOLOGY OF CHILDHOOD LEPROSY

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Introduction: Children are considered to be amongst the most vulnerable group to infection with the Mycobacterium leprae. Reasons being an immature and unpredictable nature of immune response and exposure to a lot of interfamilial contacts. The proportion of children among newly detected cases of leprosy gives a fair idea about the current status of active transmission of the disease as well as aid in monitoring the endemicity.

Objective: To review the epidemiological and clinical aspects of leprosy in children under 18 years of age.

Patients/Material and Methods: Retrospective analysis of children suffering from Leprosy from a tertiary care center in Mumbai, Maharashtra in a time frame of 4 years from January 2018 to April 2022 was done. Demographic, clinical and histological findings were analyzed.

Results: From a sample of 555 leprosy patients, 40(7.2%) were childhood cases less than 18 years; 31(77.5%) males and 9(22.5%) females. Only 3 cases(7.5%) were amongst <10 years while majority of cases i.e 37 cases(92.5%) were in >10 years. The commonest spectrum of presentation being Borderline Tuberculoid in 19 children (47.5%), Lepromatous in 15(37.5%), Indeterminate and Histoid in 2 each (5%) and 1 with pure neural Leprosy.

3 children presented with Type II reaction (ENL).

Majority of cases in Mumbai were reported from Goregaon, Wadala, Mumbra and Parel.

Limitations: Since it is a retrospective study, some of the details were missing.

Conclusions: Despite effective treatment strategies and achievement of Leprosy elimination targets, the prevalence of leprosy in children has not improved by much, with new cases shifting more towards the advanced lepromatous pole. We stress the importance of regular school surveys, contact tracing and prophylactic treatment so as to narrow down the graph of Pediatric Leprosy.

Keywords: Pediatric, Childhood, Leprosy, Advanced, Lepromatous, Survey

#0481/ ILCABS687

RISING TREND OF HANSEN'S DISEASE IN POST ELIMINATION ERA: A STUDY IN CENTRAL INDIA

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Introduction: Hansen's disease is a chronic granulomatous disease caused by Mycobacterium leprae and mainly affects the skin and peripheral nerves. Its elimination in India was announced in December 2005. Total of 1,27,558 new cases were detected worldwide in 2020. India contributed to 58.1% of the disease burden: almost half of the total global leprosy burden. In spite of the introduction of multidrug treatment over the last 30 years, the burden of leprosy has not declined as expected.

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Aims & Objectives: This study aims to evaluate clinico-epidemiological aspects of all the Hansen's cases attending a tertiary care hospital in Central India for a 3-year period from April 2019 to April 2022.

Methodology: A 3-year retrospective observational study was undertaken. Data analysis was done from Outpatient & Inpatient records attending the Hospital from April 2019 to April 2022. All the patients who fulfilled the WHO case definition criteria were taken into the record. Cases were stratified under various spectrums.

Results: In our study, males outnumbered females (M:F-1.8:1). The most commonly encountered cases in our study were Multibacillary (70.7%). The majority of the cases lay towards the borderline pole predominately Borderline Tuberculoid type (40.2%) followed by Borderline Lepromatous type (29.2%). Few cases presented with deformities (7.3%) affecting majorly hands and feet with grade 2 deformity. The majority of the cases were smear-negative (58.5%).

Conclusion: The results of the study indicate a high circulation of lepra bacilli at the community level in the 'elimination era'. This necessitates active interventions required to detect the level of transmission of infection and to interrupt the mechanism. Also, amendments are to be made to various policies and programs at both global and national levels in order to reach the goals.

Limitation: Short duration of the study.

Keywords: Hansens Disease, Leprosy, Clinical Variant of Leprosy, Biopsy, Epidemiology

#0482/ ILCABS704

LEPROSY CONTROL ACTIVITIES BY GOVERNMENT HEALTH STAFF 25 YEARS AFTER INTEGRATION: FOLLOW-UP AFTER 3 YEARS

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Introduction: Integration of the leprosy control services into general health services in Bangladesh was introduced as a national policy in 1993 to eliminate leprosy.This study aimed to quantify the government health staff participation in leprosy control activities 25 years after planned integration into the general health care system.

Methods: This was a follow-up of a prospective cross-sectional observational study.The study was conducted in eight Upazila Health Complex (UHC) Leprosy Clinics in Rangpur district.The baseline data was created from July to December 2018 and the follow-up after 3 years from July to December 2021.The sources of data were the suspect registers,patient's leprosy cards,monthly and quarterly reporting files and interviews of new suspects in leprosy clinic.Descriptive statistics had been used for analyzing the data.

Results: In total,1041 suspects from leprosy suspect registers,146 patients' leprosy cards and 38 leprosy online reporting files and 254 interviews of new suspects were reviewed.The result showed 97.0% of general information of the patient in the Patient's Leprosy Card filled by the government staff in 2018 whereas,in 2021 it decreased to 74%.For medical details, it decreased by 18.9%, physical examination by 11.6%,nerve examination by 31.5% and disability examination by 10.5%. On the other hand,the sensory test of hand and feet increased by 6.3% and management after MDT completion by 6.8%.The DHIS-2 leprosy reporting was 66.7% in 2018 and 78.9% in 2021.The leprosy report presentation at UHC monthly meeting increased by 39.0%.The voluntary suspect reporting increased by 24.2%.

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Conclusion: The Government staff's engagement in visible disability diagnosis and management after MDT completion is increased.However,their engagement in the Slit Skin Smear (SSS) test and prevention of disability (POD) services is still lagging.The COVID-19 restrictions did affect participation in all the activities including the contact survey.The government infrastructure can support SSS tests at UHC laboratories and train staff on POD management.

Keywords: Leprosy Control Activities, Integration, Leprosy Clinics, Leprosy Suspects,

#0483/ ILCABS710

DETERMINANTS OF DELAY IN DIAGNOSIS OF PEOPLE AFFECTED BY LEPROSY ATTENDING URBAN LEPROSY REFERRAL CENTRE

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Background: Delay in diagnosis of leprosy can increase the risk of nerve function impairments leading to disabilities. An estimated 3-4 million people across the world are living with preventable disabilities caused by leprosy. Globally, 7198 new cases are detected with grade-2 disabilities, India contributing to about 22% of the total cases. Therefore, it is crucial to identify the factors hindering the early diagnosis to prevent the disabilities.

Objectives: To determine the factors contributing to delay in the diagnosis from patient's perspective.

Materials and Methods: A retrospective, cross-sectional study of the newly diagnosed leprosy patients attending Urban Referral Centres at Blue Peter Public Health & Research Centre, Hyderabad, of Telangana State, India. The study period was April, 2020- March, 2022 (two years) a semi-structured questionnaire was used to collect the data regarding demographics, clinical aspects and the reasons for delay.

Results: A total of 109 leprosy new cases were diagnosed during the study period. The mean age was 35.8 years, 72% (75) were males. Clinically 83% (90) were Multi Bacillary cases and 26% (28) were skin smear positive among them. The duration of the symptoms was less than one year in 48.6%,(53), 1 year to 5 years in 45.8% (50), and 6 years to 10 years in 5.5% (6) of the new cases. The delayed diagnosis resulted in G2D among them. The complete details will discuss in the full paper.

Conclusion: Lack of awareness on leprosy, consulting unqualified health providers and consulting multiple physicians to hear that it is not leprosy (denial), stigma associated with leprosy and the apprehensions around it were the causes for delayed diagnosis. The effectiveness of early diagnosis of leprosy through health promotion in the population needs to be validated and continuous training on leprosy among healthcare providers.

Keywords: Delay of Diagnosis

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#0484/ ILCABS714

ENVIRONMENTAL FACTORS ASSOCIATED WITH HISTORY OF HANSEN'S DISEASE IN A HYPERENDEMIC COMMUNITY IN BRAZIL

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Background: Interrupting leprosy transmission is challenging due to significant gaps in our understanding as well as the growing evidence of zoonotic and environmental reservoirs of Mycobacterium leprae that may propagate transmission.

Objective: This survey aims to describe environmental risk factors for Hansen's disease (leprosy, HD) and parasitic infections in select hyperendemic municipalities in Minas Gerais.

Methods: Individuals aged 3 years and older were randomly sampled from neighborhoods in and around Governador Valadares. A survey assessing history of HD and parasitic infection, water, sanitation, and hygiene (WASH), and environmental conditions was administered. Descriptive and bivariate analyses were performed.

Results: The study included 1047 individuals with a median age of 53 (range 4-92) and 66% female. A third (37.2% (n=385)) earned below monthly minimum wage. Fifty-seven (5.9%) reported a history of HD and 70.8% (n=687) a past diagnosis of parasitic infection (with 273 reporting schistosomiasis). History of HD was associated with male sex (OR 1.92; 95% CI 1.12, 3.29), older age (p=0.02), fresh water contact (OR 2.13; 95% CI 1.24, 3.67), having lived in a house with a dirt floor (OR 3.16; 95% CI 1.83, 5.43), and unpiped sanitation (OR 2.30; 95% CI 1.26, 4.19). Likewise, history of schistosomiasis was associated with older age (p=<0.0001), male sex (OR 1.43; 95% CI 1.07, 1.90), water contact (OR 1.40; 95% CI 1.04, 1.89) and unpiped sanitation (OR 1.82; 95% OR 1.28, 2.57). Low socioeconomic status and education were not associated with a history of HD or schistosomiasis. Interestingly, armadillo contact was associated with schistosomiasis but not HD.

Discussion: Our analyses revealed strong associations with WASH factors and HD as well as with schistosomiasis. It is thus critical to research environmental factors that may contribute to leprosy transmission with a focus on mechanistic studies to better elucidate their role.

Keywords: Leprosy, Hansen's disease, Environmental factors, WASH

#0485/ ILCABS724

CLINICO-EPIDEMIOLOGICAL TRENDS IN LEPROSY: A RETROSPECTIVE ANALYSIS FROM A TERTIARY CARE HOSPITAL IN NORTH INDIA.

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Introduction: Leprosy is one of the oldest known infective diseases known to mankind. It is endemic in tropics and subtropics especially in developing nations. This study would enable us to have an idea about recent trends in leprosy, which would be of great value in making new strategies to control its menace.

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Objectives: To assess the clinical and epidemiological trends in leprosy in a tertiary care hospital in North India.

Materials and Methods: This retrospective study has been undertaken in the Department of Dermatology, Venereology and Leprosy in a tertiary care hospital in North India. Data pertaining the epidemiological and clinical profile of all patients registered in the leprosy clinic from April 2017 to March 2022 was extracted from the records of the clinic. This data was tabulated and analysed for result. Identity or names of the patients have not been revealed in this study.

Results: Amongst 128 patients who got enrolled in leprosy clinic in the study period, males constituted 74.2% of patients. Males to female ratio in this study is 2.87:1. Paediatric patients constituted 0.04%. Patients belonging to rural areas constituted 62.5%. Migrants comprised a chunk of 33.6% cases, majority from Uttar Pradesh. Illiterate patients comprised 34.3% and 10.9% were unemployed. Lepromatous leprosy was the most common clinical type and type 1 deformity was the most common deformity encountered.

Limitations: No limitations.

Conclusion: In spite of attaining target of 'elimination' back in 2005, a static new case detection rate over past decade in India is a matter of concern and indicates a need to find additional tools to interrupt transmission, while continuing efforts for vigorous new case finding.

Keywords: Leprosy, Clinico-epidemiological study

#0487/ ILCABS749

A STUDY ON QUALITY OF LIFE OF PEOPLE AFFECTED BY LEPROSY DISABILITY IN A LEPROSY ENDEMIC DISTRICT

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Introduction: The physical disabilities caused by leprosy can result in worsening of Quality of Life of patients. Quality of life is an important indicator for health can inform patient management, policy decisions and resource allocation.

Objective: To assess the Quality of Life of people affected by leprosy.

Methods: A cross-sectional study was conducted among leprosy affected people from October 2021 to April 2022 in 4 blocks of a leprosy endemic district. We obtained a five-year list of leprosy patients registered for treatment and used it to trace participants. Consenting was done after tracing them by Research Assistants and patients having impairments were included in the study. The EuroQoL (EQ-5D-3L) instrument, which includes five dimensions like mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, was administered. In each dimension, participants can indicate no problem, some problem and extreme problems.

Data analysis was done using MS Excel.

Results: Out of 4956-line listed participants, a total of 1627 were traced for disability assessment and 1198 patients were assessed to date. Among all patients assessed, 58.6% had some mobility issues; 15.6% had some

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problems with washing or dressing, 53.2% had some issues performing usual activities; 43.3% felt moderate discomfort/pain and 21.7% had moderate anxiety/depression respectively.

Limitation: Patients residing in urban areas of the study sites were difficult to trace despite best efforts.

Conclusion: Immobility, limited activity performance and anxiety/depression need to be addressed among people affected with leprosy especially among the most vulnerable groups of those with disability.

Keywords: Quality of Life, Leprosy, Disability

#0488/ ILCABS762

CONTRIBUTION OF MEDICAL COLLEGES TO NATIONAL LEPROSY ERADICATION PROGRAMME IN ODISHA AND TELANGANA STATES, INDIA

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Introduction: In India and rest of the world, there has been a tremendous decline in the number of leprosy patients over the past four decades. However, one of the major challenges faced by India is the continued occurrence of new leprosy cases, evidenced by almost a static new case detection rate (NCDR) over the past decade. There are over 360 Medical Colleges in India and most of medical colleges are Tertiary Level Hospitals have specialised departments and provide specialised care. Medical Colleges engagement for National Leprosy Programme is vital in Leprosy case detection and morbidity managment like specialised physio and ulcer care services. However, there remain certain barriers and gaps, which are preventing their upscaling. The current study aims to discuss experiences of Medical Colleges involvement in enhancing Leprosy Case Detection.

Objectives: Objective of this research study is to determine active engagement of Medical Colleges in detecting new Leprosy Cases.

Patients / material and methods: In close collaboration with State Health Authorities and Directorate of Medical Education, Continued Medical Education (CME) on Leprosy have been organised in 5 Medical Colleges 2 States of Odisha and Telangana. Further guidelines have been prepared in close collaboration with State Leprosy Office and sent to Medical Colleges for greater participation and contribution of Medical Colleges for Leprosy programme. Medical Colleges have been followed up monthly basis and for details on identification of new Leprosy cases and sending the report to respective District Leprosy Office

Results: During Oct. 2021 to March 2022, a total of 86 New Leprosy Cases have been identified. by Medical Colleges.

Conclusion: Contribution of Medical Colleges is critical to National Health Programmes, policy makers to ensure such initiatives for greater engagement of for case detection and morbidity management

Keywords: Medical Colleges Engagement- Key step towards greater Leprosy Detection

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#0489/ ILCABS773

LEPROSY CONTROL IN URBAN AREAS: A LESSON LEARNT FROM INDONESIA

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Introduction: Populations in urban areas are prone to leprosy because of high population density, poor personal hygiene conditions, and lack of access to health services. Many private health providers in urban areas are not adequately trained on leprosy diagnosis and treatment and thus are not able to refer patients to primary health centers (PHC) that provide multidrug treatment (MDT). We evaluated an innovative approach of urban leprosy control by implementing case-finding activities involving cadres and private physicians.

Description of the case: The project was conducted from 2019 to 2021 in 6 selected cities in Indonesia. A total of 157 physicians (general practitioners and dermatologists) from private clinics and hospitals in urban areas received a one-day training on leprosy diagnosis and treatment. A total of 147 health cadres also received a separate one-day training to screen for leprosy signs and to deliver health education on leprosy among communities in slum areas. Physicians and health cadres were encouraged to refer leprosy suspects and patients to receive MDT at the PHC.

Two years after the training, an increase in the number of leprosy cases referred to the PHC by the physicians and health cadres was observed. In 2020, 35 suspects were referred by the physicians, of which 30 were confirmed as leprosy. This increased to 153 suspects in 2021, of which 139 cases were diagnosed as leprosy. Moreover, referrals from health cadres in slum areas also increased from 317 in 2020 to 273 in 2021; and a total of 10 and 25 leprosy cases were found in 2020 and 2021, respectively.

Conclusion:

Improved knowledge on leprosy and the use of the referral system among private physicians, dermatologists, and health cadres can increase leprosy case finding in urban areas. This innovative approach could be adopted by other areas with similar settings.

Keywords: Urban leprosy, Referral patients, General practitioners, Health cadres

#0490/ ILCABS780

ROLE OF LEPROSY AND TUBERCULOSIS COORDINATING COMMITTEE (LTCC) FOR INTEGRATION AND MAINSTREAMING LEPROSY IN BANGLADESH

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Introduction: Bangladesh is fourth-highest leprosy contributing Country (2019) in the world. Average 3500 new cases are detected annually in partnership with 10 NGOs through a Government and NGOs coordinating platform called Leprosy and Tuberculosis Coordinating Committee (LTCC). Led by National Leprosy Program (NLP), a collaborative MoU is signed between Ministry of Health and 10 NGOs to

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support each other for achieving "Leprosy Free Bangladesh" and zero leprosy initiative by 2030 declared by Honorable Prime Minister in 2019.

Objective: Measure the effect of LTCC as a platform of public and private partnership toward Leprosy Free Bangladesh.

Material and Methods: Learning through engaging, assigning, and observation.

Results: -LTCC was formed in 1994 by 10 leprosy-focused NGOs and Directorate of Health Services for supporting, guiding and aligning with NLP and WHO strategies.

-The chairman of LTCC steering committee signs MoU every five years on behalf of the NGOs. Each NGO works with the local health department in their dedicated districts for avoiding duplication and optimum resource use. -Maximum active case finding initiatives and case follow-up are done by NGOs with support of local health department. But confirming new case, registration, distributing MDT and referring for complications is done by Government health department.

-Under this mandate NGO representatives and people affected by leprosy engage in different sub-committee, contributing to review and development processes that help to raise voices and inform policymakers.

-Both partners contribute to capacity building and filling capacity gaps and it has built strong linkage with demand and supply chain.

Limitation: Leprosy budget shortage and focus change of NGOs due to funding priorities.

Conclusion: Platform like LTCC can contribute to strengthening NLP and country-owned integrated leprosy program. NGOs can take active role in filling-up gaps in health operational system so that the program can run smoothly if NGOs withdraw their support ever.

Keywords: Public and Private partnership, Leprosy Free Bangladesh, Integration and mainstreaming leprosy

#0491/ ILCABS782

CHANGE IN EPIDEMIOLOGICAL TRENDS IN LEPROSY-FOR BETTER OR WORSE?

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Introduction: Despite the multidrug regimen against this formidable pathogen for nearly 4-decades,leprosy remains a public health scourge.This study highlights the demographic data,clinical features,reactions and deformities in leprosy patients;thereby bringing to light the public health importance of this simmering disease.

Objective: To study the epidemiological trends of leprosy patients at a tertiary care center over a period of 5years.

Materials and Methods: A 5year retrospective study of leprosy patients was done by analyzing data of leprosy patients in a tertiary care center.The study period was from February-2017 to February-2022.

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Results: There were a total of-272 cases.Maximum number of patients belonged to 21-30years age group in2017-18 and 31-40years age group in2021-22. Pediatric population(11-20years) comprised 15. 79% in 2017-18 while 3.26% in 2021-22. Male preponderance with M:F ratio is 4.4:1 in 2017-18 and 2.8:1 in 2021-22.Maximum number of patients(214) were from Madhya Pradesh(Ratlam).100% cases were from rural area in 2017-18 whereas 72.83% cases belonged to rural area in 2021-22.In 2017-18,the most common type was Borderline Tuberculoid-Leprosy(57.9%) whereas in 2021-22 it was Lepromatous-Leprosy(48.9%) .48 cases had completed the treatment,66 were on treatment.7 patients were defaulters,out of which maximum number of defaulters were in 2018-19.70(25.73%) cases had documented leprosy reactions,with ENL in 59(21.69%) with maximum cases(27) in 2021-22 and type 1 reaction in 11(4.04%) with maximum cases in 2021-22.Deformity accounted for 43(15.81%) cases with maximum in 2021-22 with claw hand as the most common deformity.151patients were lost to follow up.5 cases(1.84%) came with relapse within 1.5-2years of completion of 12-MDT packs,8 cases with recurrent ENL were treated with Thalidomide.

Limitations: The study is limited by its retrospective design.

Conclusion: Our study is only the tip of iceberg as several cases in the interiors of India still go untreated. Continued efforts are required to prevent the disease from making a resurgence.

Keywords: Defaulters, Deformity, Disability, Erythema nodosum leprosum, Reactions, Thalidomide

#0492/ ILCABS813

RELAPSES IN LEPROSY

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Introduction: Relapse of Hansen's disease refers to the appearance of new signs and symptoms in patients with a previous diagnosis and who have completed the treatment regimen proposed by WHO.

Objective: To determine and characterize relapse cases of Hansen's disease within five years (2018-2022), in Hansen's disease consultation from KEM Hospital

Patients/Material and Methods: We conducted a retrospective and descriptive review of clinical records, identifying cases in a total of 100 patients seen in consultation in that period. The minimum follow-up time was 6 months. In all cases, clinical suspicion of relapse was confirmed by bacteriological and histopathological examination.

Results: We identified 10 cases of relapse, which corresponded to 10% of patients observed, all with a previous diagnosis of borderline lepromatous clinical form, according to the Ridley-Jopling classification. Therapy has been established for multibacillary forms according to WHO scheme in all cases. Relapses occurred in a follow-up period between 7 and 16 months after treatment discontinuation.

Limitations: Since it is a retrospective study, some of the details were missing.

Conclusions: The frequency of relapse in this population was higher than that observed in most studies. There was poor adherence to therapy in all cases, admitted as the cause of relapse, after excluded other factors. We emphasize the importance of regular monitoring of patients undergoing treatment, to ensure adherence and effectiveness of therapy.

Keywords: Relapses, Leprosy, Epidemiology

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#0493/ ILCABS824

PURE NEURITIC HANSEN

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Introduction: The most important consequences of leprosy are the direct result of involvement of peripheral nerves.

In about 4 –8% of the cases the clinical presentation is exclusively with nerve involvement in the form of nerve deficit or nerve thickening, without any cutaneous lesions, with a negative skin smear and no other identifiable pathology. . In India the incidence varies from 5·5 to 17·7% of all leprosy cases. The most common presentation of PNL is a mononeuritis (single nerve involvement) which occurs in about 60% of the cases.

Objective: To study and compare epidemiological and clinical data of pure neuritic leprosy in tertiary care centre.

Patients /Materials and Methods: We conducted a retrospective study of PNH patients who were admitted or visited out patient department of dermatology from January 2021 to January 2022. We analyzed medical data consisting detailed history, clinical examination findings, laboratory and radio-logical reports, and photographic records of (no. of pt) patients of PNH ulcers fulfilling the inclusion criteria (histopathology and nerve conduction study proven).

Results: A total of 150 Hansen patients were screen out of which 5 cases of Pure neuritic hansen were detected out of which there were 4 male and 1 female. 4 males were having ulnar involvement and 1 female was having ulnar and radial cutaneous involvement .

Conclusion: In summary, PNL is a definite clinical entity with subtle findings .. Early diagnosis and prompt institution of treatment is required for better functional recovery and prevention of disabilities. Skin biopsy and nasal mucosal biopsies yielding positive results in 32·1% and 51% respectively would suggest that PNL is the earliest presentation which may not show any changes in the overlying skin or AFB positivity on SSS .

Keywords: Pure Neuritic Hansen, Ulnar, Epidemiology

#0494/ ILCABS830

REVISITING DEFORMITIES IN THE POSTELIMINATION ERA OF LEPROSY - A RINGING ALARM

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Introduction: India has achieved the status of elimination in 2005 with the advent of multidrug therapy reducing the high crippling potential of Leprosy. The WHO strategy zero disease, zero disability, and Zero discrimination aim to reinvigorate efforts to control leprosy and avert leprosy disability to less than 1 per million population. Despite the decrease in the prevalence of leprosy, the increase in childhood leprosy and Grade II disability among new cases indicates continued transmission and late detection. Revisiting the causal factors could be a projecting trend towards elimination.

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Objective: To estimate the prevalence of deformities and their association between time and the type of leprosy. To analyze the causal factors of deformities in leprosy

Methods: and materials: It's a Retrospective descriptive cross-sectional study of the available records from 2017-2022 at the District leprosy office of Hyderabad district. The association of the cases and deformities with the time is analyzed using the chi-square test. SPSS software version 24 is used to quantify the available data across the timeline.

Results: There are 34 grade II deformities identified from 2017 to 2022 with a male : female: child ratio of 24:9:1 with male preponderance. The reasons for late presentation are rooted in the patient's health-seeking behavior, inadequate skills of the health care providers, and a dearth of diagnostic tools in identifying the deformities at the earliest.

Limitations: Inadequacy of the clinical details regarding the time of onset and the presentation as it is a retrospective analysis of the data available with the departmental records.

Conclusion: The existing prevalence of deformities in its varied presentation calls forth a revisit into the casual factors and intensified efforts to plug in the lacunae in arresting transmission of leprosy.

Keywords: Leprosy, Deformities

#0495/ ILCABS842

EPIDEMIOLOGY ASPECTS- REACTIONS IN LEPROSY

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Introduction: Leprosy reactions, reversal reactions/RR and erythema nodosum leprosum/ENL, can cause irreversible nerve damage, handicaps and deformities.

Objective: To find the relative prevalence of lepra reactions among leprosy patients attending dermatology out-patient department, the pattern of reactions in different types of Leprosy and histopathological findings in reactions.

Patients/Material and Methods: The study was an institution based,longitudinal study. A total of 78 leprosy cases attended the dermatology out-patient department of KEM hospital in Mumbai, India in the year 2021.

Results: Out of 78 patients, 15 (19.23%) were diagnosed to have lepra reactions and relative prevalence of Type 1 and Type 2 reaction was (14.1%) and (5.1%) respectively. Lepra reactions were common in patients over 20 years of age .There was a high male preponderance and the male to female ratio was 11:4. Type 1 reaction was more common in BT patients whereas Type 2 reactions were commonly seen in LL patients.On histopathology,papillary dermal edema and lymphocytic infiltration within granulomas were common findings in type 1 lepra reaction .Presence of giant cells in the granuloma is one of the finding which helps in classifying histopathologically the features of upgrading and downgrading type1 lepra reactions. Classical signs of vasculitis were also present in ENL cases.Infiltration of granulomas by neutrophils was common finding in cases of type 2 reaction.In subcutaneous tissue granulomatous infiltrate can be seen in cases of lepromatous leprosy .But the presence of neutrophils in subcutaneous tissue is an important clue to the type 2 reaction.

Limitations: Since it is a retrospective study, some of the details were missing.

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Conclusions: Lepra reactions, both Type 1 and Type 2 occur in 20% of leprosy patients.Early detection is helpful to avoid complications.

Keywords: Leprosy, Lepra reaction

#0496/ ILCABS851

LEPROSY AND SOIL-TRANSMITTED HELMINTHS PART 3: WATER, SANITATION AND HYGIENE (WASH) TRAINING AND SOCIOECONOMIC INDICATORS

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Introduction: Chronic STH infection can reduce host cellular immunity, and, accordingly, STH-coinfections in leprosy have been associated with higher burdens of *M. leprae* (MB, LL). Deworming and water sanitation and hygiene (WASH) training are common interventions to reduce STH prevalence. Deworming and Water and Sanitation and Hygiene (WASH) training are common interventions to reduce STH prevalence.

Objective: To explore variables of leprosy clinical and socioeconomic indicators, WASH training and implementation sustainability, and STH indicators and treatment over time in a leprosy and STHin a co-endemic context.

Methods: New leprosy and new leprosy reaction cases and household contacts were interviewed and screened by qPCR for STH co-infections common in Nepal at intake and quarterly for up to 2 years. Participants were provided deworming treatment, ivermectin and albendazole, at intake and 6-monthly during the study. WASH training was provided at intake.

Results: 334 new and/or reaction leprosy cases and 104 household contacts were enrolled. Provisional analyses indicated 38% of participants had ≥1 STH infection at enrolment. Of those, only 25% drank purified water and 40% washed hands at critical times (after toilet, after touching dirty things and before cooking) which gradually increased to 60% and 50% respectively at during 2-year follow-up. At enrolment, only 23% of participants had WASH knowledge, and this was associated with low education status with 40% of participants having lower secondary educations. After the first deworming treatment, 70.0% (95% CI: 58%-79%) of initially STH positive cases presented as STH negative at the 3 month follow-up visit.

Limitations: It is not possible to confirm presence or durations of previously or recent cleared STH infections.

Conclusion: Participants from lower socioeconomic and educational backgrounds were more often infected with STH and had little prior knowledge of WASH. Some aspects of WASH were more sustainably implemented. More analyses in progress.

Keywords: Water Sanitation and Hygiene (WASH), Leprosy, Soil-transmitted Helminths,

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CHILDHOOD LEPROSY: A RETROSPECTIVE DESCRIPTIVE STUDY

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Childhood leprosy: A Retrospective Descriptive Study

Introduction: Epidemiologically childhood leprosy is an index of active transmission in the community and allows identification of index case . Children are believed to be more vulnerable to infection. Leprosy in children is unique as it causes progressive disability. In the post elimination era though the general prevalence in leprosy decreased, the increase in the childhood leprosy and the Grade 2 Deformities indicate increased transmission and delay in detection of cases .The incidence of leprosy among children become an important marker of the ongoing leprosy control programme.

Objective: This study is to analyze cases of childhood leprosy identified in Hyderabad District, Telangana, during 2010-2022 and to estimate the disease burden and the causal factors of Childhood leprosy.

Materials and Methods: Retrospective and cross sectional descriptive analysis available at District Leprosy office, Hyderabad from 2010 t02022.

Results: The total number of 2054 leprosy cases identified during 2010-2022 and 147 were child cases amounting to 7.16%,Of which 58 were MB(39.45%) and 89 were PB(60.54%). The male female percentage ratio was 53.06 and 46.94 respectively with slight male preponderance.

Conclusion: The rate of childhood leprosy continues to be high despite the advent of MDT. Lack of awareness among general population and complacency among front line health care personnel and in sufficient skills among the medical fraternity to identify the cases at the time of presentation were found to be prime reasons to be addressed to achieve zero transmission, zero disability and zero discrimination.

Limitations: Incompleteness of data concerning clinical variable might cause inter observations. We tried to minimize the error by applying intensive supervision by experienced field staff.

Keywords: Childhood, Transmission, Disability, Deformities, Identified

#0498/ ILCABS897

TRENDS IN THE CLINICAL PRESENTATION OF LEPROSY- AN EIGHT YEARS RETROSPECTIVE COHORT STUDY FROM AN NGO LEPROSY REFERRAL CENTRE

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Introduction: Leprosy is traditionally be described as presenting with the standard skin and nerve lesions as described in the standard text books and guidelines. However, given the dynamic nature of the epidemiology of communicable diseases, it is essential to investigate and observe for changing trends in leprosy presentation, in order for accurate diagnosis and appropriate treatment.

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Objective: To compare the demographic, clinical and bacteriological presentation of new leprosy patients registered for MDT during each of the two four year blocks.

Methodology: A retrospective desk review of data was done for the new cases detected and treated for the years 2014-2018 and 2018 to 2022.

Results: During 2014-2018 a total of 210 new cases were registered. Average age was 35.9 years, proportion of female cases were 24.7% to 39%, mean duration of symptoms before MDT was 35.7 months. The proportion of MB cases were 76% to 86%, Slit skin smear positivity was 26% to 47%, Average BI value was 2.6+ to 3.8+. Lepromatous leprosy cases were 8.1% to 17.6% among the total cases. No of cases with G2D were in the range of 9 to 15

During 2018-2022 a total of 212 new cases were registered. Average age was 28.2 years, proportion of female cases were 31% to 45%, mean Duration of symptoms before MDT was 24.5 months,. The proportion of MB cases were 76% to 85%, Slit skin smear positivity rate was 25% to 33%, Average BI value was 3.1+ to 3.7+. Lepromatous leprosy cases were 9.8% to 15.6% of the total cases. No of cases with G2D were in the range of 12to 18

Conclusion: The proportion of female patients, lepromatous leprosy cases, Slit skin smear positivity rate increased and new patients with G2D marginally increased during 2018-2020. Awareness activities on leprosy have to be continued.

Keywords: Epidemiology, Duration of disease

#0499/ ILCABS907

GEO SPATIAL MAPPING FOR IDENTIFYING CLUSTER BY A TERTIARY HOSPITAL FOR LEPROSY AT UTTAR PRADESH

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Introduction: People affected by leprosy are scattered across diverse location in rural, urban, near and far. To care for people who are non compliant for MDT, disability care, ulcer care etc are difficult. GIS mapping is needed to identify clusters, prioritize and intensify our programs.

Objective: To determine the locations and form clusters of people visiting the tertiary hospital for leprosy.

Method: Study area: The study is conducted at the Ayodhya district, in Uttar Pradesh.

Approach: All patients from Ayodhya district, in Uttar Pradesh registered for treatment at either public health facility or TLM hospital currently are line listed based on the data available in the health facility. All line listed patients are geo referenced at village level for rural parts and at area level in urban/town areas

Data collection: The data are collected based on the minimum information available in the Health Management System (HMS) and treatment register available from public health facility The data includes demographic data, Type of leprosy – MB / PB, Disability level – 0 / 1 / 2, Treatment completion status – Completed / defaulted, When did the default happen (month of MDT)? – 1,2,3,4,5 (for PB),6,7,8,9,10,11 (for MB)

After line listing the patients, Geo reference codes are taken from the reliable source, from the internet based on the area name.

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Results: The maps are generated, clustered are identified and established for MDT non compliance, disability care, new case registration etc.

Limitation: Done in only one District where are people come for treatment from about 20 Districts.

Conclusion: Mapping is essential to provide focused care, when the catchment area is wide and to prioritize programs. Local community and stakeholder engagements can be sought for effective intervention based

Keywords: Geo spatial mapping, Cluster

#0500/ ILCABS915

MULTIBACILLARY LEPROSY IN FAMILY MEMBERS-LIFE LONG SURVEILLANCE NEEDED

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Introduction: An interesting case of Multibacillary leprosy patient in a family by follow-up for three decades from the detection in father.

Description of the case/issue: The head of the family was confirmed as Multibacillary leprosy patient in 1991 by Leprosy Inspector (LI)who joined service in 1987.Patient had taken the MB-MDT –ADULT dose for 1 year and released from treatment in 1992.He had 7 children. The LI has been working in the same block & same district for next 30 years.

The leprosy inspector was promoted as Non Medical Supervisor(NMS) for that block in 2019.On regular follow up and casual asking for whereabouts and health of the patient's children, NMS visited nearby village in 2019 to see one of patient's son. He had multiple anesthetic patches, BL spectrum MB-MDT Adult treatment started for him. He told that his younger brother also having similar lesions, who was married in 2011 and living in urban area at a distance of 35 Kms.During the Covid pandemic, all frontline health staff were doing covid duty.

In February 2022, the younger brother(suspected case) had Systemic Hypertension/Brain stem stroke/Left hemiparesis and been treated by a neurologist . After recovery he called our health staff, who has been promoted as District Health Educator (Leprosy).

During the visit to his home, he was examined and confirmed as a case of MB leprosy-Infiltration of skin over trunk, Left ulnar nerve thickened, Rt lateral popliteal nerve thickened. Due MB-MDT Adult treatment started. Single dose Rifampicin to his contacts (family members) given immediately.

Conclusion: Each Multibacillary case of leprosy to be followed regularly with contact tracing &survey &complete examination upto decades to detect leprosy in the contacts and to start treatment immediately.

Keywords: Multibacillary, Chronic surveillance, Contact tracing

#0501/ ILCABS918

CLINICAL PROFILE OF LEPROSY AMONG MIGRANT LABOURERS DIAGNOSED IN A TERTIARY CARE CENTER IN CHENNAI

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Introduction: Leprosy is a chronic granulomatous infection caused by Mycobacterium leprae. It primarily affects the skin and peripheral nerves, more common in developing countries. In India, it is highly endemic

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in the states of Chattisgarh, Bihar, Jharkhand, and Odisha. In recent years, Chennai has witnessed a steady influx of migrant laborers from these areas.

Objectives: To identify the Clinico- epidemiological profile of leprosy among migrant patients and native patients diagnosed at a tertiary care center in Chennai.

Patients: Case records of patients who were diagnosed and treated for leprosy in our institute from November 2021 to April 2022 and demography, clinical profile, and treatment details were noted. All patients underwent skin biopsy and slit skin smear for acid-fast bacilli and were categorized.

Results: Among 23 cases, 14 were migrants and 9 were natives. The most common age group was 20- 40 years in migrants and 30-70 years in natives. The number of males were 10 and female was 4. Tuberculoid leprosy was higher than lepromatous leprosy in migrants and inversely in natives. Type 1 reaction was more common than type 2 reaction. Trophic ulcers were noted in 2 patients among migrants. The frequency of leprosy was more in the migrant population. The frequency of reactions was lesser compared to the migrant population.

Limitations: The study period was short. Follow-up was lost for a few patients. The study was conducted only at a single tertiary care center.

Conclusion: There is a rise in the frequency of leprosy among migrant workers. There arises the need to identify vulnerable groups, regular health checkups and leprosy detection camps among the migrant population will promote early diagnosis and prompt treatment. Health education and improving the living standards of the migrant

Keywords: Leprosy, Migrant population, Chennai

#0502/ ILCABS938

LEPROSY (HANSEN'S DISEASE) IN THE CONTEXT OF SKIN NTDS INTEGRATION FRAMEWORK

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Introduction: On June 8, 2022, World Health Organization (WHO) has published a strategic framework for skin-related neglected tropical diseases (skin NTDs) that identifies opportunities to integrate approaches for control and management, including common learning platforms, capacity-building for case detection and delivery of treatment.

Description of the issue: Some NTDs, including leprosy or Hansen's disease, can be considered as part of the broader group of skin conditions, as the lesions they cause are typically located on the skin, or because they first present with changes in the skin well before any changes in the internal organs occur. Most of these NTDs with skin manifestations, or "the skin NTDs", are historically neglected because active case detection, individual case management, significant resources and intensive efforts are required to control, eliminate

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and eradicate them. Integrated control and management of skin NTDs is expected to offer a pathway to overcome some of these past challenges by sharing of resources and efforts. Through the two online consultations, we received replies from over 300 individuals, including NTD programme personnel from national to peripheral levels, health care workers, persons affected by skin NTDs, academics, donors and partners as well as technical advisers from all six WHO regions, from which we identified twenty potential areas for integration. Most skin NTDs lead a chronic clinical course, which sometimes can be for a life time and require long-term treatment and care, leprosy being one of the leading cause. In the framework, we have especially focused on the people- or persons-centered care for those affected by skin NTDs.

Conclusion: Carefully considered steps and actions are necessary so that the expertise in leprosy will be kept; while at the same time, working hand-in-hand with other skin NTDs is expected to bring about benefits and new opportunities for the control of leprosy.

Keywords: Framework, Integration, Leprosy, Hansen's disease, National programmes, World Health Organization

#0503/ ILCABS950

ANALYSIS OF EPIDEMIOLOGY AND CLINICAL CHARACTERISTICS OF LEPROSY IN CHILDREN IN GUIZHOU PROVINCE FROM 2009 TO 2021

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Objective: To understand the clinical and epidemiological characteristics of childhood leprosy in Guizhou Province,and to provide reference for the prevention and control of childhood leprosy in the future.

Methods: Epidemiological and clinical data of pediatric patients in 2021,2009–2021 were collected and analyzed retrospectively.

Results: From 2009 to 2021, 1 806 new leprosy patients were found, including 64 children, with a child ratio of 3.54%. After 2012, the ratio of children and the discovery rate showed a significant downward trend; there were 7 patients with grade 2 deformity, accounting for 10.94%. The child patients found after 2013 had no grade 2 deformity; the average delay period was (13.12±12.13) months. There was significant difference in the delay period among different sources of infection ((x^2=8.195, P<0.05); The composition ratio of MB in ethnic minorities is higher than that in Han nationality, the difference is statistically significant (x^2 = 5.292, P < 0.05);43 patients (67.19%) with nerve involvement≥2 nerves; in 57 patients with nerve involvement, 43 cases (75.44%) of ulnar nerve, 22 cases (38.60%) of greater auricular nerve and 25 cases (43.86%) of common peroneal nerve were damaged. There were 29 cases (45.31%) with more than 5 lesions, mainly erythema in 29 cases (50.88%), light spots in 27 cases (47.37%) and nodules in 12 cases (21.05%).

Conclusion: The discovery of children with leprosy in Guizhou Province suggests that the leprosy transmission chain still exists in some counties and regions. Clinically, it is mainly multi skin lesions and multi nerve involvement. We should adhere to the regular follow-up measures of leprosy home contacts and promote the monitoring of suspected leprosy symptoms in dermatology, so as to improve the early detection

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of patients. It is suggested to take chemical preventive drugs for leprosy home close contacts to break the transmission chain, In order to achieve the goal of "zero" new patients.

Keywords: Leprosy, Children, Epidemiological characteristics, Clinical characteristics

#0504/ ILCABS951

EPIDEMIOLOGICAL ANALYSIS OF LEPROSY IN GUIZHOU PROVINCE DURING 1999-2021

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Objective: To analyse the epidemic trend of leprosy in Guizhou Province from 1999 to 2021, in order to improve the prevention and control strategy of leprosy in our province, with a view to eliminating leprosy hazards. Methods the data of leprosy in Guizhou Province from 1999 to 2021 were analysed retrospectively.

Results: From 1999 to 2021, 4,102 cases of leprosy were found in Guizhou Province. The incidence of leprosy decreased from 0.69 / 100,000 to 0.15/ 100,000, with an average annual decrease of 3.40%. Bijie city, Anshun city, Southwest Guizhou and South Guizhou accounted for 71.50 percent of new cases. The ratio of male to female was 2.70:1 and the proportion of female patients was increasing. There were 157 children cases, the ratio of children showed a decreasing trend. The type ratio was 2.33:1 and it had an increasing trend. There were 1091 cases with grade 2 disability, ratio of grade 2 disability showed a decreasing trend. The patients were found mainly by initiative (53.73%) . The proportion of dermatology, contact was increasing.

Conclusion: The epidemic situation of leprosy in Guizhou Province is in a downward trend and a low epidemic state. In view of the fact that there are still some cases of children with high incidence of 2 malformations, it is necessary to pay attention to the family clustering epidemic, to promote early detection measures of suspicious symptoms of leprosy and to further eliminate the harm of leprosy.

Keywords: Leprosy, Epidemiological situation, Guizhou

#0505/ ILCABS972

AN ANALYSIS OF EPIDEMIOLOGICAL CHARACTERISTICS OF THE NEW PATIENTS OF LEPROSY FROM 2000 TO 2020 IN GANSU PROVINCE

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Objective: To analyze the epidemiological characteristics and regularities of the new patients of leprosy from 2000 to 2021 in Gansu province, and to provide the reference for the change of leprosy prevention and control strategies in low epidemic areas.

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Methods: Descriptive analysis of the data ofthe new patients of leprosy in Gansu provice reported in the Leprosy management information system in china from 2000 to 2021.

Results: The annual detection rate of the new leprosy cases in Gansu provice from 0.056/105 to 0.006/105 from 2000 to 2021, with an average annual decline rate of 10.1%; A total of 133 new cases were reported, including 87 males and 46 females, with a male-to-female ratio of 1.9:1 and there were 8 recurrent cases and 4 children cases; There were 42 cases of grade II deformity (grade II deformity rate was 31.6%), and the average delay period was 47.7 months; Early detection accounted for 12.78%, the main methods of detection were self-report and disease reporting (80 cases, accounting for 60%), 6.02% were found through contact inspection, the cases with the source of infection from home accounted for 31.58%, and the cases with unknown source of infection accounted for 64.66%; The average age of new cases was (40.65±13.84). and the new cases were all local cases. Eight of the 14 cities and states in the province reported new cases, were distributed in 31 counties . The number of cases reported in Longnan City accounts for 60% and in Pingliang, Qingyang and Gannan cities accounts for 28.6% of the total in Gansu Province,and the cases were mainly sporadic

Conclusion: The number of new cases reported in Gansu provice shows a slow downward trend, but fluctuates greatly. There were related to the work intensity and measures.

Keywords: Leprosy, New cases, Epidemiological characteristics

#0506/ ILCABS974

EPIDEMIOLOGICAL CHARACTERISTICS OF LEPROSY IN GANZHOU CITY,JIANGXI PROVINCE,CHINA FROM 2011 TO 2021

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Objective: To analyze the epidemiological characteristics of leprosy in Ganzhou city, Jiangxi Province from 2011 to 2021, and to provide basis for formulating prevention and control strategies in the future.

Methods: The information of patients with new, recurrent and present leprosy in Ganzhou city from 2011 to 2021 was obtained from the National Leprosy Control and Management Information System (LEPMIS).The case distribution and case characteristics were analyzed, and the influencing factors of grade 2 malformation in new leprosy cases were analyzed by the conditional Logistic multivariate method.

Results: There were 117 new leprosy cases in Ganzhou city from 2011 to 2021,with an annual average of 10 cases(10.64±4.78).The annual detection rate decreased from 0.1858/100,000 to 0.0347/100,000. Among the new cases, there were 4 children aged 11-14 years, accounting for 3.42% of the new cases. There were 100 cases of leprosy with multiple bacteria, accounting for 85.47%. There were 33 cases (28.21%) of grade 2 deformity(G2D), and the influencing factors included education level, discovery method, type and delay period($P<0.05$). A total of 10 recurrent cases were reported. The annual average of present cases was 64(64.64 ±17.31), and the annual prevalence decreased from 0.1115 to 0.0440 per 10 000. The annual detection rate and prevalence rate decreased by 81.62% and 63.64%, respectively. Please add other analysis such as rate of leprosy reaction, diagnosis delay, etc.

Conclusion: The epidemic status of leprosy in Ganzhou city decreased gradually from 2011 to 2021,belonging to the low epidemic status, but there were still children cases and a high incidence rate of G2D. The epidemic

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situation is still grim, and it is necessary to ensure the continuity of prevention and control work, and further strengthen measures for early detection, diagnosis, treatment and prevention of leprosy cases.

Keywords: 2011-2021, Ganzhou City, Jiangxi Province, Leprosy, Epidemiological characteristics

#0507/ ILCABS977

ANALYSIS OF THE CHARACTERISTICS OF NEW LEPROSY PATIENTS IN GUIZHOU PROVINCE

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Objective: To understand the characteristics of new leprosy patients in the low-prevalence state in guizhou province, so as to provide scientific basis for discovering more early leprosy patients in the future and effectively reducing the level 2 disability ratio.

Methods: A unified questionnaire was used for on-site one-to-one survey, all patients' personal information was input into EXCEL to establish a database, and SPSS18.0 software was used for analysis.

Results: Among the 398 newly diagnosed leprosy patients in guizhou province from 2012 to 2021, there were 290 males. Males:Female = 2.69:1, Patients aged 14 years and under accounted for 4.02%, with an average delay of 43.59 months. There were 321 cases (80.65%) of ulnar nerve involvement, 178 cases (44.72%) of Nervus peroneus communis invovlement. There were 107 cases of numbness (26.88%),104 cases of erythema (26.13%) .MB type accounted for (76.13%), MB:PB = 3.19:1, By comparison, there was no difference in different types of leprosy in gender, age and delay period, but the MB type of minority patients was significantly higher than that of han patients (x^2 =5.263, P< 0.05), and the MB type of patients with clear infection source was higher than that of those with unknown infection source (x^2 = 6.234, P< 0.05).154 cases (84.62%) were in the early stage of the disease with no disease disability within 2 years, early stage patients with high education (above junior high school) were the majority (57.98%).93.75% of patients aged 14 and under had a clear history of contact with the source of infection.

Conclusion: In recent years, the new leprosy cases in guizhou province are mainly multibacillary, and children are found every year, there is still a risk of local epidemics, and there is delay in diagnosis as well. It is urgent to improve the ability of medical staff to recognize leprosy early.

Keywords: New case of leprosy, Characteristics, Analysis

#0508/ ILCABS978

INVESTIGATION OF AWARENESS RATE OF CORE KNOWLEDGE OF LEPROSY CONTROL AMONG DIFFERENT POPULATIONS IN NANJING,CHINA

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Objective: To understand the awareness rate of core knowledge of leprosy control among different populations in Nanjing, and to provide a more accurate scientific basis for the prevention and control of leprosy in the future.

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Methods: A total of 739 people (individuals), including urban residents, township residents, middle school students and close contacts, were selected by stratified random sampling meth od to carry out a questionnaire survey on core knowledge of leprosy prevention and control.

Results: In 2020, the awareness rate of leprosy core knowledge was 57.24%, the difference of different populations (Urban residents, urban residents, middle school students, close contacts) was statistically significant ($\chi2=34.74$, $P < 0.05$). There were significant differences in different occupation and among different age groups.($\chi2 = 18.37$, $P<0.05$; $\chi2=14.75$, $P < 0.05$). Among the single core awareness rates, the awareness rate of the early symptoms of leprosy was the highest (60.62%). Public access to the core knowledge of leprosy prevention and treatment is mainly through publicity activities and television broadcasts.

Conclusion: In 2020, the awareness rate of leprosy core knowledge prevention and control among the public in Nanjing is low, which fails to meet the expected goal of the national plan to eliminate leprosy hazards. Therefore, diversified forms of health education should be adopted for different populations.

Keywords: Leprosy, Core knowledge, Awareness rate

#0509/ ILCABS979

EPIDEMIOLOGICAL CHARACTERISTICS OF LEPROSY DURING 2005-2020 IN JIANGSU PROVINCE, CHINA

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Background: Through sustained efforts over the past few years, leprosy has been effectively controlled, but 300-500 new cases of leprosy are still being detected in China annually. New patients are also emerged in Jiangsu Province, which posed new threats to leprosy prevention and control. This study aimed to explore the epidemiological characteristics of leprosy from 2005 to 2020, aimed to provide scientific basis to the development of leprosy control strategies.

Methods: Population data were obtained from the Statistical Yearbook of Jiangsu Province. All the epidemiological data of newly detected leprosy cases were obtained from the Leprosy Management Information System (LEPMIS) in China. We utilized both descriptive analysis and GIS methods to depict the spatial and temporal characteristics of newly detected leprosy cases from 2005-2020.

Results: During the period, 363 new cases of leprosy were detected, 232 men and 131 women with a male-to-female ratio of 1.77:1. The annual detection rate decreased from 0.033/100,000 to 0.007/100,000 and G2D rate decreased from 25.93% to 16.67% (please add the Chi-square trend test). Among these cases, farmers accounted for 74.9%. 327 (90.08%) cases were diagnosed as MB and 36 (9.92%) cases as PB. The average time to diagnosis in 2020 was shorter than 2005 (12 months vs 18 months). The highest number of cases was recorded in 2009 (34 cases). The number of cases detected in September 2009 (8 cases) was the highest month. The newly identified leprosy cases were mainly concentrated in the north-western part of the province. At the prefecture-level city level, Suqian (50) has the highest number of new cases. And at the county level, Pizhou (15) has the highest number of new cases. In addition, 308 (84.85%) were born in Jiangsu Province and 55 were registered in other provinces, but they all live in Jiangsu province.

Keywords: Leprosy

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#0510/ ILCABS983

EFFECTIVENESS AND REFLECTION ON THE IMPLEMENTATION OF THE PLAN FOR THE ELIMINATION OF LEPROSY HAZARDS (2011-2020) IN JIANGSU PROVINCE, CHINA

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Objective: To summarize the effectiveness and challenges faced in implementing the National Plan for the Elimination of Leprosy Hazards (2011-2020) (hereinafter referred to as the Plan) in Jiangsu Province of and provide the basis and methods for accomplishing leprosy control work in the new stage.

Methods: Information and statistics during the Plan implementation was collected, summarized, and analyzed.

Results: By the end of 2020,the province had fully accomplished the goals and tasks of the Plan, with key indicators such as the number of new leprosy cases, the number of patients with active symptom and the ratio of new cases with Grade 2 deformities decreasing from 36 cases, 184 cases and 36.11% in 2010 to 6, 60 and 16.67% in 2020, a new historical low in Jiangsu since the founding of the country. And during the implementation, several leprosy control methods had been innovated.

Conclusion: The success is due to the continuous improvement of the“government-led,multi-sectoral cooperation, increased investment, highlighting priorities, classification guidance, scientific innovation"prevention and control strategy, to promote the "four systems" of leprosy monitoring for early detection of leprosy formed in Jiangsu after 10 years of piloting, to create and promote some new initiatives and new methods, such as the strengthening of the prevention and control team and capacity building, scientific publicity, patient care and so on. However, the consolidation of the Plan’s results still faces the challenges of early laboratory diagnosis, low compliance with treatment management of migrant cases, and maintaining the sustainable capacity building of grassroots leprosy prevention and control team.

Keywords: Leprosy, Eliminating the hazards, Plan, Effectiveness and reflection.

#0511/ ILCABS984

CURRENT STATUS AND THE INFLUENCE FACTOR ANALYSIS OF CHRONIC DISEASES IN CURED LEPROSY PATIENTS IN JIANGSU PROVINCE,CHINA

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Objective: To investigate the status of chronic diseases in cured leprosy patients in Jiangsu province, analyze the influencing factors and discuss the preventive measures.

Methods: A general survey was conducted by leprosy control workers to investigate cured leprosy patients both in leprosy villages and in the community (hereinafter referred to as the village group and the home group respectively) with self-designed questionnaire.

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Results: A total of 12724 cured leprosy patients completed the survey, including 803 of the village group and 11921 of the home group, with 8969 males and 3755 females. The prevalence of hypertension, hyperlipidemia, coronary heart disease, stroke, diabetes, tumor and psychosis were 28.7%, 2.9%, 5.2%, 2.8%, 5.3%, 2.0% and 0.4%, respectively. The influencing factors are type of residence, gender, household registration and age.

Conclusion: Cured leprosy patients are faced with not only physical deformity and psychological disorder but also with chronic diseases such as hypertension and diabetes.The government and society should pay more attention to this special group of people.

Keywords: Leprosy, Chronic diseases, Cross-sectional survey, Influencing factors

#0512/ ILCABS985

ANALYSIS ON SOCIAL SUPPORT STATUS AND INFLUENCING FACTORS OF LEPROSY CURED SURVIVORS IN SUQIAN CITY,CHINA

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Objective: To study the current situation and main influencing factors of social support for leprosy cured survivors in Suqian City, so as to provide reference basis for improving social support and health intervention for leprosy cured survivors.

Methods: 341 leprosy survivors were randomly selected from 2020 to 2021, and their social support was investigated by multiple linear regression analysis.

Results: The total score of the social support rating scale of 341 leprosy survivors was (38.58±7.52), including subjective support dimension (20.92± 4.20), objective support dimension (9.89±3.11) and support utilization dimension (7.76±1.69). Factors related to the level of social support for leprosy cured survivors in Suqian include: educational level, primary school (β=5.864, 95%CI:4.313~7.415), junior middle school and above (β=7.076, 95%CI:5.292~8.859), living alone (β=-5.253, 95%CI: -7.13~-3.375), living with other relatives (β=-9.351, 95%CI:-14.146~-4.557).

Conclusions: The social support level of leprosy cured survivors in Suqian City is at a medium level and still needs to be improved. It is suggested that the government, social organizations, communities and families should strengthen their support in terms of material support, psychological counseling and humanistic care, and focus on leprosy cured survivors with low education level, living alone or with other relatives, so as to improve the quality of life of this vulnerable group.

Keywords: Leprosy cured survivors, Social support, Multiple linear regression analysis, Influencing factors

#0513/ ILCABS986

A SYSTEMATIC REVIEW AND META-ANALYSIS OF EPIDEMIOLOGY OF LEPROSY(THE TOPIC IS TOO GENERAL)

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Objective: To explore the epidemiological characteristics of leprosy, and to contribute to the construction of leprosy prevention strategies. A computer search of the Web of Science, PubMed and SCOPUS databases for cross-sectional studies on the status of leprosy prevalence from 2010 to 2020 was conducted and

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summarized. The AHRQ was assessed for quality in the included studies; a Meta-analysis of the proportions of the study indices was carried out using Stata 16.0. Meta-analysis was performed using a random effects model combining categories, including gender, type, grade 2 deformity (G2D) and age group. The subgroup analysis used region as a stratification factor to analyse whether there were differences in the indicators. The meta-analysis included 30 studies. The combined meta-analysis values of the proportion of male and female patients with leprosy were 63% (95% CI 59%, 66%) and 37% (95% CI 34%, 41%). The combined meta-analysis values of the proportion of MB and PB were 69% (95% CI 62%, 76%) and 31% (95% CI 24%, 38%). The combined meta-analysis values of the proportion of the grade 2 deformity was 22% (95% CI 15%, 30%). The pooled children proportion was 11% (95% CI 8%, 13%), and the pooled adult proportion was 89% (95% CI 87%, 92%). This study suggested that disparities existed between sex, type, grade 2 deformity (G2D) and age group characteristics of leprosy from country to country. Due to limited quality and quantity of the included studies, more high-quality studies are required to verify above conclusions.

Keywords: Leprosy, Epidemiology, Proportion, Meta-analysis

#0514/ ILCABS987

A BIBLIOMETRIC ANALYSIS OF LEPROSY DURING 2000-2021 FROM WEB OF SCIENCE DATABASE

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Background: In recent years, after the essential elimination of leprosy (prevalence <1/100,000), the trends, research hotpots, and frontiers about leprosy research are not clear.

Objective: This study provides a detailed overview of leprosy in terms of papers, journal, language, year, citations, h-index, author keywords, institution, and country through bibliometrics.

Results: The results are as follows: (1) The publication rate has increased in recent years, and 8892 papers were obtained. Most of the publications are in English and the subject categories are mainly focused on "Dermatology". The "leprosy review" published the most significant number of papers on leprosy, followed by "Plos Neglected Tropical Disease" and "International Journal of Leprosy and Other Mycobacterial Diseases." (2) 24,672 authors contributed to leprosy-related research, and the ten authors with the most significant number of publications were identified. (3) The University of London (including the London School of Hygiene and Tropical Medicine) has the highest h-index, and the Fundacao Oswaldo Cruz is the most productive institution. (4) Brazil, India, the United States, the United Kingdom, and the Netherlands are the most productive countries, and the collaborative network reveals that they have established close cooperation with other countries. France has the highest average number of citations. (5) The keyword co-occurrence network identifies five highly relevant clusters representing topical issues in leprosy research (Public health, Leprosy vaccine, Immune mechanisms, Treatment, and Genomics research).

Conclusion: This study provided comprehensive information to display the standard and prominent for topic on Leprosy using Conceptual structure analysis, and keywords evaluation methods to provides the for the readers and further provide valuable insights for scholars, research institutions, and policymakers better to understand developments in the field of leprosy research.

Keywords: Leprosy

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#0515/ ILCABS991

EARLY DETECTION OF LEPROSY CASES THROUGH CLOSE CONTACT SCREENING

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Objective: We conduct a close contact screening to early detect of leprosy cases.

Methods: In 2019, we screened close contacts of 144 new and living leprosy cases diagnosed since 2007 in Shandong province.

Results: A total of 6433 close contacts, including 72 spouses, 175 first-grade relatives, 64 second-grade relatives, 36 third-grade relatives, and 6086 neighbors were screened. Each close contact was examined by dermatologist, sampled with nose swab and 5ml venous blood. But no new leprosy case was detected in this close contact screening.

Conclusion: Active screening of close contacts of leprosy for new cases was not cost-effective in Shandong Province with low prevalence of leprosy (<1/10 million).

Keywords: Leprosy, Close contact, Screening

#0516/ ILCABS992

EPIDEMIOLOGICAL ANALYSIS OF NEW LEPROSY CASES ON MIGRATING POPULATION IN ZHEJIANG PROVINCE

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Object: To analyze the epidemiological characteristics of new leprosy cases on Migrating Population in Zhejiang provincein the last ten years, and to provide basis for the government to develop control strategies.

Methods: Epidemiological and clinical features in new reported cases on migrating population from2010 to2019 in Zhejiang province were retrospectively analyzed.

Results: 151 new leprosys were discovered in the migration population from 2010 to 2019 in Zhejiang province, accounting for 77.04% of all the new cases. 88.08%. were migrating workers and their family members, and 87.42% were distributed in Jinhua, Ningbo, Hangzhou, Wenzhou, Shaoxing and Jiaxing, there Cities were industrial and economically developed. 92.05% were age from 20 to 49 years old, and 95.36% multibacillary. Ratio of male to female cases is 2.15:1, the difference was significant to the registered population($P<0.05$). The rate of early detection was70.20%, and 11.92% were suffered from grade 2 disability.

Conclusion: The detection and management of the migrating population will be one of the main works of leprosy prevention.We should to strengthen the construction of linkage mechanism of leprosy migrating population management to contain the spread of leprosy.

Keywords: Leprosy, Migreting population, Epidemiology

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#0517/ ILCABS993

PREVALENCE AND INFLUENCING FACTORS OF LEPROSY REACTIONS FROM 2010 TO 2019 IN ZHEJIANG PROVINCE

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Objective: To analyze the prevalence and influencing factors of leprosy reactions in Zhejiang Province from 2010 to 2019, so as to provide reference for the control of leprosy.

Methods: Through the national leprosy management system, the new leprosy cases in Zhejiang Province from 2010 to 2019 were recruited to analyze the incidence of leprosy reactions in different demographic characteristics and leprosy clinical features. The multivariate logistic regression analysis was conducted to explore the influencing factors for leprosy reactions.

Results: Totally 191 leprosy cases were investigated. The incidence rate of leprosy reactions was 29.32%; the incidence rate of type I and type II reaction was 16.75% and 9.42%, respectively. There were 33 leprosy reaction cases (58.93%) before multidrug therapy (MDT), 13 cases (23.21%) during 0-6 months of MDT, 5 cases (8.93%) during 7-12 months of MDT, 3 cases (5.36%) during over 12 months of MDT, and 2 cases (3.57%) after MDT. The results of the multivariate logistic analysis showed that the cases who were 35 years old or below (OR=2.245, 95%CI: 1.006-5.008), were not floating population (OR= 3.442, 95%CI: 1.394-8.494), were infected outside family (OR=3.878, 95%CI: 1.075-13.993) and were smear positive (>0+,OR=4.514, 95%CI: 1.365-14.926; >3+, OR=4.727, 95%CI: 1.443-15.485) were risk factors for leprosy reactions.

Conclusions: The prevalence of leprosy reactions is high in Zhejiang Province from 2010 to 2019, and is associated with age, floating population, source of infection and BI.

Keywords: Leprosy, Leprosy reactions, Multidrug therapy, Bacterial index, Floating population

#0518/ ILCABS996

EPIDEMIOLOGICAL ANALYSIS OF NEW CASES OF LEPROSY AMONG MIGRANT POPULATION IN WENSHAN PREFECTURE FROM 2011 TO 2020

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Background: To explore the epidemic characteristics of leprosy cases among the floating population originated from Wenshan Prefecture, and to provide scientific basis for the development of management measures and prevention strategies for floating population.

Methodology/Principal findings: Descriptive epidemiological methods were used to analyze the epidemiological characteristics of 129 cases of leprosy came from floating population originated from wenshan prefecture during 2011-2020. A total of 129 cases were diagnosed. The male to female ratio was 3.6:1. The average age was 28 years,ranging from 11 years to 57 years. 3 cases (2.33%) were ≤14 years old. 114 cases (88.37%) were farmers, followed by 7 cases (5.43%) of students. Qiubei County and Guangnan County had 49 and 45 cases, respectively. 12 cases (9.30%) went outside the province, and 60 cases (46.51%) were detected in Guangdong Province, 33 cases (25.58%) detected in Zhejiang Province, and 13 cases

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(10.08%) in Fujian Province. The main mode of case detection was dermatology outpatient department (52,40.31%), followed by self-report (19.38%) in 25 cases. 89.92% of the cases were multibacillary cases. Grade II disability proportion was 15.50%; The average delay in diagnosis was 18 months, and the main source of infection was household contacts, accounting for 51.16%.

Conclusions/Significance: The prevention and control measures for high-risk floating population of leprosy in Wenshan Prefecture are effective, which is of great significance for timely detecting early leprosy patients in high-risk floating population and preventing the occurrence of malformation and disability.

Keywords: Leprosy, Migrant population, Epidemiological analysis

#0519/ ILCABS997

ANALYSIS ON THE EFFECT OF CHEMOPROPHYLAXIS IN PREVENTION OF LEPROSY AMONG HIGH-RISK POPULATION IN WENSHAN PREFECTURE

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Background: To understand and analyze the efficacy of chemoprophylaxis in prevention of leprosy among high-risk population in Wenshan prefecture, and to provide some basis for chemoprophylaxis of leprosy.

Methodology/Principal findings: Used by county (districts) for the sampling unit, cluster sampling leprosy household contacts within the target population for chemoprophylaxis, Community intervention (Community -based Interventions) control study, extracting Maguan county and Funing county household contact with 295 people in the control group, Wenshan city, Yanshan county, Qiubei county, Guangnan county, Xichou county, Malipo contacts in the family, a total of 565 people, prevent the onset of leprosy drug intervention study, which, Yanshan county, Malipo Wenshan city close contacts, a total of 279 household contacts for rifampicin group, In Qiubei county, Guangnan county and Xichou county, a total of 286 household contacts were in the rifapentine group.The efficacy of chemoprophylaxis in prevention of leprosy among household contacts was analyzed by chisquare test.

The effective samples in this study, 860 people, including 295 people in the control group, 31 of them became ill, rifampicin group of 279 people, 4 of them became ill, spray at the group of 286 people, 2 of them became ill, for rifampicin and sprayed at the butyl group infection situation of chi-square test, the results there was no significant difference (χ^2=0.194,P=0.194), the drug intervention group and intervention group infection situation of chi-square test, the results have significant difference (χ^2=42.006,P=42.006).At the same time, the incidence of leprosy in high-risk groups from 2002 to 2009 and 2010 to 2018 was also tested by chi-square test, and the results showed significant difference (χ^2=52.343,P=0.000), suggesting that drug intervention was effective in preventing the incidence of leprosy in high-risk groups.

Keywords: Leprosy, High-risk groups, Drug intervention, Prevention effect

#0520/ ILCABS1000

TOWARDS THE ELIMINATION OF LEPROSY IN YUNNAN, CHINA: A TIME-SERIES ANALYSIS OF SURVEILLANCE DATA

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Background: This study reviews the progress of leprosy elimination in Yunnan, China, over the past 30 years and identifies the challenges for the next stage of the program.

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Methodology/Principal findings: Data were collected from the Leprosy Management Information System in China (LEPMIS).The progress made in the elimination of leprosy between 1990 and 2019 was measured. We defined two time periods, period 1 (1990–2003) and period 2 (2004–2019),because multidrug therapy (MDT) was launched for the treatment of leprosy in 1990 and a special fund from the central government was established for leprosy in 2004. During the past 30 years, the number of newly detected leprosy patients in Yunnan has steadily declined. In total, 703 newly detected leprosy patients were reported in 1990, and 353 and 136 cases were reported at the end of 2003 and 2019, respectively. At the end of 1990,90.7% (117/129) of counties in Yunnan Province were identified as leprosy-endemic counties (>1 case per 100,000 population). By the end of 2003 and 2019, the prevalence rate ofleprosy in 39.3% (46/117) and 85.5% (100/117) of the leprosy-endemic counties, respectively, had dropped below the elimination threshold. The main challenges are the remaining leprosy-endemic counties, the high proportion of cases with household contacts, insufficient early detection, and leprosy cases resulting in physical disability.

Conclusions/Significance: A multifaceted strategy for leprosy elimination in Yunnan Province has been successfully implemented, and remarkable progress has been made in the elimination of leprosy in this area. The priorities for leprosy elimination in the next stage are securing sustainable support and investment from the government, establishing an effective surveillance system, improving early detection, providing treatment with MDT, preventing transmission of *M. leprae*, preventing disability, providing health education, and preventing recurrence of the epidemic situation of leprosy.

Keywords: Leprosy, time-series analysis

#0521/ ILCABS1001

THE STATE OF THE LEPROSY EPIDEMIC IN YUNNAN,CHINA 2011−2020: A SPATIAL AND SPATIOTEMPORAL ANALYSIS, HIGHLIGHTING AREAS FOR INTERVENTION

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Background: Despite public health efforts to reduce the leprosy burden in Yunnan, China, leprosy remains an important public health problem in some specific areas. We analyzed the epidemiological characteristics and spatial distribution of leprosy in Yunnan, China, and provide data to guide disease prevention and control efforts.

Methodology/principal findings: The surveillance data of newly detected leprosy cases in Yunnan, China, during 2011–2020 were extracted from the LEPROSY MANAGEMANT INFORMATION SYSTEM IN CHINA (LEPMIS), and spatial distribution analysis, spatial autocorrelation analysis, and spatiotemporal scanning were performed with ArcGIS 10.6.1, GeoDa 1.8.8, and SaTScan 9.4.3 software,respectively. During 2011–2020, a total of 1907 newly detected leprosy cases were reported in Yunnan,China. The new case detection rate (NCDR) decreased from 0.62/100000 in 2011 to 0.25/100000 in 2020, with an even annual incidence of 0.41/100,000. The proportions of multibacillary (MB) cases, female, grade 2 disability (G2D), and child case were 67.07%, 33.93%, 17.99%, and 2.83%,respectively. The number of counties with an incidence above 1/100,000 population decreased from 30 in 2011 to 8 in 2020. The Moran's I of leprosy in Yunnan, China, during 2011–2020 ranged from 0.076 to 0.260, indicating the presence of spatial clusters. Local spatial autocorrelation (LSA) analysis showed that high-high cluster areas (hot spots) were mainly distributed in the southeastern, northern, and northwestern regions. Spatiotemporal scanning

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showed three clusters with high NCDRs. The probably primary clusters, occurring during 2011-2015, covered 11 counties in the southeastern region (RR = 5.046515, LRR = 271.749664, P = 0.000).

Conclusions/Significance: The number of leprosy cases in Yunnan decreased overall, although some high-NCDR regions remained.

Keywords: Leprosy, Spatial and spatiotemporal analysis, Highlighting

#0522/ ILCABS1002

ANALYSIS ON EPIDEMIC CHARACTERISTICS AND CONTROL EFFECT OF LEPROSY IN YUNNAN PROVINCE FROM 2011 TO 2020

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Background: To analyze the epidemiological characteristics and control effect of leprosy in Yunnan Province from 2011 to 2020, so as to provide basis for making the next leprosy control plan.

Methodology/Principal findings: From 2011 to 2020,the data of cases were collected from LEPMIS,the final evaluation data of Yunnan leprosy elimination plan (2011~2020) were collected from prefecture,and the indicators of epidemic characteristics and work were analyzed by SPSS.

In 2020,the prevalence rate of leprosy was 0.62/100000, a decrease of 77.21% from that of 2011 (2.72/100000).The detection rate was 0.25/100000, a decrease of 59.02% compared with that of 2011 (0.61/100000). The grade 2 disability proportion was 10.08%, much lower than that of 2011 (29.33%). The number of moderate endemic counties decreased from 11 in 2010 to 0 in 2020.The number of counties that had achieved the goal of elimination of leprosy had increased from 61 in 2010 to 116 in 2020.

Conclusions/Significance: Through the implementation of the plan for the elimination of leprosy hazards (2011~2020), the work of eliminating leprosy hazards achieved remarkable results: the prevalent rate of leprosy in Yunnan Province decreased significantly from 2011 to 2020. However, there is still a big gap from the goal of comprehensively eliminating leprosy hazards, and the work of eliminating leprosy hazards is still very arduous.

Keywords: Leprosy, Epidemic characteristics, Control effect

#0523/ ILCABS1004

ANALYSIS ON EPIDEMIC CHARACTERISTICS AND SPATIAL DISTRIBUTION OF LEPROSY IN YUNNAN PROVINCE IN 2018

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Background: To study the characteristics of epidemiological and spatial pattern and to provide scientific basis for the monitoring system of leprosy suspicious symptoms.

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Methodology/Principal findings: Date were collected from the Leprosy Management Information System in China(LEPMIS) from 2017 to 2018 in Yunnan, and uesed GIS to analyze the spatial pattern characteristics. compared with 2017, 183 leprosy cases were detected, including 174 newly detected cases, increased 9.4%. The grade 2 disability proportion were 10.3%, reduced 10%, the delay in diagnosis was shortened to 42.2%; The main mode of new case finding were dermatologic clinic, accounted for 45.9%. There was no statistic difference in the finding modes, compared with 2017. In 2018, leprosy cases in Yunnan Province showed the characteristics of sparse and concentrated distribution, the eastern area was relatively concentrated, especially Wenshan and Honghe, the western region was sparse.

Conclusions/Significance: The implementation of the monitoring system of leprosy suspicious symptoms can help early detection of leprosy and reduce the grade 2 disability proportion, control the source of infection.

Keywords: Leprosy, Monitoring system of leprosy suspicious symptoms, Epidemiology, Spatial pattern

#0524/ ILCABS1006

GRADE 2 DISABILITY AND ITS ASSOCIATED RISK FACTORS OF MIGRANT AND RESIDENT LEPROSY PATIENTS IN GUANGDONG PROVINCE, CHINA, 2001-2021

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Background: Leprosy remains a severe public health concern globally and one of the leading causes of disability. This study aimed to describe status of grade 2 disability (G2D) and its associated risk factors of migrant and resident leprosy patients in Guangdong, China.

Methods: Using data from the leprosy management information system, we described the status and risk factors of G2D among migrant and resident leprosy patients. We compared two groups with Chi-square test for difference, Joinpoint regression models to assess temporal trend, and Logistic regression to determinate risk factors.

Results: The G2D proportion of migrant, resident and total leprosy patients was 17.5%, 18.7%, and 18.4% respectively. The G2D rate of total significantly increased from 18.0% in 2001 to 25.7% in 2021 (average annual percent change: 2.5%, 95% CI 1.0-3.9). Multivariate analysis revealed that the same risk factors of G2D among migrant and resident patients including delay in diagnosis (migrants: OR=2.57, 95%CI:1.47~4.47; residents: OR=4.99, 95%CI:2.35~7.43), and nerve impairment when diagnosed (migrants: OR=9.40, 95%CI:3.91~22.57; residents: OR=21.28, 95%CI:8.47~53.48).

Conclusions: Our findings indicated that more targeted interventions are urgently needed, such as programs promote early detection, strengthen awareness among health care workers, and rehabilitation for disability patients to improve quality of life.

Keywords: Leprosy, Grade 2 disability, Risk factors

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#0525/ ILCABS1022

FIND THE NEEDLE IN HAYSTACK: EARLY DETECTION OF LEPROSY CASES IN LOW EPIDEMIC STATUS: GOOD PRACTICE FROM SHANDONG PROVINCE, CHINA

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The following determinants may contribute to early detection of leprosy cases in Shandong in the past decades. First, political commitments provide guarantees for sustainability of leprosy control. The Chinese government gives strong supports to leprosy control including policy making, budget and human resource inputting and social mobilizations. Second, a perfect system for leprosy control and an excellent professional team are premises for implementation of leprosy control measures and programme. Especially, a powerful provincial institution for leprosy prevention and control with executive force made great contribution to implementation of early detect programme. Third, multidisciplinary, specialistic supports and technical innovation at provincial level provide assistance for accurate detection and management of leprosy cases.

Keywords: Leprosy, Shandong, Elimination

#0526/ ILCABS1026

LEPROSY CONTROL STRATEGY STUDY IN LOW EPIDEMIC STATUS IN SHANDONG PROVINCE, CHINA

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Objective: In the 21st century, especially in the past ten years, leprosy has turned into a low endemic infectious disease in China. Due to the low cost-benefit ratio, the traditional methods of population-based active detection of leprosy patients are no longer suitable for the leprosy control. Thus, it is urgent to explore new control strategy.

Methods: This study introduced a leprosy surveillance strategy based on the provincial alliance of dermatology departments, which composed of general hospitals and leprosy control institutions. All the suspected cases were finally diagnosed by the Shandong Provincial Hospital for Skin Diseases (SPHSD).

Results: In 2007-2020, 3043 suspects were transferred to SPHSD and 39 leprosy cases were diagnosed. The delay period of diagnosis and the proportion of grade 2 disability (G2D) decreased by 66.23 months and 38.08%, respectively. The proportion of G2D decreased by 25.61% compared with that before the implementation of the project.

Conclusion: The implementation of the leprosy surveillance strategy based on the combination of dermatology department of general hospital and leprosy control institutions in an effective strategy for early detection of leprosy patients in the low epidemic status.

Keywords: Leprosy control strategy, Surveillance, General hospital, Leprosy control institutions

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#0527/ ILCABS1027

IMPLEMENTATION AND EFFECT ANALYSIS OF LEPROSY PREVENTION AND CONTROL STRATEGIES IN FUJIAN PROVINCE FROM 2001 TO 2020

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Objective: To explore the implementation of leprosy prevention and control strategies in Fujian Province and its effect analysis

Method: To collect the detection, treatment and management of leprosy cases in Fujian Province from 2001 to 2020, and to analyze their epidemiological and clinical characteristics

Results: 2001 to 2020 The detection and prevalence of leprosy cases in Fujian Province in 2010 showed a downward trend: the incidence rate dropped from 0.19/100,000 in 2001 to 0.02/100,000 in 2020, a decrease of 89.47%. The prevalence rate decreased from 0.60/100,000 in 2001 to 0.20/100,000 in 2020, a decrease of 66.67%; the clinical cure rate among managed cases was 85.00%.

Conclusion: Under the low prevalence of leprosy, continuing to strengthen government commitment and departmental collaboration is the organizational guarantee for leprosy prevention and control work. The policy is not loose, the funds are not reduced, and the team is not scattered, so as to ensure the sustainable development of leprosy prevention and control work. Only by mobilizing the participation of the whole society can the harm of leprosy be further eliminated.

Keywords: Leprosy Prevention, Control Effect evaluation

#0528/ ILCABS1029

ANALYSIS OF DELAYED DIAGNOSIS CASES OF LEPROSY IN HUBEI PROVINCE FROM 1990 TO 2020

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Purpose: To Master the epidemic situation of leprosy in Wuhan, and to propose prevention and control policies.

Methods: Collecting and sorting out 161 people with delayed diagnosis of new leprosy cases in Hubei Province from 1990 to 2020.Using A self-designed statistical questionnaire collect relevant information of the research objects, and then conduct statistical analysis.The top five misdiagnosed diseases were eczema in 23 cases (32.39%), rheumatism in 10 cases (14.08%), ulcer in 9 cases (12.68%), dermatitis in 9 cases (12.68%), neuritis in 9 cases (12.68%).

Keywords: Leprosy, Delayed diagnosis, Disabled

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#0529/ ILCABS1030

JOINPOINT REGRESSION ANALYSIS OF LEPROSY EPIDEMIC TRENDS IN SHENZHEN, 2010-2021

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Objective: To analyze the epidemiological characteristics of leprosy in Shenzhen from 2010-2021, to provide a scientific basis for prevention and control strategies.

Methods: Shenzhen leprosy surveillance data from 2010-2021 was collected and a trend analysis were performed by Joinpoint Regression Program.

Results: A total of 121 leprosy cases were newly detected during 2010-2021, with no relapses or children's cases, the average age of 36.5±13.3 years ranging from 15 to 75 years, including 95.0% (114/121) migrating population, 66.1%(80/121) male, 86.0% (104/121) multibacillary cases, and 14.9% (18/121) grade 2 disabilities (G2D). The early detection rate was only 39.7% (48/121). Cases were still mainly discovered from the department of dermatology (89.3%,108/121) and from unknown infectious source (71.9%,87/121). The annual new detection rate of leprosy in Shenzhen was all lower than 0.5/100,000, and the prevalence of leprosy was lower than 1.0/100,000. There was a statistically significant decreased in leprosy detection rate with an annual percent change (APC) of -12.73 from 2010 to 2021(Z=-4.8, P=0.001). Then the prevalence of leprosy rate slightly increased with an APC of 10.06 from 2010 to 2013(Z=1.1, P=0.32) but not significantly and statistically significant decreased with an APC of -8.85 from 2013 to 2021(Z=-4.7, P=0.002).

Conclusion: The prevalence rate of leprosy in Shenzhen were both significant decreased from 2010 to 2021 and detection rate remained relatively stable at a low prevalence level, but the early detection rate was low with a small proportion of G2D. The active detection strategy for leprosy cases should be improved to shorten diagnosis time and reduce the proportion of newly detected cases with G2D.

Keywords: Leprosy, Epidemiological characteristics, Joinpoint regression analysis

#0530/ ILCABS1031

ANALYSIS ON LEPROSY REACTIONS OF 466 NEW LEPROSY CASES IN GUANGXI PROVINCE

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Objective: To investigate the associated risk factors of leprosy reaction before treatment among leprosy cases newly detected in Guangxi province from 2010 to 2020.

Methods: The data were collected from Leprosy Management Information System in China and analyzed by binary logistic regression analysis.

Results: The leprosy reactions rate among the 466 leprosy cases newly detected was 17.0%. The risk factors for leprosy reactions was smear positive(with bacterial index 0~4, OR= 5.064; with bacterial index≥4, OR=5.691).

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Conclusion: The main risk factors of leprosy reactions before treatment in Guangxi province was smear positive.

Keywords: Leprosy, Leprosy reaction, Risk factor

#0531/ ILCABS1032

ANALYSIS ON INFLUENCING FACTORS OF PATIENT DELAY AMONG LEPROSY CASES NEWLY DETECTED IN GUANGXI PROVINCE

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Objective: To investigate the associated factors of patient delay among leprosy cases newly detected in Guangxi province.

Methods: The data were collected from National Leprosy Prevention Management Information System and analyzed by binary logistic regression analysis.

Results: The total delay rate was 55.4% (214/386). The risk factors for patient delay ($P<0.05$) included unmarried (OR=2.383) and visible disability(with grade 2 disability, OR=4.109; with other disability, OR=1.845) at the initial diagnosis.

Conclusion: The main risk factor of patient delay among leprosy cases newly detected in Guangxi province was unmarried. Patient delay could lead to visible disability.

Keywords: Leprosy, Patient delay, Risk factor

#0532/ ILCABS1041

EPIDEMIOLOGICAL ANALYSIS ON NEWLY REGISTERED LEPROSY CASES IN SUZHOU CITY FROM 2010 TO 2020,CHINA

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Objective: To analyze the epidemiological characteristics of new leprosy cases in Suzhou from 2010 to 2020.

Methods: Descriptive epidemiological analysis was used to analyze the data of newly registered leprosy cases in Suzhou from 2010 to 2020.

Result: From 2010 to 2020, there were 18 new cases of leprosy in Suzhou, all of which were transmitted within families, including 11 cases of non-registered residents and 2 cases of second-grade malformation. Spring and summer were the main season for case discovery, with an average delay of 34.3 months. After 2016, the delay period for diagnosis was significantly shorter than that from 2010 to 2015.

Conclusion: In recent years, the prevalence of leprosy in Suzhou has been low, and the detection method is mainly found in dermatology diagnosis and treatment in secondary and above comprehensive medical institutions. The delay period of diagnosis is long, however, the average delay in diagnosis after 2016 is significantly shorter than before, the mode of transmission is within the family. Local registered cases are still found, and the follow-up of cured survivors and their families is emphasized.

Keywords: Leprosy

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#0533/ ILCABS1042

EPIDEMIOLOGICAL CHARACTERISTICS OF LEPROSY IN ZHEJIANG PROVINCE FROM 1995 TO 2020

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Objective: To understand the epidemic trend leprosy in different stages afrer the basic elimination of leprosy in Zhejiang province, and to provide a reliable basis for the formulation of leprosy prevention and control plan in the 14th Five-year Plan.

Methods: The data of leprosy in Zhejiang province were collected in all kinds of reports of leprosy epidemic situation in all areas of zhejiang province and LEPMIS as well as related data of the plan for the elimination of leprosy hazards in Zhejiang Province, analyzed by descriptive epidemiological method.

Results: A total of 493 leprosy cases were found in Zhejiang during 1995-2020 with an average case detection rate of 0.04 per 100 000 population and the prevalence rate of 0.19 per 100 000 population. Both the detection rate and prevalence rate showed a decreasing trend. The average age was 42.27±15.99 years. Compared with 1995-2010, the average age of new cases from 2011 to 2020 was younger than before, the household registration was mainly distributed among floating population, and the cases were mainly from Yunnan, Guizhou and Sichuan provinces. LL was the most common among the new cases(33.87%). The proportion of multi-bacteria increased from 72.41% in 1995-2010 to 93.68% in 2011-2020, and the average delay period decreased from 34.1 months to 20.7 months.The ratio of early detection increased from 46.71% to 70.69%, and the proportion of newly diagnosed dermatologists increased from 80.56% to 91.95%. The completion rate of treatment was 89.7%, 335 cases were completed within the prescribe treatment period,6 cases had daspone syndrome,all of the six cases had good prognosis,no daspone synthesis was found in new cases after 2015.

Conclusion: The epidemic characteristics of leprosy in Zhejiang province showed a downward trend, and the prevention and control work achieved remarkable results.

Keywords: Zhejiang, Leprosy, Epidemiology

#0534/ ILCABS1044

DEMONSTRATING COMBINED APPROACHES FOR TACKLING NTDS THROUGH SHARED INTERVENTIONS

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Introduction: Integrated approaches are one of the goals of WHO road map for NTDs (2021-2030) to reduce morbidity, disability and the psychosocial impacts of debilitating skin NTDs. By developing combined approach strategy, we aimed to tackle the issues of Persons affected by Leprosy and Lymphatic Filariasis (LF).

Objectives: To investigate the use of combined approaches in improving health and socio-economic aspects of people affected by Leprosy and LF.

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Materials & Methods: Combined approach strategy of promoting self-care among leprosy and LF patients at a time through combined camps was implemented. The intervention was carried out for two years (2020-2022) in high endemic areas of Leprosy and LF, reaching 2876 people affected (11% leprosy, 89% LF).

Results: Collection of Evidence-based residual morbidity data resulted in taking up advocacy initiatives for the betterment of living conditions.

- The similarities in disease presentation between LF and leprosy provided evidence for a combined exploration of approaches to mitigating disease.

- Cost-effective and replicable model as comprehensive services of Leprosy and LF are provided through Integrated Prevention of Disability Strategy (Skin Care, Wound Care, Foot care, Exercises, Counseling, Health Education, Physio care, and Data Management).

- Scope for empowerment by Self Care Groups through cross-learning mechanisms in handling disability, stigma related issues among diseased populations.

- Integrating components of Disability prevention, care, and management by the inclusion of family, and communities enhanced the quality of life in terms of their health, social and economic aspects.

Conclusion: Combined approaches demonstrated improved quality of life and resource optimization, among persons affected with LF and Leprosy in handling disability prevention, care, and management.

Keywords: Integrated Prevention of Disability Strategy, Leprosy, LF, Promoting Self care

#0535/ ILCABS1052

HOUSEHOLD CONTACT TRACING--NEED OF THE HOUR

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Long period of contact with a leprosy patient makes the person susceptible to infection. Active case finding and contact tracing are mandatory. Though leprosy was eliminated from India in 2005, new cases are being identified. More cases are found among contacts than general population.

This study is based on field data in Nagappattinam and Thiruvarur districts of Tamilnadu, South India.

Subjects and Methods: Leprosy surveillance is integrated with local healthcare services in Tamilnadu. Field workers under the supervision of health authorities did contact tracing of household contacts soon after a new case is registered.

Results: Study period: 2018-2022

In total, 6 index cases were identified during 2018-2022. Among them, 3 were males and 3 were females. 4 (66.6%) of the index cases were less than 30 years of age. After contact tracing, it was revealed that 13 had contracted the disease from 6 index cases, at the ratio of 1:2. Among these contact cases, 60% were children and 33% had MB. 3 index cases were identified in one year, i.e. 2021-2022. It is alarming that 6 contact cases were also identified in this period, among which 50% were children. Even among the neighbourhood contacts, one had MB, indicating the spread of the infection.

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Discussion: The role of these contacts in spreading the disease is very high. Three household contacts had PB and nine had MB. The fact that 66% of the index cases were young is of major concern, indicating the need for further research in leprosy prevalence. This contact tracing is crucial for rapid treatment and for successful implementation of the eradication programme.

Conclusion: This points to the importance of contact tracing and the need for complete treatment for the index

Keywords: Contact Tracing--New Case Registration

#0537/ ILCABS1067

TEMPORAL-SPATIAL DISTRIBUTION CHARACTERISTICS OF LEPROSY: A NEW CHALLENGE FOR LEPROSY PREVENTION AND CONTROL IN ZHEJIANG, CHINA

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Background: After the elimination of leprosy in 1995, there were 10-30 newly detected leprosy cases every year in Zhejiang Province, and the epidemiological characteristics of the newly detected leprosy cases have changed. This brought a new challenge for leprosy prevention and control in the post elimination era.

This study was aimed to understand the temporal-spatial distribution characteristics of newly detected leprosy cases, and to provide the scientific rationales for the development of leprosy control strategy.

Materials and methods: Data on the demographic of Zhejiang Province from 2011 to 2019 and the epidemiological data on leprosy cases newly detected in Zhejiang Province from 2011 to 2019 were obtained from the China Information System for Disease Control and Prevention and LEPROSY MANAGEMENT INFORMATION SYSTEM IN CHINA (LEPMIS) respectively. Temporal-spatial distributions were described. The geographic information system software - ArcGIS 10.4 was used to draw the statistical maps, and Geoda 1.14.0 was used for local spatial autocorrelation analysis (local Getis coefficient method). Cases were classified into TT,BT,BB,BL,LL and Indeterminate using the Ridley Jopling classification and into PB and MB using the WHO classification system.

Results: A total of 167 leprosy cases were reported in Zhejiang Province during 2011-2019, (107 - male and 60 – female). The mean age at diagnosis was 37.99±14.81 years, and 94.01% of the cases were detected by examination at skin-clinics. The number of workers, MB cases, G2D cases were 81 (48.50%), 159 (94.01%), 24 (14.37%) respectively, and the rate of early detection increased from 45.16% in 2011 to 90.91% in 2019.

Keywords: Temporal-spatial distribution, Leprosy, Newly detected case

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#0538/ ILCABS1075

IMPACT OF KEY INITIATIVES ON INDICATORS UNDER NATIONAL LEPROSY ERADICATION PROGRAMME IN INDIA AND SITUATIONAL COMPARISON WITH OTHER TWO HIGH BURDEN COUNTRIES

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Introduction: India has achieved the elimination in the year 2005, there after NLEP went through various stages of planning and implementation of different strategies and innovations, those have shown positive impact on programme major indicators.

Leprosy continues to be high prevalent and 75% of the burden of new leprosy cases is from India, Indonesia and Brazil. India still reports the highest number of leprosy cases in the world. India accounts for more than half (51%) of the 127506 new cases detected globally (2020), followed by Brazil (14.1%) and Indonesia (8.7%).

Objectives: 1) To know the impact of innovation on key leprosy indicators under NLEP

2) To Analyze the leprosy trends in top three high burden countries

Methodology: Compiled data of monthly progress report of all States/UTs under NLEP and data available in World Health Organization public domain are accessed and major indicators from 2012-2020 of India, Brazil and Indonesia. analyzed Innovations under NLEP and their impact in comparison with Brazil and Indonesia.

Results & Recommendations: A three-pronged strategies were introduced in 2016–2017. This strategy includes— Leprosy Case Detection Campaign, Focused Leprosy Campaign and special plan for hard-to-reach areas, ASHA Based Surveillance for Leprosy Suspects in all districts, SLAC, Grade II Disability Epidemiological Investigation and Post Exposure Prophylaxis (SDR) etc. Innovations introduced under NLEP, India since 2016 have shown tremendous result in Grade 2 Disability percentage among new cases have reduced from 4.61% in 2016 to 2.41 in 2020.

India is being successfully preventing the G2D cases with 2.41% G2D percentage in comparison with Brazil 8.37% and Indonesia 5.62% G2D percentage among new cases in the year 2020.

The innovations under NLEP have scientifically effective and these may be implemented by other high burden countries i.e Brazil, Indonesia & others.

Keywords: Initiatives, NLEP, Grade 2 Disability

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#0539/ ILCABS1077

SITUATION ANALYSIS OF SCREENING ACTIVITIES UNDER NLEP CARRIED OUT DURING COVID-19 PANDEMIC: INSIGHT ON IMPLEMENTATION BY MAHARASHTRA

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Introduction: Despite covid-19 pandemic, some of states carried out screening activities on ground under National Leprosy Eradication Program (NLEP), ensuring all covid-19 protocols. The outcome of this activity is truly commendable.

This study presents the situation analysis of screening activities carried out by the state of Maharashtra during covid-19 pandemic.

Objectives: 1. To identify the trend of new case detection rate

2. To assess the situation of service care provision among leprosy patients by front-line health workers during pandemic

Material and Methods: Study was conducted by mixed method approach

1. Quantitative approach used to identify the trend of new case detection rate, the secondary data is utilized which was available with state and central leprosy division.

2. Qualitative approach to assess the situation analysis, telephonic interviews were held among state officials and front-line health workers.

Sampling: Maharashtra is one of the states which continued screening activities during pandemic, four high endemic districts were selected out of 35. Front-line health workers were selected by simple random sampling method for telephonic interviews.

Analysis: Quantitative data was analyzed using Excel/SPSS software which shows trend of new case detection rate. A thematic content analysis was done for analyzing the qualitative data.

Results: In Maharashtra, new cases detected in the year 2019-20, 2020-21 and 2021-22 is 16572, 12392 and 14532 respectively.

In December 2020, Active Case Finding (ACF-TB) was conducted by Government of Maharashtra while State planned to club Leprosy Case Detection Campaign (LCDC) along with ACF. A total of 4.95 cr. population were screened during this campaign. Thus, 1803 new leprosy cases were diagnosed.

Keywords: NLEP, Leprosy Screening, Case Detection

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#0540/ ILCABS1078

ELSA- KERALA EXPERIENCE: IMPORTANCE OF SELF-REPORTING IN LEPROSY IN COVID 19 PANDEMIC

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Introduction: During the early movement curtailment phases of covid 19 pandemic, ELSA (Eradication of Leprosy through Self Reporting and Awareness) a novel program for eradication of Leprosy was formulated and implemented by Department of Health and Family Welfare, Kerala. Core strategy of the program was effective utilization of Information Technology for knowledge dissemination on Leprosy in the society and there by motivating public to attend themselves to health care institutions and also enabling the service of Dermatologists through e- Sanjeevani a Tele consultation platform by Goverment of India.

Methodology: crossectional survey during Dec 2019 to April 2022.

Results: Among a total of 403505 'eSanjeevani' consultations, 2879 (0.71%, 95% CI = 0.68-0.74) were dermatology consultations in 2021-2022. Among the 5529 doctors registered in 'eSanjeevani' 170 (3.07 %, 95% CI = 2.65-3.56) were registered government and private dermatologists. A total of 10 new leprosy cases were detected in ELSA campaign and all the 10 (100%) cases were given effective treatment.

Discussion: The leprosy eradication programme was one of the most affected disease control programmes during the Covid 19 pandemic. Innovative screening and treatment programme like ELSA using the online platform had helped in effective implementation of NLEP during Covid 19 pandemic.

Conclusion: ELSA helped to overcome the obstacles posed by Covid 19 through promoting the health seeking behavior of the public and providing specialised health care via e-Sanjeevani platform.

Keywords: Teleconsultation, Programme management, Leprosy eradication, Screening of leprosy, Specialist treatment of leprosy

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CLINICAL ASPECTS

#0541/ ILCABS25

HISTOID LEPROSY DEVELOPING BORDERLINE TUBERCULOID LEPROSY IN TYPE 1 REACTION: AN UNCOMMON SHIFT OF SPECTRUM

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Introduction: Histoid Leprosy (HL) is an uncommon variant of lepromatous leprosy with characteristic clinical, immunological and bacteriological features. It is considered a stable multibacillary form and shifting to another spectrum of disease or exhibiting lepra reaction has rarely been reported. We report a de novo case of HL developing lesions of borderline tuberculoid (BT) leprosy and type 1 lepra reaction after 7 months of multi-drug therapy (MDT).

Case description: A 32-year-old female presented with multiple shiny, firm, non-tender, skin-coloured papules and nodules on her chin, ears, left arm and abdomen for 7 months. Bilateral ulnar, radial cutaneous, common peroneal and post tibial nerves were thickened. Slit skin smear showed BI of 6+. Biopsy revealed stretched epidermis with loss of rete ridges over a sheet of spindle cells in dermis. Patient was diagnosed as Histoid Leprosy and started on MDT-MB. After 7 months of treatment, patient developed erythematous, edematous plaques with pseudopodia and satellite lesions over neck, trunk and upper limbs along with previous nodular lesions. Slit skin smear was negative. Repeat biopsy revealed periappendageal and perivascular ill formed epithelioid granulomas along with perineural lympho-histiocytic infiltrate. Patient was started on Prednisolone 40 mg along with continuation of MDT-MB following which the erythema and edema subsided.

Conclusion: The association of HL with BT is interesting as they belong to diverse immunological spectrum, former being stable and latter being unstable form. The cause is unknown, but a peculiar phenomenon called 'tuberculoid contamination' was observed by Wade. Leprosy reactions in HL are also rare, majority being Type 2 reaction. This case report raises the possibility of some unknown mechanisms which link HL both to co-existence with BT lesions as well as the tendency to go in type 1 reaction rather than it being considered a polar disease.

Keywords: Histoid leprosy, Borderline tuberculoid leprosy

#0542/ ILCABS38

HISTOID LEPROSY- AN UNCOMMON CLINICAL VARIANT

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Introduction: Histoid leprosy is regarded as a rare type of lepromatous leprosy with a prevalence of around 3 % among Indian leprosy patients, usually occurring after inadequate or irregular treatment of leprosy.

Description: A 52 year old male patient came to the Out-Patient Department with complaints of painless nodular lesions over entire body since 6-8 months. They started on legs and progressed to involve the arms,

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trunk, thighs over the next 6 months. Lesions were occasionally itchy. No history of decreased/loss of sensation was reported over any part of the body. There was no history of pain in lesions or fever. There was no history of weakness of any part of the body. Patient denied anyone else in the family giving similar history. On examination, multiple skin coloured to slightly erythematous non-tender nodules of varying sizes were scattered all over the lower limbs, abdomen, trunk and upper limbs. There were no hypoaesthetic/anaesthetic patches anywhere on skin. Bilateral ulnar nerves were palpable, non-tender. Other nerves examination was unremarkable. Muscle power appeared to be within normal limits.

A provisional diagnosis of Histoid Hansen's was made, given the classical clinical presentation, and patient was evaluated by Slit-Skin smear from the ear (Showed Acid-Fast Bacilli 4+), and skin biopsy from one of the nodular skin lesions was taken (the most prominent feature being numerous spindle-shaped histiocytes arranged in interlacing bands and whorls).

Discussion: As mentioned earlier, Histoid Leprosy as a clinical variant, is an uncommon form of lepromatous leprosy. But this patient showed classical features of Histoid Hansen's and therefore a high degree of suspicion must be kept in mind when a patient presents with nodular lesions all over the body. Slit skin smear and Skin Biopsy confirmed the diagnosis and patient was referred to the regional Leprosy Centre for further management.

Keywords: Histoid, Nodules, Lepromatous, Uncommon variant

#0543/ ILCABS40

ATYPICAL ENL AS PRESENTING FEATURE IN HANSEN DISEASE

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Introduction: Hansen disease is known to present variably but with one of the three cardinal signs. In cases with no cutaneous lesion or nerve involvement we have to rely on histopathology alone for diagnosing these cases.

Description of case: 46 year old lady previously detected to have diabetes mellitus but not on oral hypoglycemic drugs presented with recurrent painful ulcers over extremities along with weight loss since last two years. She used to be given antibiotics but the ulcers were non responsive and would eventually slowly heal with scarring. The onset of new lesions was heralded by fever and initially there would be a painful red raised lesion which will quickly ulcerate. On examination patient was in poor general condition, febrile, pallor ++, tachycardia and cervical lymphadenopathy was significant. Cutaneous examination revealed exquisitely tender necrotic ulcers with haemorrhagic crust over extremities (distal>proximal). No other cutaneous lesion or nerve involvement was present. Patient was anaemic with septicemia (hb=6g%,TLC 27000per cubic mm) with uncontrolled blood sugar (332mg/dl). Slit skin smear for AFB was negative. Patient was transfused 2 units PRBCs, started on broad spectrum iv antibiotics along with insulin and potassium permangnate soaks for the ulcers. An incisional biopsy was taken from rt forearm ulcer margin which revealed AFB on Fite stain. Patient was diagnosed as having recurrent ulcerative Erythema Nodosum Leprosum (ENL) and started on monthly ROM therapy keeping in view anaemia. Thalidomide @ 100mg bd was added and gradually tapered along with Clofazimine @ 300mg od and then tapered. At 12 months patient is doing fine and only had one episode of ENL which was tackled early on.

Conclusion: This case brings to highlight the variable presentation of Hansen disease and good response with monthly ROM therapy. Therapy needs to be tapered as per individual as in this case.

Keywords: Hansen, ENL, Atypical, ROM, Ulcerative, Thalidomide

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#0544/ ILCABS43

PHENOMENON PRESENTING AS PURPURA FULMINANS -A RARE CASE REPORT

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Introduction: Lucio phenomenon is a rare type of lepra reaction seen in untreated patients with diffuse lepromatous leprosy, endemic in Mexico. Few cases have been reported from southern Asia.

Case report: A 48-year-old male, laborer, presented in an emergency medicine department with black discoloration of hands, feet, trunk, scrotum and ears associated with swelling of hands and feet and high-grade fever since a week. Lesions started as multiple hyperpigmented purpuric macules over both the hands feet, ear lobules, umbilicus thighs and buttocks.

Patient was febrile. Cutaneous examination revealed multiple purpuric patches and erosions covered with black necrotic crusts over both the hands and feet, ear lobes, scrotum, buttocks, elbows, knees and umbilicus. On further examination there was ciliary and supraciliary madarosis with diffuse infiltration of facial skin and sagging of ear lobules were also noticed. Peripheral nerve examination revealed diffuse thickening of both greater auricular, ulnar, radial cutaneous and common peroneal nerves. Sensory examination revealed glove and stocking type of anaesthesia.

His initial investigations revealed anemia, leukocytosis and raised D-dimer levels with negative RT-PCR for COVID-19. Histopathology from purpuric patch reveled epidermal atrophy, grenz zone, thrombosed blood vessels in upper dermis with foamy histiocytes throughout the dermis suggesting the diagnosis of lepromatous leprosy. Slit skin smear examination revealed Morphological index of 6+.

Patient was started on multibacillary multidrug therapy with broad spectrum intravenous antibiotics, low molecular weight heparin and oral corticosteroid therapy. Unfortunately, patient succumbed to septicemia.

Conclusion: Lucio Phenomenon is a type of reaction usually observed in untreated or inadequately treated diffuse forms of lepromatous leprosy. Early diagnosis of this condition is difficult especially in non-endemic areas. It is important for Clinicians to be aware of this condition as it can be life-threatening.

Keywords: Lucio phenomenon, Lepromatous leprosy, Purpura fulminans

#0545/ ILCABS47

TYPE 1 REACTIONS AFTER COVID 19 VACCINATION IN PATIENTS WITH HANSEN'S DISEASE

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Vaccines have previously been described to cause both type 1 and type 2 reactions in patients with Hansen's disease.

The global pandemic of Covid19 has caused disruptions on ongoing treatment of Hansen's disease in the US. In this report we describe two cases of patients with borderline lepromatous leprosy who had severe Type 1 reactions with acute neuritis shortly after receiving their Covid19 mRNA vaccines. One patient was

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previously not known to have a diagnosis of Hansen's disease and the other was on antibacterial therapy. Both had prolonged reactions that required corticosteroid therapy.

It is important to consider vaccinations and other treatments in this ongoing pandemic when evaluating unusual reactions in Hansen's disease patients.

Keywords: Type 1 Reactions, Covid 19 vaccine

#0547/ ILCABS67

AN UNUSUAL PRESENTATION OF DAPSONE SYNDROME SPARING HYPOPIGMENTED MACULES OF LEPROSY

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Introduction: Dapsone is known to cause hypersensitivity syndrome. Here, I'm presenting an unusual presentation of dapsone hypersensitivity that had generalised distribution, but spared leprosy hypopigmented macules.

Discussion: A 50yr old, male, presented with generalised red rash since 10 days.He was apparently normal, 2 months ago, then he noticed few hypopigmented macules on the trunk and consulted local doctor. He was clinically diagnosed as Hansen's disease in borderline spectrum and was started on PB-MDT. Around 5 weeks month later he developed red, itchy rash allover body, associated withfever and yellowish discoloration of eyes. On examination, generalised blanchable maculopapular exanthem with facial edema and icterus was noticed. Few hypopigmented macules over trunk and abdomen were spared by exanthem. A provisional diagnosis of Dapsone syndrome was considered.Lab values showed elevated eosinophil count, bilirubin and liver enzymes. Two biopsies taken, one from hypopigmented macule in right flank and another from maculopapular rash on back showed histopathological findings consistent with borderline lepromatous leprosy with drug rash with eosinophilia with systemic symptoms. He was advised to stop dapsone and started on oral steroids, which were tappered in 4 weeks. he improved after which MB-MDT was re-started without dapsone along with ofloxacin.

Conclusion: Anatopic response is phenomenon where occurence one pathology is modulated by another infection at the same site. Alteration of immune system, cutaneous nerve endings, local vasculature (collectively called psychoneurocutaneous immune system) due to hansen's must have caused sparing of the lesions during presentation of second pathology i.e dress syndrome. Immunocompromised districts, the localised areas where immune system was altered in immunocomptent person, were thus, spared in the present case.

Keywords: Adverse drug reaction, Dapsone hypersensitivity syndrome, Anatopic phenomenon, Immunocompromised districts

#0548/ ILCABS68

AN UNUSUAL PRESENTATION OF LEPROSY

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Leprosy is a chronic disease caused by Mycobacterium leprae, affecting peripheral nervous system, skin and certain other tissues. It is still being transmitted in India with prevalence rate of 0.57/10,000 population.

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It has been labelled as a great imitator and can present with varied clinical presentation. We here present a case of unusual presentation of leprosy. This case report indicates that atypical presentations of leprosy may be missed out and disease progression in all stages should be examined thoroughly with all needed investigations. Thus, all suspected cases, should actively be ruled out so as to prevent misdiagnosis.

Case Report: A 44yr old male, presented with multiple raised lesions over body since 3months. The lesions were itchy and involved ears, face, back, chest, bilateral hands, legs, buttocks, extensors, palms and soles. Bilateral ulnar and radiocutaneous nerves were thickened . There was reduced sensation, on bilateral hands. He had taken MB-MDT for 12months during childhood. Patient was given a single dose of Capsule Rifampicin 600mg, but the lesions exacerbated and the patient went in mild reaction. The initial skin smear turned out to be negative and biopsy also showed no significant findings of leprosy. When patient came for follow up after 10 days the lesions became little painful, deep dermal tenderness was positive and few of them developed hemorrhagic crust and rupiod scaling. Hence, the slit skin smear and biopsy were repeated again from the new lesions, and were diagnostic of lepromatous leprosy. Fite Faraco stain was strongly positive.

Discussion: Leprosy presents as a wide spectrum of clinical manifestations. This case report indicates that proper clinical examination, follow ups plays a very important role not only in looking for disease coarse and progression but also in early disease

Keywords: Leprosy, Fite Faraco, Slit skin smear, Hemorrhagic, Nodules

#0549/ ILCABS76

TRAUMA IN ERYTHEMA NODOSUM LEPROSUM IN LEPROMATOUS LEPROSY- A SYNERGISTIC CONUNDRUM.

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Introduction: Erythema nodosum leprosum, a Type2 lepra reaction is a Type3 hypersensitivity reaction presenting as erythematous, evanescent, partially blanchable, warm tender papules or nodules healing with post inflammatory hyperpigmentation and desquamation. It is exclusively seen in multibacillary leprosy(mainly LL and BL). ENL lesions may rarely become necrotic and break down to produce ulceration called as erythema nodosum necroticans. We are reporting a case of Type2 reaction during MBMDT and ENL Necroticans following trauma over left pinna in a Lepromatous Leprosy patient.

Description: A 27year old male presented with multiple skin coloured and hypopigmented ill defined to well defined papules and nodules distributed symmetrically over trunk, shoulders and arm, multiple nodules over both pinna and infiltration of ear lobes and thickening of multiple peripheral nerves. Slit skin smear done at 6 sites including both ear lobes showed a bacteriological index of 6+. The patient was diagnosed as lepromatous leprosy and started on MBMDT regimen. After one month of treatment, patient developed multiple nodular skin lesions over trunk and exrtremities, diagnosed to have ENL, started on oral steroids which was tapered in 4weeks following improvement. 4weeks later, the patient suffered a trauma over the left ear leading to severe pain and swelling. ENT opinion was perichondritis and treated with higher antibiotics and anti-inflammatory drugs. The patient developed gradually enlarging deep ulcers over the helix of the ear extending upto the ear lobule. Simultaneously he developed ulceration of nodules over the right elbow and right forearm. The patient was diagnosed as ENL Necroticans, started on high dose systemic steroids and thalidomide. The ulcers healed completely in 3weeks.

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Conclusion: In our patient with pre-existing ENL, subsequent trauma precipitated ENL Necroticans. Early management of LL patients developing ENL Necroticans will decrease morbidity associated with the disease.

Keywords: Lepromatous Leprosy, ENL, ENL Necroticans, Trauma.

#0550/ ILCABS81

CASE SERIES OF PURE NEURITIC LEPROSY IN A TERTIARY CARE CENTER IN SOUTH INDIA

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Introduction: Leprosy is one of the oldest diseases; it is endemic in India and of social concern as its complications lead to social stigma and decreased quality of life. Pure neuritic leprosy (PNL) is a well-accepted clinical entity. In the absence of skin lesions, there is a greater possibility of missing the diagnosis of leprosy, mainly due to a wide variety of pure neural manifestations that may mimic other peripheral neuropathies. Further, the PNL is more common in countries endemic to leprosy, particularly India. Hence this case series tries to describe the characteristics of PNL.

Objective: To determine the clinical presentations, the pattern of nerve involvement and deformities, electrophysiological pattern, and histopathological changes in the nerve associated with PNL.

Materials and methods: In this case series, five cases of diagnosed PNL by nerve PCR were reviewed in the light of clinical features, electrophysiological patterns, and histopathological changes.

Results: The clinical profile of five confirmed cases of PNL is detailed. Mononeuritis multiplex was the most common finding in the nerve conduction study. Two patients exhibited borderline lepromatous leprosy histological features and were positive for fite farraco stain. The most common nerve involved in all the cases where ulnar nerve with motor and sensory disturbances. Slit skin smear was negative in all patients. All the patients had ulnar nerve involvement (unilateral/bilateral), followed by radial cutaneous nerve, sural nerve, and common peroneal nerve. Three cases presented with an ulnar claw hand deformity.

Conclusion: Diagnosis of PNL depends on a detailed search for skin lesions, nerve thickening or tenderness, sensory or motor symptoms, histopathological examination, and demonstration of lepra bacilli. Nerve PCR is more sensitive in determining PNL compared to other investigative modalities.

Keywords: Pure neuritic leprosy, Nerve PCR, Ulnar nerve

#0551/ ILCABS83

HISTOID LEPROSY IN FEMALE A RARE FORM OF HANSEN'S DISEASE, CASE REPORT.

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Introduction: Leprosy also known as Hansen's disease is a chronic granulomatous infectious disease. The causative organism is a gram-positive, acid-fast bacillus(AFB) called Mycobacterium leprae which is the oldest known bacterium pathogenic to man. *M. leprae* shows marked Schwann cell tropism and is the only

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bacterium capable of invading superficial peripheral nerves. Its clinical presentation varies along a wide spectrum influenced by the hosts immune status between Tuberculoid pole(TT) and Lepromatous pole(LL). Uncommon presentations of LL pose diagnostic dilemma because of its diversity and low incidence. We present one such rare type of LL called Histoid leprosy(HL) in a female.

Description: A 41 years old woman came to our OPD reporting onset of several asymptomatic raised skin lesions on her hands, trunk and face for two years. Lesions first appeared over arms which progressively spread to involve other areas. Patient denied taking any medications before or after the onset of skin lesions. On examination, multiple skin coloured to coppery red non-tender, firm, freely mobile papules and nodules with well defined edges over both arms, forearms, chest, upper back and chin were seen. Infiltrated earlobes were noticed. Decreased sensation, nerve thickening and tenderness in both hands was detected. Suspecting LL of Histoid variant a lesional biopsy was performed which revealed diffuse infiltration of papillary and reticular dermis by histiocytes and plasma cells. Presence of Grenz zone and Fite Faraco stain showing numerous AFBs inside foamy histiocytes helped to confirm LL/HL.

Conclusion: Wade used the term "Histoid" to refer to an unusual presentation of Lepromatous leprosy with distinctive clinical and histopathological features. HL is a rare form of LL with huge clinical and epidemiological importance. HL is characterized by a high bacillary index(BI) and resistant to therapy therefore a case of HL is a significant indicator to disease transmission.

Keywords: Histoid leprosy, Bacillary index, Resistance, Transmission

#0552/ ILCABS92

AN EYE OPENER IN TO DENOVO HISTOID HANSEN'S DISEASE - A CASE REPORT

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Introduction: Histoid leprosy, an uncommon variant of lepromatous leprosy having characteristic histopathological findings and bacterial morphology. It develops either de novo or in patients with irregular or incomplete multi-drug therapy for lepromatous leprosy. We report a case of denovo Histoid Hansen's disease with the characteristic clinical, histopathological and bacteriological features.

Case Description: A 50-year-old diabetic male patient presented to our dermatology with multiple nodules all over the body associated with tingling and numbness of hands and legs for the past six months, with no prior history of treatment for leprosy.

On cutaneous examination, he had multiple well-defined dome shaped papules over normal looking skin of face, earlobes, bilateral upper limb and lower limb .There was no evidence of motor-deficit, but loss of hot and cold sensation was noted on hands and feet. Bilateral radial nerve, common peroneal nerve and ulnar nerve thickening was noted. Slit skin smear from earlobe revealed bacteriological index of 6+ and histopathology confirmed Histoid Hansen with diffuse dermal infiltrates composed of spindle shaped cells with vacuolated cytoplasm. Fite-Faraco stain showed numerous leprae bacilli. Patient responded to the conventional dose of MB-MDT.

Conclusion: Histoid leprosy was leprosy first coined by Wade in 1960. Well demarcated small papules or subcutaneous nodules appearing on normal-looking skin involving face, extremities, back, buttocks and

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bony prominences comprise the clinical hallmark of disease. Histological features are striking with the presence of circumscribed nodular lesions with spindle-shaped histiocytes and numerous acid-fast bacilli noted in active lesions (BI 6+). Tapering ends which are longer than ordinary leprosy bacilli constitute the differentiating feature.

Due to high bacillary load, Histoid Hansen's patients can form potential reservoir for infection in the community. Hence, a comprehensive surveillance for new cases in the contacts has to be done. Thus Histoid Hansen possess both diagnostic importance.

Keywords: Histoid Hansen, Spindle shaped histiocytes, Wade, Fite-faraco stain, High bacteriological index

#0553/ ILCABS98

LUCIO LEPROSY: A RARE CASE REPORT FROM WEST INDIA

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Introduction: Lucio phenomenon (LP), a rare reactional state observed in previously untreated, non-nodular form of lepromatous leprosy, Lucio leprosy is observed almost exclusively in Mexico and Central America. Cases in India are rare and we report one such case from West India.

Description of the case: A 35 year old man, working as a labourer presented to OPD with extensive raw areas and complaint of burning sensation over extremities and genital region since last 15 days. There was history of tingling and numbness, decreased tactile sensations over extremities and occasional nasal stuffiness for last 3-4 years for which he had not sought any medical intervention in the past.

Cutaneous examination revealed xerotic skin all over body. Facial skin was thin and wrinkled, with areas of superficial ulceration and necrosis. There were multiple areas of purpura, necrosis and irregularly angulated ulceration, with scab and crust formation over hands and feet. There was auto-amputation of fourth and fifth digits of right hand and necrotising fasciitis over right ankle, scrotal and penile skin. Neurological examination demonstrated glove and stocking type peripheral sensory neuropathy.

Slit skin smear examination from earlobes and eyebrows revealed bacteriological index of 5+ and histopathology revealed foamy macrophages, dermal vessels showing ischemic necrotizing vasculitis, and clumps of acid-fast bacilli periadnexally, perivascularly, and within macrophages and endothelial cells.

Clinical diagnosis of Lucio phenomenon was made based on clinical and histopathological findings and multi drug therapy regimen was started. Daily cleaning and dressing of ulcerated areas was done under antibiotic cover along with supportive therapy. Patient demonstrated satisfactory response to treatment with visible clinical recovery and onset of healing of ulcers over the next one month.

Conclusion: Lucio leprosy is often unmasked by Lucio phenomenon. High index of suspicion and prompt treatment can improve disease outcome in areas non-endemic for Lucio leprosy.

Keywords: Lucio leprosy, Lucio phenomenon, Necrotizing vasculitis

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MUCORMYCOSIS MASQUERADING AS NECROTIC ENL

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Introduction: Mucormycosis is emerging life-threatening infection caused by Mucorales whose incidence saw surges in COVID-19 pandemic. We report rare case of mucormycosis with COVID-19 in a case of lepromatous leprosy(LL), where necrotic eschars of mucor masqueraded as necrotic ENL.

Description of the case: A 38-year-old male, a labourer from Chhattisgarh, was brought to emergency ward with rapidly progressive facial swelling that started before seven days, with high-grade fever, chills and arthralgias. He was defaulter case of LL, and treated as ENL with prednisolone-40mg and MB-MDT for four days. Patient was disoriented, restless, had acidotic breath with 103.4?F temperature, 148/minute pulse, 104/70 mm-Hg blood pressure and 30/min respiratory rate. Cutaneous examination revealed marked, tender induration of right hemiface with overlying nodules, unilateral muco-purulent ocular and nasal discharge with overlying necrotic crusts, reminiscent of necrotic ENL. Stigmata of undertreated LL in form of madarosis, saddle nose, facial infiltration, clofazimine-induced pigmentation, ichthyosis, trophic ulcer, auto-resorption of digits and glove-stocking anaesthesia was evident. Investigations showed TLC:17,100/cmm,ESR:66 mm/hour,CRP:38 mg/dL,D-dimer: 880 ng/mL,IL-6:39 pg/mL. RT-PCR for COVID-19 tested positive with high viral load. SSS showed 3+ BI with 70% fragmented and granular bacilli in MI. Potassium-hydroxide from nasal scrapping revealed broad,aseptate hyphae branching at right angles. Presumptive diagnosis of rhinocerebral mucormycosis complicating COVID-19 infection with underlying LL was made. After shifting to isolation ICU, he was started on liposomal amphotericin-B despite which he continued to deteriorate and succumbed in next four hours. Posthumous tracing of biopsy reports revealed foamy macrophages and interspersed thick hyaline hyphae with inflammatory infiltrates, prominent angioinvasion and areas of infarct. FF and PAS stains were positive for lepra bacilli and mucor, respectively.

Conclusion: Necrotic lesions of ENL are not pathognomic and can mimic variety of angioinvasive dermatosis. Hence, they have to be dealt cautiously, so as not to miss deadly diagnosis like mucormycosis.

Keywords: Mucormycosis, Necrotic ENL, Leprosy and COVID-19

#0555/ ILCABS107

ARE SOLES IMMUNE AREA IN LEPROSY? - A RARE PRESENTATION OF LEPROMATOUS LEPROSY ON THE SOLES.

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Introduction: lepromatous leprosy has varied clinical manifestations ranging from patches, nodules, and diffuse infiltration of the skin. There are a few case reports of verrucous leprous lesions on the legs in lepromatous leprosy. The distribution of leprosy lesions, affecting predominantly the skin, nasal mucosa, and peripheral nerves particularly more superficial one is the evidence suggesting that *M. leprae* prefer a growth temperature of less than 37°;C. Here we report a case of lepromatous leprosy presenting on the soles which is a relatively immune zone as hyperkeratotic lesions.

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Description: A 72 yr old male weighing around 40 kg visited Dermatology OPD with asymptomatic thick skin lesions on the sole since 6 months. He was treated by a local doctor with topical steroids with no relief. On examination, there were thick hyperkeratotic plaques on bilateral soles, and few papules were present in the surrounding area. Generalized xerosis was present on the extremities. No nerve thickening or ear lobe infiltration was seen. Skin biopsy from the plaque was performed which showed hyperkeratosis, upper dermis showed Grenz zone with infiltration of foamy macrophages, histiocytes, and neutrophilic infiltrate. On Fite Faraco staining section showed BI of 6+. Silt skin smear from ear lobule showed BI of 5+. Thus, the patient was diagnosed with lepromatous leprosy and started on Rifampicin 450 mg once a month, Dapsone 50 mg once daily, Ofloxacin 400 mg daily, and Minocycline 100 mg daily. After one-month resolution of lesions was noticed.

Conclusion: We are presenting this case because of its atypical presentation in lepromatous leprosy in relatively immune zones such as soles. In absence of nerve thickening, a detailed skin examination with a skin biopsy of the lesion is essential so as not to overlook any case of leprosy.

Keywords: Lepromatous leprosy, Hyperkeratotic variant, Immune areas

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#0556/ ILCABS109

A CASE REPORT OF UNUSUAL PRESENTATION OF HANSEN'S DISEASE

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Introduction: Leprosy (Hansen's disease) is a chronic infectious disease caused by Mycobacterium leprae, affecting the peripheral nervous system, the skin and certain other tissues. It most commonly presents as a hypopigmented patch, plaque or macule. Here we present an unusual presentation of BT Hansens.

Case report: A 22-year-old male patient presented with itchy red coloured raised lesions over the right hand and right side of the waist since 2 months which did not increase in size. On examination, A large erythematous plaque with erosions measuring 7*8 cms with scaling was seen over the right forearm. Similarly, over the right iliac fossa an erythematous plaque with erosions of 2*2 cms with scaling was seen.

A diagnosis of Dermatitis artefacta was made based on clinical features and on histopathology -Focal collection of epitheloid cells with lymphocytic granulomas and few multinucleated giant cells were seen in dermis. Perineural and periadnexal lymphoplasmocytic infiltrate seen confirming Borderline Tuberculoid Hansen's.

Conclusion: There are remarkably wide variations in the way leprosy affects different persons. This case report discusses a rare clinical presentation of BT Hansens which can mimic various other diseases. Hence, histopathological examination is necessary to delineate such lesions and confirm the diagnosis.

Keywords: BT Hansens, Dermatitis artefacta, Itch, Mimic, Unusual

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#0557/ ILCABS110

ATYPICAL LESION ON FACE IN A 26 YR OLD MALE

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Introduction: Leprosy is a chronic infection caused by acid fast rod shaped bacillus Mycobacterium Leprae. Currently the prevalence rate of leprosy is 0.4 per 10,000 population in India . Of the new case detected during 2020-2021 58.1% were multibacillary .

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WHO released 'Towards zero leprosy – Global Leprosy (Hansen's disease)strategy 2021-2030 road map in April 2021 with the aim to eliminate leprosy around the world but new cases are being detected in endemic region more so atypical cases which may be missed by health care workers leading to delay in diagnosis and hence delay in initiation of treatment and increase chance of spread of infection in the community .

Description: Here I present a case of 26 year old male presented with single ill defined mildly scaly erythematous patch located on right malar prominence and lateral orbital margin for 2 months duration with associated burning sensation only . No sensory or motor deficit found . No positive family history of infection . On biopsy report shows borderline tuberculoid Hansen's disease possibly downgrading .

Conclusion: Hence a high degree of suspicion is needed to diagnose atypical and early infection to prevent spread of infection in community.

Keywords: Atypical, Hansen's, Infection

#0558/ ILCABS111

NEUROPATHIC PAIN PRACTICE AMONG THE PROFESSIONALS WORKING IN LEPROSY.

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Aims and Objective: To determine and understand the status of neuropathic pain practice among the professionals working in the field of leprosy.

Background: Neuropathic pain is one of the major impairments among the persons affected by leprosy. Many leprosy patients reports in out patients department with complaint of pain. Neuropathic pain practice among the professionals working in the field of leprosy varies considerably. Many of the professionals have knowledge regarding the neuropathic pain but they are not following any set criteria to diagnose the neuropathic pain. Further as the outcome measures for the neuroappthic pain are not well defined which leads to long treatment and in many cases treatment extends upto more than six months. The aim of this paper is to determine the status of neuropathic pain practice among professionals.

Methodology: Close ended set of questionnaires were developed regarding the neuropathic pain in leprosy. These web-based questions were mailed to various professionals working in the field of leprosy. The data was collected through the response of the questionnaires which were mailed. Responses of the professionals were categorized, and data was analyzed accordingly.

Results: 70% of the professionals were not using any set criteria or method to diagnose neuropathic pain on leprosy. 30% of professionals responded that they have some knowledge regarding the neuropathic pain in leprosy, but they were not confident to diagnose neuropathic pain in leprosy. 80% of the professionals responded that they wish to join a short term or online module course on Neuropathic pain in leprosy.

Conclusion: Neuropathic pain practice vary considerably among the professionals working in the field of leprosy.

Limitation: of study: In this study the data was collected from only 100 participants. More clear picture on neuropathic pain practice can be get through

Keywords: Leprosy, Neuropathic pain

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#0559/ ILCABS112

NEUROPATHIC PAIN IN LEPROSY: ROLE OF THERAPEUTIC EXERCISES

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Background: Neuropathic pain is one of the most important impairments associated with leprosy. As per the current practice most of the cases of the neuropathic pain in leprosy are treated with medical management. As per the literature therapeutic exercises play a major role in treatment and management of the neuropathic pain. The main objective of this paper to determine the role of therapeutic exercises in neuropathic pain in leprosy.

Aims and Objective: To determine the role of physiotherapeutic exercises in neuropathic pain in leprosy.

Methodology: Neuropathic pain is the major impairment associated with leprosy. In this study DN4 questionnaire was used to categorize pain as neuropathic pain. Once the patients is diagnosed to be suffering from neuropathic pain the patient were divided into two groups: a) Only medication group b) Medication plus therapeutic exercises group.

Both the groups were followed up every two weeks for the period the twelve weeks. VAS pain scale, DN4 Scoring were used as the outcome measures. VAS pain scale and DN4 questionnaire were recorded at the time of diagnosis and subsequently every two weeks for the period of twelve weeks. Data was analyzed and compared for both the groups at the end of twelve weeks.

Result: Patients in both the group experienced decrease in pain with decrease in DN4 score and decrease in VAS scale score. Further although both patients from both the groups experienced improvement in pain but patients in exercise group were having significant reduction and decrease in pain.

Conclusion: From the above study it can be concluded that exercises has the role to play in neuropathic pain in leprosy.

Limitation: This is a small pilot study with limited sample size. Further research is required

Keywords: Neuropathic pain, Therapeutic exercises

#0560/ ILCABS136

CHARACTERISTICS OF LEPROSY AND CO-MORBID DISEASES AMONG 141 LEPROSY CASES AGED OVER 60 YEARS TREATED AT A REFERRAL CENTRE

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Introduction: In India, increased life expectancy and declining mortality rate over the years has resulted in fast growth rate of elderly population. Furthermore, the reduced immune system associated with ageing makes the elderly population more susceptible to various infectious diseases like leprosy; TB and COVID 19. This study of leprosy in elderly as distinct group is important to increase the understanding of profile and effects of leprosy.

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Objectives: The primary objective was to identify the clinical, neurological and bacteriological characteristics of leprosy patients aged 60 years and above along with other comorbidities.

Material and methods: For purpose of the study, sociodemographic and clinical variables and associated comorbidities of 141 (12%) elderly leprosy patients aged 60 and more at time of diagnosis out of 1224 leprosy patients registered between 2008 to 2021 maintained at Referral Centre were analysed to evaluate the outcome of treatment.

Results: Out of 141 elderly leprosy patients, 82.3% were males and 61% were aged between 61 to 65 years. Majority had multibacillary (94.3%) leprosy and 49.6% were positive for AFB. 47% had lepra reactions and 48.5% developed after MDT. 74.5% cases had thickened nerves and 29.8% had Grade 2 disabilities at diagnosis. 19.1% were known with co-morbid diseases and commonest was Diabetes Mellitus (6.4%).

Limitations: We could not assess association between the variables as data on co-morbid diseases was self-reported and no validation or investigations were specifically done.

Conclusions: Our analysis shows that multibacillary leprosy was common with 50% of cases were smear positive and also a high incidence of lepra reactions making elderly leprosy cases at more risk of developing disability. These findings call for greater attention during management of elderly leprosy cases considering the co-morbidities and its effect on the quality of life.

Keywords: Elderly, Clinical, Comorbidity, Disability, Treatment

#0561/ ILCABS141

LEPROSY AND COVID-19 CO-INFECTION – EXPERIENCE IN A REFERRAL CENTRE IN MUMBAI, INDIA

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Introduction: The coronavirus disease 2019 (Covid-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged for first time as an outbreak of Pneumonia in Wuhan, China which spread globally. India reported over 43 million cases till 2022.

There is need for studying association of leprosy and Covid-19 in terms of clinical implications and management in view of new Pandemic of Covid-19, considering few reported cases of coinfection in India.

Aims and Objective: We report 23 cases (14M, 9F) of leprosy co-infected with SARs-CoV-2 at our Referral Centre, analysed for clinical, bacteriology, leprosy reaction, disabilities and comorbidities association with Covid-19.

Findings: In 23 cases, aged between 22–78 years, active leprosy were 12 (11 MB, 1 PB) and previously treated 11 (10 MB,1 PB), with 14 smear positive. Ten (3 T1R, 7 T2R) had reactions, treated with either Prednisolone, Clofazimine or Thalidomide. Nine had deformity. Nine had single or multiple comorbidities viz. Diabetes, Hypertension, Tuberculosis, Cardiac. Five had contact with Covid-19 positive patient. Overall, 17 (72%) belonged to high-risk group.

Twelve were hospitalized, 6 requiring ICU admission. Deaths were reported in 3 (13%) (1PB, 2MB). First (64/F) was active case, with Diabetes and Cardiovascular disease while her son was also case of leprosy and Covid-19. Second (78/M) was active smear positive with T1R on Prednisolone, with Diabetes and hypertension. Third (50/M) was treated smear positive without any reaction or comorbidities.

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Conclusion: Among the 23 cases, three died of which 2 cases belonged to high-risk age group with comorbidities and reaction. Few had precipitation of reactions. All remaining 20 (87%) recovered fully and not reported any deteriorating clinical events till May 2022.

Keywords: Leprosy, Covid-19, Comorbidities, Reaction, High-risk, Steriods

#0562/ ILCABS143

"EFFECTIVNESS OF CLOFAZIMINE IN TYPE 2 REACTIONS (ENL)"

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Background: Erythema Nodosum Leprosum (ENL) reaction is complication of smear-positive leprosy causing pain, disability and affecting quality of life. A large proportion (30%) suffer from ENL. Clofazimine has mild bactericidal action against *M. leprae* as well as reported to be having anti-inflammatory and suppressive effect on ENL. However, effect is only apparent when certain critical level is reached.

Objective/Methodology: The objective of study was to find evidence that whether receiving additional Clofazimine of 300mg/day tapered to 100mg/day over period of 6-12m in BL/LL will reduce risk of recurrence, disease severity of ENL and change in health-related quality of life. Patients were subjected to detailed clinical, bacteriological and neurological examinations. EESS scoring, SF-36 questionnaire was filled.

Between 2016 to 2022, 61 patients (44 Males, 17 Females) presenting with severe ENL at Referral Center were treated with additional clofazimine as above and Prednisolone as per the standard regimen.

Results: Fifty-five (73%) had BI > 3+ . Cases with 1st episode were 13 (20%), 48 (78%) had 2nd or greater episodes. ENL occured within 12m in 18 whereas 25 had between 12-24m of starting MBMDT, 18 were >24m.

Patients were followed up over period of >2 years. Clinical improvement in terms of reduction in number of ENL episodes, severity of reactions, control of pain was observed in 95% cases with improvement in quality of life and no recurrence of ENL. One of the major but reversible dose-related skin pigmentation, is common adverse effect of clofazimine. No other adverse effects or deleterious systemic effects observed.

Conclusion: Clofazimine when used in higher doses in standardized regimen administered for an optimum duration is an excellent drug, for management of recurrent and chronic ENL reactions and those with steroid dependency. The need for alternate therapy is extremely necessary for control and management of

Keywords: Leprosy, ENL, Reaction, Clofazimine, Recurrent reaction

#0563/ ILCABS160

BORDERLINE TUBERCULOID HANSEN'S PRESENTING AS TYPE4 LEPROSY ASSOCIATED IMMUNE RECONSTITUTED INFLAMMATORY SYNDROME

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Introduction: Immune reconstitution inflammatory syndrome (IRIS) is an acute, paradoxical worsening of an existing infection or the manifestation of an occult infection due to the improved cell mediated immunity after commencing highly active anti-retroviral therapy (HAART). Leprosy is a chronic, debilitating infection caused

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by Mycobacterium leprae and having a wide spectrum of varied presentations. It is now being increasingly reported as an IRIS with the increasing availability of HAART, more so in leprosy-HIV endemic geography.

Description of the case: We report a case of a 35year old female, who presented with multiple, asymptomatic, raised red lesions on her right elbow for 15days. She was diagnosed with HIV infection 4months ago with a baseline CD4 count of 90cells/µL. On examination, multiple, hypopigmented to erythematous, anaesthetic plaques, coalescing to form a well-defined large plaque, showing slight scaling, and atrophy is seen over the extensor aspect of the right forearm. Based on clinicopathological correlation and with a background of recent initiation of HAART, a final diagnosis of "Borderline Tuberculoid leprosy manifesting as IRIS" was made. She continued the ART and was started on MB-MDT. One month into MDT, she noticed that the lesion increased in size and developed pain over the lesion. She complained of tingling and numbness along the ulnar aspect of the right forearm and palm. On examination, tender, ulcero-nodular lesions with surrounding hyperpigmentation are seen over the pre-existing plaque. A diagnosis of Type1 (T1R) lepra reaction was made clinically and she was treated with oral steroids. Her CD4 count improved to 364cells/µL after 6months of HAART. Hence, the diagnosis is changed to type 4 leprosy associated IRIS.

Conclusion: Prompt diagnosis and appropriate management of the leprosy-HIV coinfection is important to improve the quality of life of the patient by preventing the onset of neural damage at the earliest possible.

Keywords: IRIS, Type 1 reaction, Leprsoy-HIV coinfection,

#0564/ ILCABS164

BIG THINGS OFTEN HAVE SMALL BEGINNINGS : A CASE SERIES OF CHILDHOOD LEPROSY IN THE POST ELIMINATION ERA.

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Although considered to be an eliminated disease since 2005, Leprosy continues to be a concern in public health. The recent data suggests an increasing trend in incidence supported by increase in number of childhood cases (7.83% of cases/million children - 2019) which is a marker of disease burden in a community.

Here, the objective is to study the varied clinical presentations of the recent cases and to highlight the importance of screening contacts and improving surveillance among the affected.

Here we report a series of cases of clinically and histopathologically diagnosed Hansen in patients of paediatric age group (18 years and below) who attended our opd in the past one year.

7 of them were male children with most of the cases in 10-14 year age group. Contact history was positive in 5 of them which included 2 siblings both of whose parents had BL Leprosy and on treatment. The most common site of presentation was exposed areas including face, legs and upper limbs. Solitary hypo pigmented patch was most frequently observed with maximum number of lesions being 7. Nerve enlargements were noted in 8 cases most frequent nerve being ulnar. 2 children had grade 1 deformity and 1 child had G2 deformity. None among the 10 cases had signs/symptoms of reactions. The most frequent type overall was borderline tuberculoid.

Leprosy in children depicts the ongoing recent transmission of the disease and the lack of efficacy of Leprosy control programmes. Post elimination relaxation in surveillance and clinical suspicion, has led to missed-diagnosis and misdiagnosis of a large number of cases in infants and children who later might end up in

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deformities, thus increasing the psychological and socio-economical burden. Dynamic change in existing strategies focusing more on breaking chain of transmission and early detection is the need of the hour

Keywords: Childhood Leprosy, Increased burden, Recent transmission, Surveillance, Control programmes

#0565/ ILCABS170

LAZARINE LEPROSY - A MIMICKER OF PYODERMA VEGETANS

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Introduction : Lazarine leprosy is one of the variant of Hansen's disease presenting with ulcerated skin lesions. It can occur in both tuberculoid and lepromatous spectrum of leprosy and the ulcerated lesions usually heal with atrophic scars.

Case report : A 52-year-old female patient presented with multiple necrotic ulcerated lesions with crusting over the upper limbs,lower limbs, hands and feet for 1 year duration. There were deformities and sensory impairement in both hands. Initially the skin lesions were mimicking pyoderma vegetans but the deformities in her hands and feet made us to think of ulcerated variant of leprosy. After a course of antibiotic therapy, the pre existing scars and skin lesions became more apparent. She had hyperpigmented infiltrated plaques, annular lesions, punched out lesions, atrophic scars and triradiate scars. Peripheral nerve examination revealed bilateral almost symmetrical nerve thickening. She had increasing ulceration of skin lesions and haemorrhagic bullous lesions in her fingers with tender nerves during type I lepra reaction. Slit skin smear examination was positive with BI 4+. Skin biopsy showed features of borderline lepromatous leprosy. Wade- Fite Faraco stain showed *M. leprae*. Our patient was diagnosed as a case of lazarine leprosy occurred in borderline lepromatous spectrum. Patient was started on MB-MDT regimen, tablet prednisolone and she is being followed up at present. Lazarine leprosy can occur in tuberculoid spectrum of the disease as a result of altered inflammatory response manifesting as ulcerating type I lepra reaction and in lepromatous form due to heavy bacillary load.

Conclusion: In our case ulceration would have occurred either due to heavy bacillary load or type I lepra reaction or both factors together responsible for ulceration in the presence malnutrition with poor immunity. We report haemorrhagic bullous lesions in fingers and triradiate scars as rare manifestations of Lazarine leprosy.

Keywords: Lazarine leprosy, Pyoderma vegetans, Triradiate scar, Protein malnutrition

#0566/ ILCABS173

PLEOMORPHIC ERYTHEMA NODOSUM LEPROSUM - A RARE CASE REPORT

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Introduction: Leprosy is a chronic infectious disease affecting the skin and peripheral nerves. The occurrence of lepra reactions complicates it. Type 1 lepra reaction is seen in the tuberculoid spectrum whereas type 2 reaction is seen in the lepromatous spectrum. Type 2 reaction presents as erythema nodosum leprosum (ENL) in the skin. ENLs classically present as tender erythematous papules, nodules, and plaques. Bullous, ulcerative, pustular, erythema multiforme-like, Sweet-syndrome like, and necrotic are the various atypical

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ENLs seen. Multiple morphologies can occur in a single patient. Herein we report a case that presented with multiple morphologies (necrotic, bullous, pustular, Sweet syndrome-like, and plaques)

Case description: A 52-year-old male presented with complaints of multiple recurrent red raised lesions over face, trunk, and upper limbs associated with fever for the past one year. The lesions were subsiding while taking oral methylprednisolone. For the past 10 days, he developed multiple erythematous plaques over face and anterior trunk. Few plaques in the anterior trunk showed pseudo vesiculation. The back showed multiple ulcero-necrotic plaques. In both forearms, large necrotic plaques measuring 15*7cm were seen. Multiple blisters were seen in the legs and pustules in the left arm. The differentials considered were erythema nodosum leprosum, Sweet syndrome, and cutaneous lymphoma. Slit skin smear from erythematous plaque revealed positive for acid-fast bacilli (6+). Biopsy of the ulcerated plaque showed foamy macrophages in the peri adnexa, and perineurium in the dermis with a morphological index of 2%. Hence a diagnosis of lepromatous leprosy with necrotic ENL was made and started on MBMDT and oral steroids. On follow-up, the lesions showed significant resolution

Conclusion: Our patient presented with necrotic ENLs along with pustular, bullous, plaques, and sweet syndrome-like lesions. Type 2 reactions presenting with pleomorphic lesions are rare. Dermatologists should be aware of various morphologies of ENLs and their mimics.

Keywords: Necrotic ENL

#0567/ ILCABS176

A CASE OF LEPROSY MIMICKING PRE SEPTAL CELLULITIS-A DIAGNOSTIC DILEMMA

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Introduction: Hansen in reaction is not always easily recognized by clinicians and is often mis-diagnosed, which is becoming a major problem in its management. Here, we report a case of a patient with Type-1 Lepra reaction who was earlier diagnosed as a case of pre-septal cellulitis but later on found to be a case of Borderline Tuberculoid Leprosy (BT).

Case description: A 36 years immunocompetent man presented with a complaint of swelling over the left frontal region since last 1 month which was insidious in onset, gradually progressive associated with a dull aching, dragging type of pain with no frank history of fever, local site trauma or insect bite to the affected site. On examination, there was a single erythematous, oedematous transversely oval-shaped swelling involving the left forehead region and two-thirds of the left upper eyelid measuring 12 × 7 cm with a ill-defined margins with a dry, rough scaly surface causing mechanical ptosis of the left eye of 6 mm reaching till the pupillary margin. On palpation, the swelling was tender, compressible, non-fluctuant and firm in consistency. Rest ocular examination was within the normal range.

Investigations & Management: Magnetic Resonance Imaging (MRI) Brain and Orbit revealed a localized soft tissue swelling. Histopathological evaluation(HPE) showed focal granuloma with peri-vascular and peri-adnexal lymphocytic infiltrates with mild papillary dermal oedema which was consistent with Borderline tuberculoid(BT) Hansen's disease.

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Patient was started on oral Prednisolone and MDT (Multi Drug Therapy) and Within a week after starting the treatment, patient showed signs of resolution with decrease in oedema, erythema and mechanical ptosis.

Conclusion: Hansen's is a common entity in India and its early diagnosis and treatment warrants favourable resolution of the disease and hence, It becomes imperative for a clinician to keep Hansen's as a differential diagnosis while dealing with peri-ocular swellings.

Keywords: Hansen's disease, Type 1 lepra reaction, Pre-septal cellulitis

#0568/ ILCABS184

CORNEAL SENSITIVITY AND ITS CORRELATION WITH ANTERIOR SEGMENT PATHOLOGY IN OCULAR LEPROSY

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Introduction: :Leprosy remains one of the causes for corneal hyposensitivity.

Objective: 1.To determine the strength of association of corneal hyposensitivity with anterior segment pathology and type of leprosy

2.To determine correlation between corneal sensitivity and blink rate

Materials and methods: A prospective study was conducted in the ophthalmology department of SIH-R&LC from January 2021 to June 2021.A total of 79 patients were included in this study.The corneal sensitivity was assessed with the Cochet-Bonnet aesthesimeter. Parameters associated with decreased corneal sensitivity were assessed.

Results: Decreased corneal sensation was associated with lagophthalmos(in RE, 30% of patients with advanced corneal hyposensitivity had lagophthalmos versus 5.2% of patients with normal sensation, $p = 0.01$ & in LE,50% of patients with advanced corneal hyposensitivity had lagophthalmos versus 6.8% of patients with normal sensation, $p = 0.03$). Decreased corneal sensation was also associated with anterior segment pathology(in RE,40% of patients with advanced corneal hyposensitivity had anterior segment pathology versus 1.8% of patients with normal sensation, $p<0.001$ & in LE, 41.7% of patients with advanced corneal hyposensitivity had anterior segment pathology versus 3.4% patients with normal corneal sensation, $p=0.073$). Association of corneal hyposensitivity with blink rate and type of leprosy was not found to be statistically significant.

Limitations: The small number of patients with decreased corneal sensation reduced the power of the study in detecting differences between groups.

Conclusion: This study showed that decreased corneal sensation was associated with the presence of lagophthalmos and other anterior segment pathology.Regular eye examination of leprosy patients should be a part of the routine clinical evaluation and health education and early warning signs should be taught to these patients.

Keywords: Leprosy, Corneal hyposensitivity, Lagophthalmos, Blink rate

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#0569/ ILCABS192

ATYPICAL CLINICAL PRESENTATIONS OF LEPROSY

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Introduction: Leprosy can present in varied forms and hence called a great mimic. The different manifestations of leprosy are known since long time - numb hypopigmented or erythematous patches, stuffiness of nose, epistaxis, pedal edema, diminished sweating or sensation have been reported, but even today newer forms of presentation continue to occur. In such cases, histopathology and slit skin smear comes to the rescue by aiding with accurate and timely diagnosis. We here present 2 cases having uncommon clinical presentations i.e., granuloma annulare like presentation of leprosy where histopathology helped in establishing the diagnosis.

Description of case:

Case1- A 36-year-old male patient presented with red colored raised lesions all over body for 20 days. On examination, multiple erythematous annular plaques with central clearing and peripheral raised margins fused to give sieve like appearance are present over face, trunk, upper and lower limbs. Temperature differentiation and touch sensation were slightly diminished over few lesions present on trunk and both upper limbs. Bilateral radial cutaneous nerves were tender and thickened.

Case 2-A 37-year-old male patient came with complaint of red raised lesions over back for 3 months and face for 1 month. He had history of itching and pain over the lesions. History swelling of left-hand present. On examination, multiple well to ill-defined erythematous plaques present over right supraorbital area, left hand, left leg, chest, back. Temperature differentiation and pain sensation were diminished. Left ulnar, radial cutaneous, common peroneal, posterior tibial; right supraorbital nerves were thickened and firm.

Histopathology confirmed the diagnosis in both cases

Conclusion: Skin and nerves are commonly affected in leprosy. In areas endemic for leprosy, it is important to keep in mind the varied presentations of leprosy. As leprosy is a great mimicker, it should be ruled out in all doubtful or suspected cases to prevent misdiagnosis.

Keywords: Atypical leprosy presentation, Granuloma annulare like presentation of leprosy, Great mimicker

#0570/ ILCABS214

LAST DIAGNOSIS HANSEN'S! LAST-MINUTE SHOCKERS!

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Introduction: In most nations, Hansen's disease is a thing of the past, but in India, not so much. This case series features two instances in which Hansen's disease was stated as the last differential diagnosis yet shockingly turned out to be first.

Objective: To educate the audience of the importance of keeping Hansen's disease and all it's clinical variants in mind always.

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Patients and Results

• **Case 1**: 25-year-old male presented with sudden multiple pus-filled lesions over the body and pain and edema of both hands x 3 days. h/o drug intake was present, diagnosis of Acute Generalised Exanthematous Pustulosis was made and patient was treated with systemic steroids. When the edema subsided, claw hand deformity and thickening of peripheral nerves was appreciated. Biopsy findings revealed foamy macrophages, Fite faraco showed acid fast bacilli and BI was 3+. The diagnosis took a shocking twist from Non-infectious pustular disorders to Lepromatous Leprosy with pustular erythema nodosum leprosum. Patient was then started on MB-MDT.

• **Case 2** : A 47 year old female presented to us with a solitary plaque on the thigh with shiny papules x 1 year. Upon examination a differential diagnosis of Sarcoidosis, Papular Mucinosis,Granuloma Annulare, B cell lymphoma and Lupus Tumidus was made. Hansen's was the last diagnosis made. Relevant tests like ACE,serum calcium and chest X ray were done to rule out sarcoidosis but revealed nothing, shockingly the biopsy revealed peri-neural tuberculoid granulomas with Langhans giant cells. A diagnosis of Boderline Tuberculoid Hansen's was made and the patient was treated.

Limitations: None

Conclusion: These cases prove that keeping Hansen's disease in mind, even as the last diagnosis in everyday clinical practice, is crucial. Suspecting Hansen's disease is important for both the patient and the clinician.

Keywords: Hansens, Reactions, Pustular ENL, Boderline Tuberculoid, Erythema Nodosum Leprosum, Clinical variants

#0571/ ILCABS224

CLINICAL SPECTRUM OF CHILDHOOD LEPROSY AND ITS PROXIMITY TO INDEX CASE

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Introduction: Childhood leprosy reported in India is 9227among 16013 new child cases reported worldwide in 2018. Childhood leprosy forms a link between natural evolution and epidemic status of the disease and there by reflect the ongoing transmission of infection in the community. If the index case is mutibacillary leprosy or mother the transmission of leprosy increases many folds. The stigma due to disability may impact the psychosocial development in child. Older children of 10-14yrs are mostly affected though there is report of cases below 10 yrs of age. All spectrum of clinical presentation are found with some variation, mostly indeterminant and borderline tuberculoid on exposed part with spontaneous regression. Few cases downgrade and reaction may increase the risk of deformity.

Objective: 1 To know the clinical spectrum of childhood leprosy.

2 Trace the household contacts.

3 Determine any predilection for bloodrelation

4 To reduce the transmission of infection to some extent by detecting hiddencases in houshold contacts.

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Material and Method: All Leprosy cases of<14yrs of age attending the OPD in SCB Medical College Cuttack and their family members are included in the study. Detail histrory, clinical examination were done. Slitskin smear and skinbiopsy if required. All data were recorded and analysed.

Limitation: School and other social contacts were not surveyed.

Conclusion: Children maypresent with all spetrum of leprosy. Transmission is higher among exposed to indeterminant and tuberculoid leprosy than non

Keywords: Childhood leprosy, Clinical type, Index case, Contact tracing community transmission, Psychosocial stigma

#0572/ ILCABS230

EPIDIDYMO-ORCHITIS- A CHALLENGING SIGN OF LEPROSY

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Introduction: Hansen's, a disease not only involves the skin and nerves but also most of the visceral organs. Epididymo-orchitis is one such complication which can lead to infertility, sexual impotence, and gynecomastia like features which might lead to devastating consequences for young individuals. It is very commonly associated with leprosy, incidence ranging from 23.6% to 68.3% but yet we encounter such cases rarely as patients are reluctant to show up or they are following up in some other speciality.

Description: We report a case of an unmarried 22 year old male, who presented to the OPD with increase in size of right scrotal sac along with right sided abdominal pain, right sided scrotal pain for few months. There was no history of genital discharge or ulcer. He also gave history of multiple reddish raised lesions over body, associated with fever for one and half year. He took leprosy MDT for 9 months and discontinued it since last 8 months. On examination: multiple nodules and post inflammatory hyperpigmentation over body, right sided scrotal swelling with tenderness, bulky epididymis with secondary hydrocele was present. There was sensory loss in glove and stocking distribution along with mild decrease in motor functions of hand. CPN were thickened bilaterally. His biopsy report was consistent with Erythema nodosum leprosum. USG suggested right sided epididymo-orchitis with hydrocele.

Conclusion: Hence, examination for epididymo-orchitis is important in leprosy patients and testicular atrophy, infertility or chronic epididymo-orchitis should make us consider the possibility of leprosy. Patients should be counselled properly and explained about the symptoms of such complications at the first visit itself and the sensitization towards the need of compliance of treatment protocols so that they can be prevented and treated early.

Keywords: Epididymo-orchitis, Leprosy complications

#0573/ ILCABS245

DUBIOUS TO DECISIVE- A CASE SERIES OF ERYTHEMA NODOSUM LEPROSUM NECROTICANS

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Introduction: Erythema nodosum leprosum (ENL) a type 2 lepra reaction present as crops of erythematous, partially blanchable, warm, tender papules or nodules. Rarely nodular lesions breakdown and ulcerate, called as erythema necroticans.

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Case Series: Here we report a series of 4 cases of ENL necroticans

1: A 35 year male known case of Retro viral disease (RVD) and LL Hansens on multi baciallary multi drug therapy (MBMDT) since 5 months presented with multiple necrotic ulcers and dark coloured painful lesions on trunk, Lower limbs and few on face since 10 days associated with fever and joint pains.

slit skin smear (SSS) bacteriological index (BI) 2+.

2 : A 45 year male presented with multiple, painful papules, pustules, and necrotic ulcers distributed all over body since 1 month. Associated with fever, joint pains and glove and stock anaesthesia. SSS BI 3+.

3: A 35 year male presented with multiple well defined necrotic ulcers with few showing crusting on arms, shoulders, back and thigh. Associated with pain and fever. SSS BI 3+ MI 2%.

4 : A 37 year male of LL hansens on MB MDT since 4 months presented with multiple painful necrotic ulcers on all limbs and trunk . Associated with fever, joint pains and glove and stock anaesthesia . SSS - BI3+

After complete cutaneous, sensory, nerve examination and laboratory investigations, diagnosis of ENL necroticans has been made.

Results: 2 are known cases of LL Hansens on MB MDT and 2 are denovo ENL necroticans type reaction.

Conclusion: Severe ENL can become vesicular or bullous and break-down and is termed erythema necroticans. ENL occurs during the treatment of LL, there are reports of patients presenting de novo as ENL.

As there are no reports of series ENL NECROTICANS it suggests the rarity, hence reported.

Keywords: REACTION, ENL, NECROTICANS, MB-MDT.

#0574/ ILCABS257

RIFAMPICIN RESISTANCE IN MYCOBACTERIUM LEPRAE IN CHILDREN: A CASE REPORT

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Introduction: Children are amongst the most vulnerable groups affected by Mycobacterium leprae due to their nascent immunity. The current proportion of children among newly detected cases is a strong indicator of continued transmission of the disease. The emergence of drug resistance further complicates the scenario, as currently, there are no defined alternate drug regimes for children. Second line drugs, such as minocycline and quinolones, are generally contra-indicated in early childhood due to their adverse effects on dental and skeletal development. We report the case of an 11 year old girl, who presented with fever and painful nodules all over the body. Clinical examination showed tender nodules with bilateral enlarged ulnar nerves. A slit-skin smear examination showed large clumps of Acid-fast bacilli on microscopy and the Bacteriological index was reported as 4.33. In the absence of any previous treatment and a high Bacteriological Index, a drug resistance study was conducted which showed resistance to Rifampicin. An alternate regime, comprising of Minocycline at 8mg/kg dose. Ofloxacin at 15mg/kg dose and Clofazimine was initiated along with low dose steroids for Type 2 reaction. There was clinical improvement and no further worsening of the reaction. Her mother had been treated 8 years ago. Contact tracing of the family members now revealed a younger sibling, aged 9 years, who had a hypopigmented, anesthetic patch on the left forearm with enlarged ulnar nerve.

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Conclusion: Drug resistance in Leprosy is on the rise and so is the transmission of drug-resistant strains in endemic populations. With emergence of Rifamipicin resistance, which is the sole bactericidal drug in the standard regime, an alternate drug regime needs to be defined, especially for children, for whom there is currently no accepted protocol.

Keywords: Drug resistance, Rifampicin, Alternate regime, Children, Bacteriological index

#0575/ ILCABS259

PREVALENCE AND RISK FACTORS FOR GRADE 2 DISABILITY AMONG NEWLY DIAGNOSED LEPROSY IN CHILDREN AND ADOLESCENTS: A FIVE YEAR RECORD-BASED ANALYSIS FROM INDIA

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Introduction: Leprosy in children is a strong indicator of disease transmission in the community and the rapidity of case detection. Grade 2 disability (G2D) in children denotes a delay in diagnosis, which could be due to delay either at the health care level or in recognition and referral by the family.

Objective: The current study determines the proportion of G2D among newly diagnosed leprosy-affected children and adolescents and identifies the associated factors.

Methods: A 5-year retrospective analysis of records of children and adolescents aged ≤18 years newly diagnosed with leprosy between April 2014 and September 2019, was carried out with special reference to G2D presentation at the time of diagnosis.

Results: Children and adolescents comprised 8.26% (327/3955) of all subjects. Among them, 58 (17.7%) had G2D at the time of diagnosis. G2D occurred more frequently among the 15–18 years age group and was significantly associated with registration delay, presence of household contact cases, having multibacillary leprosy, nerve thickening and neuritis.

Conclusions: We report a high rate of G2D among newly diagnosed leprosy cases in children and adolescents, much higher than the reported national average for adults. With such a high occurrence of G2D, the target of having zero disability in childhood cases is unlikely to be met in India in 2020. Early case detection activities with a child focused approach may reduce the delay in diagnosis, preventing leprosy-associated disability in children.

Keywords: Children, Disabilities

#0576/ ILCABS300

STUDY OF TREATMENT RESPONSES IN LEPROSY PATIENTS WITH HIGH BACTERIAL INDEX

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Study of Treatment Responses in Leprosy Patients with High Bacterial Index

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Introduction: Diagnosing leprosy in the current national program is based on clinical criteria only and many patients are initiated on Multi drug therapy(MDT) without a laboratory confirmed diagnosis. Monitoring treatment response is thus important to ensure correct diagnosis and proper disease management. A combination of clinical and laboratory criteria is used for evaluating response to treatment. However, the definition of satisfactory response to treatment in leprosy remains unclear.

Objective: The objective of this study is to describe the MDT treatment outcomes and the effect of treatment on clinical and laboratory parameters on persons affected with leprosy.

Methodology: Hospital-based retrospective cohort study was conducted by reviewing medical records of persons affected by leprosy from January 2018 to December 2019. A structured data collection form was used to review the medical records. Treatment success will be defined as the sum of patients who had completed treatment. Response to treatment will be measured by reduction of bacteriological index and frequency of type 1 and 2 reactions and neuritis.

Results: Total of 758 patients were newly diagnosed MB cases of leprosy, out of which 250 (33 %) were smear positive, and 79 had BI > 1 who completed MDT .23 Patients had Type 1 reaction, 43 type 2 reactions and 10 Neuritis. 03 patients had no complications .The results of treatment response were entered in Excel and analysed .

Limitations: This is a retrospective study and the skin responses have not been documented . This would have been a better monitoring tool where slit skin smear test is not available .

Conclusion: Simple parameters can be used as an easy tool to assess treatment responses in low-resource settings. However, this needs to be tested on a larger sample size in prospective studies.

Keywords: MDT responses, High Bacterial Index, Frequency of reactions, Duration of treatment.

#0577/ ILCABS303

SINGLE PLAQUE LESION ON RIGHT CHEEK RELAPSED AFTER COMPLETION OF PB ADULT TREATMENT

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Introduction: Leprosy is a chronic infectious disease caused by slow growing bacteria called Mycobacterium leprae, an acid fast rod shaped bacillus . The disease mainly affects the skin, peripheral nerves and eyes . The WHO classification of disease based on number of skin lesions has conspicuously ignored the number of peripheral nerve trunks involved which may not be much thickened in the early stage of disease or may be missed by lack of adequate experience and proficiency among field workers .This can have serious implications in PB patients presenting with single lesion treated with Paucibacillary (PB) MDT adult for 6 months and hence are being inadequately treated or actually being under treated and they may present subsequently with widespread /disseminated disease and pose a constant risk of transmission of infection to the close contacts and in the community .

Description: Here I present a case of 52 years old female who presented with single erythematous hypoanaesthetic plaque on right cheek, no nerve thickening and she was treated with PB adult, 1 year ago. After almost 1year later she developed induration on right cheek lesion as well as new papules and plaques on forearms, lower legs and icthyotic patches on forearm and legs, all peripheral nerves were thickened but

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nontender . Punch biopsy from right forearm lesion was done and the report shows borderline Hansen's disease downgrading and bacteriological index 2+. She was diagnosed as relapse case & She was again started with MB adult for 1 year .

Conclusion: ; Inappropriately diagnosed and under treated cases of leprosy classified by WHO criteria may relapse within years .So a proper diagnosis and treatment should be done and long term follow up may be essential to prevent the spread of disease in the community.

Keywords: Relapse, Hansen's

#0578/ ILCABS304

A CURIOUS CASE OF PAPULO-NODULOULCERATIVE DISEASE

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Introduction: leprosy and reactions have varied presentation in terms of clinical lesions and should always be kept in differential of a noduloulcerative or tender nodules.

Case discussion: A 34 years old amle came to our opd with complaints of reddish non itchy lumps over entire trunk and extremities associated with mild intermittent fever and occasioanl bleeding from the lesions.The lesions were in various stages of evolution and was numerous with the intervening skin being normal.soem of the lesions were ulcerated and all were tender on examination.The lesions were biopsied with differential of lymphomatoid papulosis,nodular PKDL,sarcoidosis and secondary syphilis but came out to be lepromatous leprosy with type 2 reaction with BI of+5.

Conclusion: Hansen's disease has numerous presentations and therefore the type and status of reaction shouyld be decided on after taking the histopathological report. lepromatous leprosy hsould be considered as differential of nodular lesions with chronic nature.

Keywords: Papulonoduloulcerative, Mild intermittent fever, Lyphomatoid papulosis

#0579/ ILCABS308

USE OF PCR AS A DIAGNOSTIC TOOL IN DIFFICULT TO DIAGNOSE CASES OF LEPROSY

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Introduction: People presenting with asymptomatic patches are difficult to diagnose; slit skin smear for Acid fast bacilli will be negative in most cases, and so of limited value.

Objectives: To study the patient profile and establish methods of early diagnosis of Leprosy using PCR.

Material & Methods: Total number of 50 suspects presenting with asymptomatic skin lesion/s and vague symptoms such as numbness, paresthesia are included in the study who presented from the period august 2020 till April 2022.Age group ranged from 1 year to 64 years . History of the complaint with duration, contact history, clinical features noted. Slit skin smear from the patch is taken and the same material is sent in a vial for

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PCR testing. PCR result and the clinical features such as loss of hair, sweating, infiltration,are documented to diagnose. Both positive and negative PCR patients are followed up clinically and the findings will be presented.

Results: Total of 50 patients participated in the study; Male -11, Female-9, Male child- 10, Female child-20 (Age below 15 is taken as child) . 33 patients presented with Face patches; 12 presented with patches elsewhere in the body; 5 presented with numbness, Paresthesia without nerve involvement. 20 patients showed skin smear negative and PCR positive results(40%).clinical signs and symptoms will be correlated with PCR positivity and the response to treatment will be presented. Duration of the disease ranged from 1 month to 4 yrs. 7 out of 20 PCR positive had the duration less than 3 months.

Conclusion: It is possible to diagnose subclinical and early Leprosy using PCR diagnostic tool; it should be made available for easy field use. Early diagnosis can lead to complete resolution of the disease. Cardinal signs should include autonomic nerve damage for early detection of Leprosy.

Keywords: PCR, Face patch, Children, Infiltration, Loss of hair

#0580/ ILCABS314

TWO CASES OF EXORBITANT CLINICOHISTOPATHOLOGICAL DISCORDANCE OF LEPROSY

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Introduction: Leprosy is an infectious disease, caused by Mycobacterium Lepra, primarily affecting the skin and the nerves. Rarely, the clinical presentation does not correspond with the histopathological classification, which is known as "discordance of leprosy". We report two cases of leprosy with extreme degree of discordance.

Description of case 1:

A 37 years old female presented with multiple (20-25), well defined, annular, hypopigmented to erythematous, plaques size ranging from 2*2 cm to 4*5 cm present over face, nape of neck, chest, back & bilateral upper limbs. All peripheral cutaneous nerves and sensations were normal over the lesions and on other parts of the body. AFB was negative. Biopsy was taken which features suggestive of Tuberculoid leprosy.

Description of case 2:

An 80 years old male presented with multiple (25-30), well defined, erythematous plaques and nodules size ranging from 1*2 cm to 4*3 cm over nose, lip, abdomen, back, buttocks, both upper and lower limbs. Bilateral ear and nose infiltration was present. Bilateral ulnar nerves were thickened, palpable and tender and bilateral superficial radial nerves were thickened, palpable and non-tender. AFB was negative. All sensations (hot, cold, fine, crude) were decreased. Histopathology was suggestive of Tuberculoid leprosy.

Conclusion: Discordance is rare in case of leprosy. The disparity between clinical and histological observations is anticipated because clinical classification gives recognition only to the gross appearances of the lesions which is due to the underlying pathological change while the parameters used for the histopathologic classification are well-defined, precise, and also take into account the immunologic response of the tissue. Thus histopathological examination is mandatory in all cases of leprosy to arrive at a definite diagnosis of leprosy and to classify the type of disease, which is very important to start proper treatment

Keywords: Leprosy, Discordant, Histopathology

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#0581/ ILCABS324

MANAGEMENT OF HAND ULCERS IN LEPROSY

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Introduction: Hand infections are debilitating and can lead to permanent disability if not promptly treated. Infections usually occur as a result of trauma that goes undetected, causing inoculation of organisms into spaces of the hand. Patients usually present with excruciating pain, of a throbbing nature, in an otherwise anesthetic hand, which indicates that it is progressive. Restriction of motion of the digits, inability to form a fist or bring the hand to a functional position as well as painful movements of the wrist along with erythema and cellulitis extending proximally warrants immediate and appropriate management.

Recommendations: Paroncyhia which develops into abscess and felon in the pulp spaces, as well as purulent flexor tenosynovitis require small incisions and drainage of the abscess. Deep fascial space infections are usually associated with osteomyelitis and require debridement of the necrotic bone and abscess drainage along with prolonged course of antibiotics. Extensive soft tissue necrosis warrants a partial or complete amputation of the digits as these will act as a nidus for infection that may spread proximally. Abscesses extending into the mid-palmar or forearm spaces can be drained through stab incisions with placement of corrugated drains across the incisions which aids in drainage of residual collection and wound irrigation. Foreign bodies are also a common presentation in the anesthetic hand, presenting as a non-healing granuloma or discharging sinus which requires appropriate imaging followed by surgical exploration and removal of foreign body. General principles such as post-operative limb elevation, longer course of antibiotics in bony involvement, early post-operative mobilization of joints and Tetanus toxoid in cases of trauma apply to all these conditions.

Conclusion: Hand ulcers in Leprosy progress rapidly and are debilitating and require prompt recognition and aggressive management for physical and functional restoration.

Keywords: Hand ulcers, Purulent flexor tenosynovitis, Abscess, Amputation

#0582/ ILCABS327

DAPSONE INDUCED AGRANULOCYTOSIS IN FOUR PATIENTS RECEIVING MULTI DRUG THERAPY (MDT) FOR LEPROSY.

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Introduction: Haematological abnormalities are the most common adverse events due to dapsone. Agranulocytosis, a potentially fatal condition, is rare in leprosy with an incidence of 0.2 – 0.4%. We report 4 cases of agranulocytosis with multi drug therapy (MDT) for leprosy occurring within 16 months.

Method and observations:

53 year female with borderline tuberculoid (BT) leprosy on MDT MB presented on 53rd day with fever and absolute neutrophil count (ANC) 0.54 X 109/L and platelet count 140 x 109/L. Haemoglobin level was

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4.8g/dl. She was started on intravenous broad spectrum antibiotics and supportive therapy but succumbed the following day.

30 year male with BT leprosy on MDT MB was admitted on day 42 with fever and ANC of 0.08 x 109/L, Hb 9.8g/dl and right middle lobe pneumonia. He was managed with broad spectrum antibiotics and granulocyte colony stimulating factor (G-CSF). He recovered after a prolonged course of illness and managed with MDT MB without dapsone.

23 year male on MDT PB for tuberculoid leprosy presented at day 24 with ANC 0.44 x 109/L. he was asymptomatic and ANC recovered after stopping dapsone and oral levofloxacin. He was managed with MDT MB without dapsone for 6 months.

52 year male with BL leprosy on MDT MB and prednisolone for ulnar neuritis presented on day 42 with fever and ANC of 0.12 x 109/L. ANC failed to rise in spite of treatment with antibiotics, G-CSF and buffy coat. He succumbed to sepsis 1 week later.

Conclusion: Occurrence of 4 cases of agranulocytosis within a short period is highly unusual. The ANC showed a rapid drop within 24 hours. Close monitoring and education of patients about symptoms is important.

Keywords: Dapsone, Agranulocytosis

#0583/ ILCABS341

CHADOX1-S/NCOV-19 VACCINE INDUCED TYPE 1 LEPRA REACTION IN CASE OF BORDERLINE LEPROMATOUS LEPROSY : A CASE REPORT

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Leprosy reactions are immunologically mediated acute inflammatory responses which occur in otherwise chronic course of leprosy. There are mainly 2 types of lepra reactions. Type 1 lepra(T1R) reaction is a delayed type hypersensitivity reaction characterized by erythematous edematous appearance of pre-existing skin lesions, appearance of new lesions and neuritis. Type 2 lepra reaction or erythema nodosum leprosum is an immune complex mediated hypersensitivity reaction characterized by erythematous tender subcutaneous nodules in addition to systemic features.

A 28 year old male, resident of Bihar was diagnosed as a case of Leprosy. He had hypo anesthetic skin lesions on face, forearms, buttocks and legs with slit skin smear showing acid fast bacilli and was started on Multibacillary Multi Drug Therapy (MBMDT) in May,2021. He did not report history suggestive of lepra reaction till 3 months after starting treatment. In August,2021 patient received first dose of Chadox1-S/Ncov-19 vaccine after which he developed erythema, edema and pain over pre-existing skin lesions in absence of any other systemic features. Again, on receiving second dose of the vaccine in November,2021 he developed similar complaints within 24 hours of vaccination. He was diagnosed as T1R and both the episodes were managed with systemic corticosteroids and MBMDT was continued. Currently he is on 10th MBMDT and has not had an episode of T1R except the two described.

The increase in cellular immunity following vaccination has been postulated as possible mechanism for trigger of T1R and not been previously reported following Chadox1-S/Ncov-19 vaccine. Health care professionals,

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especially in leprosy endemic countries, need to be aware of the possible risks of reactional states following vaccination for SARS CoV 2.

Keywords: Leprosy reactions, Chadox1-S/Ncov-19 vaccine, SARS CoV 2

#0584/ ILCABS354

LEPRA REACTIONS- 4 CASE STUDIES

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Leprosy is a chronic infectious granulomatous disease with a spectrum of varying clinical manifestations, especially in the setting of lepra reactions. We report such cases with varying clinical presentation

Case-1 28 years female with borderline lepromatous leprosy patient released from treatment one year back presented with tender reddish raised skin lesion. On examination erythematous tender papules, plaques (few with targetoid morphology) and pustules over bilateral ears, upper limbs, lower limbs and gluteal region with thickening of bilateral ulnar nerves more pronounced on the right side. Biopsy dermis showed perivascular and perineural lymphocyte, foamy histiocyte and granuloma formation, subcutis shows widening of septa chronic inflammatory infilterate and epithelioid granuloma suggested erythema nodosum leprosum.

Case-2 25 years male presented with exacerbation of pre-existing lesions with raised margins and neuritic features associated with decreased sensation with no multidrug therapy taken. On examination multiple hypo-pigmented macules with raised margins over face, bilateral upper limb, anterior and posterior trunk. Thickening and tenderness seen over bilateral ulnar nerve and right posterior tibial nerve. Biopsy showed epidermal atrophy and perineural lymphocytic infiltration.

Case-3 37 years male with borderline lepromatous leprosy patient presented with sudden appearance of reddish painful lesions over pre-existing lesions. On examination erythematous tender plaques and nodules present over anterior and posterior trunk, face, bilateral upper and lower limbs. Thickening and tenderness seen over bilateral ulnar nerve and bilateral radial cutanoues nerve.

Case-4 26 years male with borderline tuberculoid leprosy patient presented with appearance of new lesions and exacerbation of pre-existing lesion with raised margins. On examination multiple hypo-pigmented macules and large macules (saucer shaped lesion and satellite lesions) seen over anterior and posterior trunk, face, bilateral upper limbs, gluteal region and left thigh. Diagnosed as downgrading reaction to borderline lepromatous leprosy and started on treatment.

Keywords: Lepra Reactions, Down Grading Reactions, Erythema Nodosum Leprosum

#0585/ ILCABS375

A CASE OF BT HANSEN DOWNGRADING TO BL HANSEN IN TYPE 1 LEPRA REACTION PRESENTING AS ERYTHRODERMA

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Introduction: Erythroderma is a dermatological emergency presenting with generalized scaling and erythema involving more than 90% of body surface area. Many pre-existing dermatoses, underlying systemic

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conditions, drugs, malignancy, idiopathic conditions may present as erythroderma. Although leprosy can have an unpredictable course and varied clinical presentations depending upon on the bacillary load and individual immunity but erythroderma in leprosy as initial presentation is rare.

Description: A 56 years old male, farmer, resident of Raipur, Chhattisgarh (India) with no known co morbidities presented with a 3 weeks history of insidious onset gradually progressive red raised scaly lesions, initially over both legs which gradually progressed to involve his entire trunk extremities and face. It was associated with multiple thickened nerves. The lesions were not associated with itching, burning sensation, pain or loss of skin sensations.

Conclusion: Leprosy causing erythroderma is rare. The diagnosis of leprosy is primarily based on clinical, histopathological and slit skin smear reports. A high index of suspicion is mandatory in endemic regions that can have varied presentations. Leprosy induced erythroderma in this patient was of acute onset and there was a paucity of cardinal signs of leprosy .An early diagnosis was made by demonstrating acid fast bacilli in slit skin smear and a histopathology which was consistent with borderline lepromatous disease. Delay in diagnosis in cases of leprosy and lepra reactions can lead to an irreversible neural damage and deformities. Erythroderma itself in such patients can lead to increase morbidity and mortality due to its complications. Also if such cases are left untreated for long may become potential reservoir of infection in the society. Hence, the importance of this case is to highlight the requirement of high index of suspicion of leprosy in cases of even erythroderma as well.

Keywords: Erythroderma, Leprosy, Type 1 reaction

#0586/ ILCABS381

DE NOVO HISTOID LEPROSY: A CASE SERIES OF FOUR PATIENTS FROM A TERTIARY CARE CENTRE IN EASTERN INDIA.

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Introduction: Histoid leprosy is an uncommon variant of Lepromatous Leprosy which follows failure of treatment with Multi drug Therapy(MDT).It may occasionally be seen in unstable borderline and indeterminate leprosy groups.Rarely it may occur de novo without any history of previous inadequate treatment.

Objectives: 1.A fresh focus on Histoid leprosy in post global leprosy elimination era.

2.To spread awareness among the physicians about the changing patterns of disease.

Patients:

Case 1- A 35 year old male presented to the OPD with coppery red papular lesions on trunk, bilateral upper and lower limbs.On Examination there was loss of sensation on trunk and extremities.Bilateral Ulnar Nerve,Radial Nerve and Common Peroneal nerve were found to be thickened.Histopathology showed Storiform pattern with high Bacillary index of 6+ on slit skin smear(SSS).

Case 2- A 37 year old female complained of papular lesions on both the upper limbs.On examination there was loss of sensation on both upper limbs.Bilateral ulnar nerves were thickened.Histopathology showed Storiform pattern.High bacteriological index of 5+ on SSS.

Case 3- A 45 year old male came to the OPD with reddish papules on trunk, back,Upper limbs.Upon examination Bilateral Ulnar Nerve,Radial Nerve,Common Peroneal nerve were thickened.Histopathology was classical with High Bacillary Index of 5+.

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Case 4-50 year old male presented to the OPD with coppery red papules and nodules. Some lesions showed central umbilication. Examination showed loss of sensation with Ulnar and Common Peroneal Nerve thickening.SSS had a Bacteriological index of 5+.

Results: 4 Confirmed cases of de novo Histoid Leprosy with no prior history of taking MDT.

Limitations: Short sample size.

Dearth of literature on Histoid Leprosy.

Conclusion: 4 cases of de novo Histoid Hansen are reported.Physician should be aware of the rare initial presentation of Leprosy even in an era where prevalence has gone down remarkably.

Keywords: Histoid, Coppery, Bacteriological, SSS

#0587/ ILCABS386

CLINICAL PROFILE OF FATAL CASES OF PATIENTS WITH ERYTHEMA NODOSUM LEPROSUM

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Introduction: Erythema Nodosum Leprosum (ENL) occurs in leprosy patients with high bacterial load. ENL requires months to years of immunomodulatory therapy and its associated symptoms make patients physically and socially inactive.

Objective: Immunomodulatory therapy or immunologically weak state of ENL patients may make them vulnerable to other co-morbid conditions and precipitate mortality. We aimed to characterize the clinical features of patients who suffered from ENL and died due to various reasons.

Methods: Medical charts of ENL patients recorded as dead in the hospital database were retrieved and their clinical features studied.

Results: Seventeen patients who initiated ENL treatment between 1981 and 2015 were recorded as dead. Prednisolone, thalidomide and clofazimine intake were reported in 100%, 52.9% and 64.7% of the patients for durations ranging 1 to 182 weeks. Median duration between reaction medication start and death was 3 years (Range: 0.02-18.6 years). Seven (41.2%) of them were known to die due to cardiac and/or respiratory arrest. At the time of death, one each were known to have acute lymphocytic leukemia, dapsone-induced hypersensitivity, hydrophobia (no known history of dog bite), enteric fever and pulmonary disorder. Seven (41.2%) were known to have some kind of abdominal disorder (3 distended, 2 discomfort, 1 loose motion, 1 Strongyloides infection). Six (35.3%) had earlier reported Strongyloides infection with at least two-third (66.7%, n=4/6) showing repeated infections which could be due to ineffective albendazole/mebendazole treatment used at the time.

Limitation: Not all deaths in ENL patients could be traced due to lack of active reporting. Only highly comorbid cases studied here may underrepresent scientific conclusion.

Conclusion: As ENL patients require long treatment interventions, systematic study of drug side-effects and co-morbid conditions can help prevent serious outcomes.

Keywords: Leprosy, Erythema Nodosum Leprosum, Mortality, Prednisolone

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#0588/ ILCABS403

LEPROMATOUS LEPROSY WITH MIXED TYPE 1 AND TYPE 2 REACTION PRESENTING WITH CONCURRENT SARS-COV-2 INFECTION

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Introduction: Leprosy is a treatable infectious disease often complicated by sudden onset of reactional episodes. We report a case of lepromatous leprosy with mixed type 1 reaction and type 2 reaction, and SARS-CoV-2 infection.

Description of case: A 38-year-old male presented with fever, malaise, and red raised tender lesions over the pre-existing hypopigmented and hypoesthetic patches on his back, thighs, and arm for the past ten days. Examination revealed multiple erythematous raised ulcerated plaques and multiple red, evanescent, painful nodules over the extremities. He had infiltration of the face and earlobes, and uniform thickening of bilateral greater auricular and tender ulnar nerves. Slit skin smear showed an average bacteriological index of 4.6. Histopathology of the nodule from the arm revealed peri-neural and peri-adnexal dense nodular infiltrates of foamy histiocytes and neutrophils in the deep dermis. The medium-sized vessels showed vessel wall destruction and endothelial swelling. Histopathology of the infiltrated plaque on the back revealed a sub-epidermal Grenz zone, and dense infiltrates of foamy histiocytes and neutrophils extending around adnexal structures. Fite's stain was positive for acid-fast bacilli. The patient tested positive for SARS-CoV-2 during routine screening. The patient was treated conservatively with paracetamol for two weeks and had good clinical resolution of all lesions within two weeks of home isolation. Diagnosis of subpolar LL Hansen with mixed reaction. We initiated multidrug therapy for the patient.

Conclusion: While type 1 and type 2 reactions can co-occur, they are rare. Both type 1and type 2 reactions are immune-mediated diseases presenting due to cytokine elevation. SARS-CoV-2 infection activates NF-κβ and NLRP3 inflammasome with resultant uncontrolled cytokine expression. Importance of recognizing the possibility of mixed reactions is difference in therapeutic approach and prevention of disability.

Keywords: Leprosy, Reaction, SARS-CoV-2, COVID-19, ENL, Hansen

#0589/ ILCABS411

PROFILE OF DRUG RESISTANCE IN LEPROSY IN A TERTIARY CARE HOSPITAL

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Background: In the current era, we see several microorganisms developing resistance towards commonly used chemotherapeutic drugs. CurrentlY, leprosy control is mainly based on WHO recommended multidrug regimen; thus, emergence of drug resistance is a major concern. The common drugs tested for resistance in leprosy are Rifampicin, Dapsone and Ofloxacin. Resistance leads to a reduced or failed response to treatment in the form of recurrent reactions and neuritis despite regular treatment with multi drug therapy and increases the risk of transmission of drug resistant bacteria. It is important to suspect and test for resistance to provide optimum cure to patients.

Objective: In this study we describe the profile of cases that were found positive for resistance at a tertiary care centre for leprosy.

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Methodology: This is a retrospective study in which patients on multi drug regimen for Hansen's disease from December 2018 to December 2021 were described. Drug resistance was defined when there was resistance to one or more of the drugs used for leprosy.

Results: There were 63 cases (Male:Female :: 53:10) and all were MB with positive Slit skin smear. 88.7% of the patients who had drug resistance had bacterial index of 3+ or more at the time of diagnosis, while only 11.3% patients had Bacteriological index less than 3. Those who had drug resistant leprosy, developed 3 or more recurrent episodes of reaction or neuritis. While most of the patients were newly diagnosed, only 3 patients were relapse cases.

Discussion and Conslusion: Resistance is an emerging problem and clinicians should have high degree of suspicion based on clinical and bacteriological findings. This profiling will help high risk patients, who could possibly develop drug resistance to be identified early and monitored closely.

Keywords: Drug resistance

#0590/ ILCABS421

AN UNUSUAL PRESENTATION OF HANSENS WITH PHOTOSENSITIVITY MIMICKING LUPUS ERYTHEMATOSUS

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Introduction: Hansens is a contagious chronic granulomatous infectious disease affecting mainly cutaneous and nervous system. The course and clinical manifestations of disease are largely dependent on individuals immune response to mycobacterium leprae. It mimics many other diseases leading to initial misdiagnosis and delay in starting the treatment.

Case discription: we present a case of 53 year old female who presented with itching and burning sensation on exposure to sunlight, joint pains and fatigue from a duration of 1 month. On examination there was facial erythema and hypopigmented slightly scaly patches few over back, upperlimbs and lower limbs, sensations were normal over the patches, she had few blisters and erosions over plantar region of right foot. she had no other systemic complaints of palpitations, dyspnea, no bluish discouloration on exposure to cold. Bilateral ulnar nerves and radial cutaneous nerves were thickened but there was absolutely no discomfort to the patient on palpation, further motor examination revealed decreased power. In view of photosenstivity, erythema on exposure to sunlight, arthralgia and fatigue acute systemic lupus erythematosus was also considered along with hansens. patient was investigated for anti neuclear antibodies which was negative, other blood investigations were normal. Slit skin smear and skin biopsy were done which were suggestive of lepromatous leprosy and patient was kept on MB MDT and symptomatic treatment was given for photosensitivity and arthralgia.

Conclusion: Leprosy has long incubation period, though rare it may manifest with variety of autoimmune phenomena resembling systemic lupus erythematosus and rheumatoid arthritis and even serological similarities may exist between hansens and connective tissue disorders. It is usually under appreciated and clinician should consider Hansen's in differential diagnosis and have a high degree of suspicion to pinpoint the diagnosis.

Keywords: Hansens, Photosensitivity, Lupus erythematosus

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#0591/ ILCABS423

UNUSUAL MORPHOLOGICAL VARIANTS IN LEPROSY PATIENTS: SERIES OF FOUR CASES

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Introduction: Leprosy still surprises us with its varies unusual clinical presentations. Tuberculoid to lepromatous leprosy, with or without reaction, can mimic varies other dermatosis. Its important to review its varies atypical forms for prompt diagnosis and management.

Objective: To describe unusual manifestations of leprosy in four cases

Patients: Four cases of Hansen's disease showing either atypical clinical forms or lesions at atypical sites were included in this series. These patients were investigated and treated as per standard protocol for Leprosy.

Results: In this series we describe borderline tuberculoid (BT) leprosy lesion as erythematous plaque on the nose in 9 year old child mimicking Lupus vulgaris, another case of lepromatous leprosy with acute lupus erythematosus rash like presentation of pustulo-necrotic erythema nodosum leprosum (ENL) and two patients again of lepromatous leprosy having palmo-planter infiltrated plaques and papules without any features suggestive of reactions. The age of the patients ranged from 9 years to 45 years and duration of illness varied from 2 months to one year. None of them were on leprosy treatment or had past history of taking Leprosy multidrug therapy. In these patients acid fast bacilli was found on slit skin smear examination and skin biopsy was compatible with diagnosis of leprosy.

Limitations: The number of patients in this series were less. Involving larger number of patients will help us in understanding these morphological variants better.

Conclusion: Leprosy is still not so uncommon cause of morbidity in India. It's still misdiagnosed and mismanaged by many health care workers. Apart from the classical teaching regarding its clinical presentation, its important to emphasize its varies morphological variants, involvement of unusual sites and its unusual forms for its proper diagnosis and management.

Keywords: Leprosy lesions on palms, Unusual form of Leprosy, Leprosy lesions on soles, Leprosy mimicking Lupus vulgaris

#0592/ ILCABS429

LEPROUS MACROCHEILIA MASQUERADING AS CHEILITIS GRANULOMATOSA : A CASE REPORT

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Introduction: Chronic macrocheilia is swelling of one or both lips for more than 6 to 8 weeks and can be due to varied etiology. The most common cause being cheilitis granulomatosis and tuberculosis followed by leprosy . Oral involvement although not uncommon in lepromatous leprosy, it is quite rare in tuberculoid and borderline spectrum. Here we present atypical case of borderline lepromatous leprosy resenting as chronic macrocheilia.

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Case Report: A 35yr old female presented to the outpatient department of DVL with asymptomatic swelling of both upper and lower lip since 2 months. Swelling started spontaneously and reached present size. On examination, there was diffuse swelling of both upper and lower lips. Gingival edema of upper and lower teeth was noted. In addition, she also had a well defined erythematous plaque over forearm. Skin biopsy was done both from the lip and erythematous plaque. Dermis showed numerous non-caseating, well defined granulomas around nerve bundles and appendageal structures. Fite farco stain revealed occasional acid fast bacilli. Diagnosis of borderline lepromatous leprosy was made and the patient was started with multibacillary-multidrug therapy(MB-MDT). After 3months follow up the lip swelling was reduced considerably. MB-MDT was continued for the duration of 1 year.

Conclusion: Lip swelling may be an atypical presentation of leprosy. In an endemic country like India, leprosy should always be considered as a differential diagnosis of chronic macrocheilia. The ultimate diagnosis depends on correlation of clinical data with histopathological findings.

Keywords: Macrocheilia, Leprosy, Boderline

#0593/ ILCABS439

VARIED CLINICAL PRESENTATIONS OF TYPE 2 LEPRA REACTION

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Intoduction: Type 2 lepra reaction is an immune complex syndrome causing inflammation of skin, nerves and other organs. It usually manifests as erythema nodosum, hence the term Erythema nodosum lerprosum is used alternatively for type 2 lepra reaction. But rarely Type 2 reactions can have varied clinical presentations, posing a challenge to clinch a diagnosis.

Aims and Objectives: Our purpose was to review the various clinical manifestation of Type 2 reaction and confirm the diagnosis histopathologically.

Patients: We reviewed 6 patients of type 2 lepra reaction with varied clinical presentation. All these patients underwent a complete physical examination, slit skin smear and biopsy from the active lesion.

Observations and Results: 4 out of these 6 patients were biopsy proven borderline Hansen's disease who were already on treatment when they developed type 2 reaction. The other 2 patients presented directly in type 2 reaction. The different clinical presentations were: nodule, bullae, pustule, purulent ulcer, psoriasiform plaque and necrotic ulcer. Other than the clinical manifestations, these patients had fever, arthralgia and bilateral pedal edema. All these patients had slit skin smear positive and biopsy showed dense interstitial and perivascular neutrophilic infiltrate throughout the dermis with dermal edema, suggestive of type 2 reaction.

Conclusion: Type 2 lepra reaction is an inflammatory systemic reaction in which immune complexes can deposit in any organ or tissue and can have varied presentations. India still being an endemic country for leprosy, it is important for the doctors to diagnose leprosy and its reactions promptly to prevent morbidity and disability. Hence Type 2 lepra reaction should be kept as a differential even in case of unusual clinical presentations.

Keywords: Hansen's, Erythema nodosum leprosum, Perivascular

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IMMUNITY GONE WILD: COURTESY OF COVID 19 VACCINATION

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Introduction: Erythema nodosum leprosum (ENL) is an inflammatory, immune complex–mediated reaction occurring in the context of multibacillary Mycobacterium leprae infection, characterized by systemic symptoms and crops of tender skin nodules. We report 2 cases of ENL precipitated due to Covid-19 vaccination in known case of Hansen's disease.

Case report

Case 1: A 35yr old male, case of Borderline lepromatous leprosy presented with painful red lesions on bilateral extremities associated with constitutional symptoms, 2 days after1st dose of Covishield vaccine. On examination multiple tender, erythematous nodules were present on bilateral extremities.

Case 2: A 19yr old female, case of lepromatous leprosy currently on multidrug therapy (MDT), presented with painful red lesions on bilateral lower limb associated with fever and arthralgia, 6 days after 2nd dose of Covishield vaccine. First dose was uneventful. On examination, multiple tender erythematous nodules and ulcers with necrotic base were present on bilateral extremities.

Histopathology of tender nodules from both the patients showed perivascular neutrophilic infiltrate throughout the dermis, pannicultis and few foamy periappendageal histiocytes.

Both the patients were diagnosed as ENL triggered by covid-19 vaccination and were treated with oral Prednisolone, analgesics along with MDT. The lesions resolved gradually without any recurrence till date.

Conclusions: ENL is an immune complex mediated reaction against Mycobacterium leprae which manifests as systemic and cutaneous symptoms. Multiple factors like, multidrug therapy, infections, psychological stress, pregnancy, lactation and vaccination can precipitate ENL. In this era of Covid-19 pandemic all treating physicians should be aware about precipitation of Lepra reaction following Covid-19 vaccination.

Keywords: Covid-19, Mycobacterium, Erythema nodosum leprosum

#0595/ ILCABS457

LEPROMATOUS LEPROSY WITH ENL PRESENTING "DENOVO"

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Introduction: Leprosy is a chronic granulomatous infection caused by Mycobacterium leprae primarily affects the skin and peripheral nerves . Erythema nodosum leprosum (ENL) is a painful inflammatory complication of leprosy occurring in 50% of lepromatous leprosy patients.It is a significant cause of morbidity and mortality in leprosy patient.

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Description: 20 year old male hailing from Bihar who came with complaints of painful hyperpigmented plaque with generalised distribution and xerotic patches over the lower leg since 2 years . Patient also had numerous episodes of fever spikes in the last 2 years ; for which he had consulted to multiple physician with no improvement . Clinical examinations revealed multiple hypoanesthetic xerotic patches with a generalised distribution with islands of sparing of normal skin. Nerve examination revealed tender and thickened B/L ulnar and radial nerve . Differential diagnosis of lepromatous leprosy, erythema nodusum leprosum, panniculitis were made. Skin biopsy revealed epidermis with reactive cellular changes. Upper dermis showed perivascular mixed inflammatory infiltrate composed of lymphocyte and neutrophils and occasional foamy macrophage . Deep dermis showed peri adnexal dense neutrophilic infiltrate. Focal perineural abscess and epithelioid granuloma . Fite Feraco stain was positive for lepra bacilli (seen in globi) Bacteriological index- 4+ . The patient was started on tab prednisolone 40 mg in tapering dose for 6 weeks along with this MDT and symptomatic treatment was given. Patient was reviewed after 2 week and significant improvement was noticed . As the patient was permanently shifting to Bihar we advised him to do further follow up in his home town .

Conclusion: The present case highlights that even in this post elimination era also new case with reaction are detected who are yet to complete the treatment .

Conflict of interest: None

Keywords: Erythema nodosum leprosum, Reactions in leprosy, Type 2 reaction

#0596/ ILCABS458

NEWLY DETECTED LEPROMATOUS LEPROSY IN REACTION

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Introduction: Leprosy, a chronic infection caused by Mycobacterium leprae primarily affecting the skin and peripheral nerves. Leprosy has a wide clinical spectrum, with tuberculoid leprosy occurring in patients with strong immunity and lepromatous leprosy (LL) occurring in patients with weak immunity.

Erythema nodosum leprosum (ENL), also known as type II leprosy reaction, is an immune-mediated reaction occurring in LL and BL patients. ENL can occur before, during, or after antileprosy treatment, but it is most common in the first 7–12 months of treatment. ENL has a sudden onset and presents with multiple tender erythematous nodules or ulcers on the face and limbs, accompanied by fever, fatigue, neuritis, lymphadenitis, iridocyclitis, and arthritis.

Here we report a case of Lepromatous Leprosy with ENL.

Description: A 60 year old female from an endemic area Bihar, India presents with painful skin lesions all over the body since 5 years. She also gives a history of intermittent epistaxis, blurring of vision and pitting type of pedal edema since 3 years and generalised weakness, fatigue and myalgia since 5 months. On examination, there are tender skin-coloured to erythematous plaques and nodules are seen on the face, limbs, and trunk. Earlobe infiltration is present and supraciliary madarosis is noted. Bilateral ulnar, and radial cutaneous nerves are thickened uniformly but nontender. Skin biopsy showed atrophied epidermis, grenz zone. Dermis showed dense infiltration by spindle cells admixed with epithelioid histiocytes and aggregates of foamy macrophages with focal areas of vasculitic features. Histopathological features were suggestive of Lepromatous Leprosy with focal Erythema nodosum leprosum features.

Conclusion: Lepromatous leprosy has a deficient cellular immune response and high bacillary multiplication. It has epidemiological importance, as it is the most contagious clinical form of the disease.

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Early diagnosis and treatment is an essential tool to avoid disability and deformities.

Keywords: Lepromatous Leprosy, ENL

#0597/ ILCABS464

HISTOID LEPROSY WITH ERYTHEMA NODOSUM LEPROSUM COMPLICATED WITH DAPSONE INDUCED METHEMOGLOBINEMIA – A RARE PRESENTATION

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Introduction: Histoid leprosy is an unusual form of lepromatous leprosy with distinctive characteristics. It may either occur de novo or in lepromatous leprosy patients on dapsone therapy. Patients with histoid leprosy seldom present with Erythema nodosum leprosum (ENL) or the type 2 lepra reaction. Mainstay treatment for histoid leprosy remains the WHO multibacillary multidrug therapy (MB-MDT) which includes dapsone, rifampicin and clofazimine. Methemoglobinemia, although rare, is a known haematological adverse effect of dapsone.

Case report: We hereby report a case of biopsy proven histoid leprosy in a young man on MB-MDT, who later presented with recurrent ENL lesions further complicated by development of dapsone induced methemoglobinemia.

Conclusion: Histoid leprosy itself being a rare entity, ENL is rare to develop in it and is a serious condition often requiring long term therapy. Hence, a better knowledge and awareness regarding the disease and the complications encountered during its course, helps in early diagnosis and treatment of the disease which not only prevents substantial morbidity later on in life, but also, helps in breaking the transmission chain which is essential in this post-elimination era.

Keywords: Lepromatous leprosy, Histoid leprosy, Lepra reaction, Erythema nodosum leprosum, Methemoglobinemia, Dapsone

#0598/ ILCABS471

CLINICAL TRENDS OF HANSEN'S DISEASE IN POST ELIMINATION ERA – A RETROSPECTIVE 5 YEAR OBSERVATIONAL STUDY FROM TERTIARY CENTRE IN SOUTH INDIA

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Introduction: Leprosy is a chronic infectious disease with long incubation period. Despite multidrug regimen against leprosy and India eliminating hansen in 2005, incidence still remains high in many parts of country and patients presents with long term complications.

Objective: To study the clinical trends in Hansen's Disease over a period of five years (April 2015 to March 2020) in a tertiary health care centre of south India.

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Methods: This is an observational retrospective case record-based study. The duration of study was five years starting from April 2015 to March 2020. It included the data of leprosy patients who visited the OPD of Dermatology in a tertiary health care centre.

Results: A total of 1183 leprosy cases were seen in five years duration. Most of the patients were aged between 21-30 years. Age of the youngest patient was six years. Males exceeded females in this study and accounted to 69.9% of the study population. There were 1046 new cases (88.41%). Borderline Tuberculoid was the most commonest clinical spectrum (440, 37.19%). Multibacillary leprosy constituted 96.1% (1138), 33 of them were children. The year 2019/20 had highest number of cases among adults (340, 28.74%). Deformities were seen in 84 cases (7.1%), predominantly in Borderline Tuberculoid spectrum. claw hand (38 cases, 3.21%) being the most common deformity, and reported highest in year 2019/20. Sixty cases had reactions (5.07%), and Type 1 Reaction was 1.52%, less than Type 2 Reaction(3.55%).

Limitations: 1. Record based study

2.Institutional study,result may not reflect community.

Conclusion: Though India is in post elimination era of leprosy, multibacillary leprosy is still prevailing in south region, being maximum in year 2019-2020 (340, 28.74%). 33 of them were children. This shows active transmission among the people and forms an area of concern to health care facility and policy makers.

Keywords: Clinical trends, Retrospective, Post elimination, Five years

#0599/ ILCABS472

TENOSYNOVITIS IN BORDERLINE TUBERCULOID LEPROSY WITH TYPE 1 REACTION

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Introduction: Globular, cystic, tender swelling, usually on the dorsal surface of wrist joint, following an episode of Type 1 reaction in borderline disease is indicative of Tenosynovitis, an uncommon presentation in Leprosy. It may occur during the natural course of disease or during treatment as part of type 1 reaction and rarely may be the presenting complaint.

Description: A 27 year old male presented with Hypopigmented lesions over body, watering of left eye along with inability to close it and, swelling of hands and feet since one month. Past history of MDT intake for 12 months.

Hypopigmented ichthyotic anesthetic patches were present over left upper back, bilateral forearms, thighs and legs. Edema of hands with sausage shaped fingers and a cystic swelling over the dorsal aspect of the right wrist was there. He also had bilateral pedal edema with an ulcerative lesion over the medial malleolus of left foot. Peripheral nerves were thickened along with facial palsy and Bell's phenomenon right side of face. Histopathological examination showed presence of epithelioid granulomas with infiltration of lymphocytes and edema inside and around granulomas. Ultrasound of swelling revealed mild synovial thickening and effusion, involving the tendon sheaths of extensor digitorum longus and extensor carpi radialis brevis of right wrist.

Conclusion: Leprosy can affect various systems of our body. It can present with many atypical cutaneous and systemic manifestations. Tenosynovitis is an unusual presentation of Type 1 reaction in leprosy. In treated or

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'cured' cases of Hansen's Disease, a yearly examination is necessary to identify relapse or reinfection of the disease as soon as possible.

Keywords: Borderline Tuberculoid Leprosy, Type 1 Reaction, Tenosynovitis

#0600/ ILCABS481

LAZARINE LEPROSY - NON HEALING SKIN ULCERS IN A DEBILITATED PATIENT .

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Introduction: Lazarine leprosy is a rare variant of leprosy. It occurs in the lepromatous pole due to lowered resistance, malnutrition and high bacillary load.

Description of the case: 65 year old male presented with sudden onset of multiple extensive ulcers over upper and lower limbs, ears and genitalia for past 15 days. Ulcers poorly responded to broad spectrum antibiotics. Three years ago he had similar ulcers for which he underwent skin grafting. There was no hypopigmented, hypoanaesthetic patches, or glove and stocking anaesthesia. There was supra ciliary madarosis, resorption of toes on left foot, generalized thin, dry ichthyotic skin with post inflammatory depigmented lesions . On examination, ulcers were irregularly shaped, extensive, asymmetrical and varying in size involving extensor aspect of both upper and lower limbs and pinna of both ears. Large ulcers seen over scrotum and shaft of penis showed pale granulation tissue. Bilateral ulnar and radial cutaneous nerves were thickened and tender. Blood investigation revealed haemoglobin of 6 gm and low serum proteins. Slit skin smear showed bacillary index 6+. Skin biopsy showed features suggestive of Borderline lepromatous leprosy with ulceration. He was treated with MDT MB, intravenous antibiotics, saline gauze dressing, topical antibiotics and protein supplements. Two units of packed cells were transfused. The patient showed dramatic improvement with treatment .

Conclusion: Skin ulcers in leprosy occur only in a handful of conditions . Since the patient was neither on MDT MB during the onset of lesions nor had history of painful subcutaneous nodules, the probability of type 1 and type 2 reactions are ruled out. There was no spotted reddish skin lesions suggestive of lucio leprosy. So this case could be a rare presentation of leprosy - Lazarine Leprosy.

Keywords: Lazarine leprosy, Ulceration, Thickened nerves, MDT

#0601/ ILCABS487

LAZARINE LEPROSY WITH POSITIVE ANA – RARE PRESENTATION

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Introduction: Lazarine Leprosy is a rare presentation of lepra reaction.

Case Discussion: A 42 year old male patient presented with history of fever, bodyache, joint pain with raised skin lesions and ulcers from 4 days He was diagnosed as a case of Borderline Tuberculoid type of Hansen's Disease, one month back and started on MBMDT. On examination, patient was febrile having pulse-90/min,

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with edema of hand and feet. On clinical examination, erythematous, annular, nodular plaques present over right forearm,left hand, right upper back and left leg . Necrotic ulcerated tender plaques with irregular borders and necrotic slough at base present over right and left arm along with altered sensation over plaque on right forearm and left hand. Right ulnar and left cutaneous nerves are thickened and tender. Differential Diagnosis of BTH with type 1 Lepra reaction, connective tissue disorder, lupus vulgaris, cutaneous vasculitis was considered. On investigation, Hb-13g/dl,TLC-10.5*10^3/ul, RFT and LFT was within normal level, RBSL-103mg/dl, Mantoux test was negative,chest xray was normal,ANA positive,RA factor negative, ESR-36mm, slit skin smear for AFB-negative. Biopsy from plaque show multiple granuloma consisting of mainly epitheloid cells and lymphocytes along superficial vascular plexus, not infiltrating epidermis and biopsy from edge of ulcer was suggestive of vasculitis. So, final diagnosis was Borderline Tuberculoid leprosy with severe type 1 lepra reaction. i.e. Lazarine leprosy with positive ANA. Patient was treated with Inj. Dexamethasone 4 mg bid, lInj. Amoxyclav 1.2 mg Bid,Inj Ranitidine 50 mg bid, topical fusidic acid, MBMDT, other supportive treatment.

Conclusion: The aim of presentation is Lazarine Leprosy with ANA positive is rarely reported in literature.

Keywords: Lazarine Leprosy, ANA

#0602/ ILCABS488

ATYPICAL CUTANEOUS PRESENTATIONS IN HANSEN'S DISEASE

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Introduction: Well delineated patterns of cutaneous involvement along with immunological and pathological features form the basis of the Ridley-Jopling classification (1966). However, a dermatologist needs to be aware of atypical cutaneous presentations of this disease which has shown a resurgence in the last decade.

Objective: To report unusual patterns of cutaneous involvement in leprosy.

Materials and methods: We performed a retrospective review of electronic medical records from 2016 to 2022 to identify atypical clinical forms of leprosy presenting to a tertiary care level hospital.

Results: Three males and two females (n=5); mean age - 38.8 years (range – 19 to 52 years) were identified. Three patients in the lepromatous spectrum two of whom were in type 2 lepra reaction had involvement of the feet with presentations such as diffuse palmoplantar pustules and scaling resembling pustular psoriasis and necrotic haemorrhagic crusted ulcers at the tips of the toes and margins of the feet resembling vasculitic ulcers. Dull erythematous 2-3 mm sized persistent papular rash on the trunk and limbs was a manifestation of lepromatous leprosy in a HBsAg positive renal transplant recipient on immunomodulatory drugs. Infiltrated reticular hypopigmented to faint erythematous plaques were present blaschkolinearly along the extensor left upper limb in one patient whose lesions alone demonstrated a bacterial index of 2+ and a borderline lepromatous histopathology.

Limitation: Lack of molecular studies to identify the pathogenetic mechanisms leading to these unusual clinical forms.

Conclusions: Palmoplantar involvement is increasingly being observed in lepromatous leprosy with or without lepra reactions. Chronic immunomodulatory medications can give rise to atypical lesions in lepromatous leprosy. Hansen's disease can occur in an isolated blaschkolinear pattern indicating its neurotropism. Even in these atypical presentations, a thorough clinical examination and slit skin smears continue to be fundamental for diagnosis.

Keywords: Atypical, Palmoplantar, Necrotic ulcers, Papular rash, Blaschkolinear

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#0603/ ILCABS494

A STUDY OF CLINICAL PRESENTATIONS AND TYPES OF LEPROSY CASES ATTENDING DVL OPD IN TERTIARY CARE CENTER.

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Background: Leprosy continues to be significant public health problem. The clinical features of the disease are determined by the host response to *M. leprae*. Patients commonly present with skin lesions, numbness or weakness caused by peripheral nerve involvement or more rarely a painless burn or ulcer in an anaesthetic hand or foot. A leprosy reaction may be a presenting feature of the disease. In current scenario, patients still have stigma to approach doctor and take treatment.

Aim & Objective: To study various clinical presentations, types and their demographic pattern in patients of leprosy.

Materials & Methods : A retrospective & observational study was conducted from January 2018 till date to determine the various clinical presentations and type of leprosy in patients attending leprosy clinic in DVL OPD at tertiary care center.

Study tools: Records and clinical photographs

Stastistical Analysis: Percentages

Result: Total 26 were included in the study with 19 males and 7 females of whichn 3 were children. The cases had undergone clinical examination, slit skin smear and skin biopsy & accordingly classified. The most common type of leprosy seen was BTH (9),Indeterminate Hansen (5), Pure Neuritic Hansen (4) & TT, BLL, LL & in reaction 2 in each.

Limitations: As the diseased has stigma in society, patients do not come to DVL OPD, so many cases go unreported.

Conculsion: The clinical presentations & types of leprosy in patients still states that leprosy is endemic in our area, still there is stigma about it in society. The dermatologist should have high index of suspicion in a patient having hypopigmented anaesthetic lesions or deformity to diagnose a case of leprosy.

Keywords: Leprosy, Clinical presentation. Clinical types

#0604/ ILCABS495

IMPACT OF TYPE 2 LEPRA REACTION IN WOMEN ON PHYSICAL AND PSYCHOSOCIAL ASPECTS INTRODUCTION

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Introduction: Leprosy, a chronic infectious disease which has an impact on the physical, social, and psychological health of affected people that is frequently complicated by the appearance of reaction episodes especially ENLs.Women in developing countries especially in rural areas are responsible for household work

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and contribute toagriculture and husbandry. Acute physical illness like ENLs affect their work whichleads to dependence, copingissues, low self-esteem and social exclusion.Poor health seeking behavior further complicates the disease.

Method: A mixed methods study was done on women suffering with ENLs due to leprosy in a tertiary hospital fromJan2020 to Dec 2021. Quantitative datawas documented from the Hospital Management System. Qualitative data was obtained through interviews on a sample of women who were able and willing to give consent for the study.

Result: 494 females registered in a tertiary care hospital out of which, 42 had T2R within a period of 2yrs. They were analyzed on age, marital status,classification, duration of disease,ENL details, admissions and co morbidities. Lab parameters and compliance were also documented. Interviews were conducted with ten women to understand the effectof ENLs on work, pain, activities of daily living, participation at home, access to treatment, social discrimination, attitude of family members, mental health and other health issues.

Limitation: Comparing the results with a similar cohort of men would have enhanced our understanding .

Conclusion: The findings will provide a better understanding of what women with Hansen disease and ENLs face and go through. Women are vulnerable in a developing country especially in rural area and having ENLs make their lives more painful and at riskof furthercomplications.A comprehensive approachis needed to improve management of ENLs in women.

Keywords: Women, Type2 Reaction, Classification

#0605/ ILCABS496

LAZARINE LEPROSY MIMICKING TYPE 2 LEPRA REACTION

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Introduction: Lazarine leprosy or ulcerating type 1 reaction, can occur in both tuberculoid pole and in lepromatous pole of leprosy because of high inflammation and high bacillary load, respectively. We hereby report a case of lazarine leprosy mimicking type 2 lepra-reaction.

Case Report

A 24-year-old male presented with recurrent episodes of fever, multiple ulceronecrotic lesions over the trunk and extremities for the last 9 months along with pain in both ankle joints. There was no history of anesthetic patches/plaques, ocular complaints or testicular pain.

He had bilateral pedal edema, swelling of hands, inguinal lymphadenopathy, infiltration of the right ear lobe, multiple tender indurated plaques and punched-out ulcers over the trunk and extremities.

He had symmetrically enlarged, non-tender ulnar and common-peroneal-nerves, hypoaesthesia in the distribution of lateral-popliteal-nerves bilaterally and positive Card-test, Froment-sign and Pen-test bilaterally.

Our initial differential diagnosis was BL-leprosy with erythema necroticans, lucio phenomenon or vasculitis with sepsis. There were no acid-fast bacilli (AFB) in split-skin smears or histopathology, no evidence of vasculitis, endarteritis and thrombosis, negative ANA, normal complement levels and sterile blood and

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urine cultures. Therefore, we made a diagnosis of BT downgrading to BB leprosy with lazarine leprosy. The diagnosis of BB leprosy was made based on ill-defined epitheloid granuloma, in the absence of AFB. The presence of multiple necrotic ulcers, fever and acute inflammatory infiltrate favoured a diagnosis of lazarine leprosy.

Since he had received MBMDT for 1 year elsewhere, we started treatment for leprosy reaction with oral prednisolone 30mg (0.6mg/kg) daily and tablet clofazimine 100mg thrice daily. He received intravenous-linezolid for MRSA in pus-culture, and iron supplements for microcytic-anemia. Following this, he had no new lesions and old lesions began to heal.

Conclusion: The report highlights the importance of detailed evaluation of multiple cutaneous ulcers in patients of leprosy, which can be multifactorial.

Keywords: Lazarine leprosy, BB leprosy, Cutaneous ulcers

#0606/ ILCABS498

ULCERATED METASTATIC SQUAMOUS CELL CARCINOMA OF THE FOOT IN LEPROSY

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Introduction: Malignant transformation of chronic, long-standing, neglected ulcers of the lower limb in Leprosy occurs in about one-tenth of all cases with regional lymph node metastases to inguinal lymph nodes occuring in a very small proportion, causing increased morbidity and mortality.

We report the case of a 65 years old female patient, who was treated for Leprosy 23 years ago. She developed an ulcer on the left foot 10 years ago which was progressive and non-healing. The ulcer started bleeding with foul-smelling discharge for over 6 months. The patient was brought in a debilitated condition. On examination, there was a 12x8cm ulcer involving the entire forefoot with everted, hyperkeratotic edges and unhealthy granulation on the floor which was bleeding with purulent discharge. An ulcerated node measuring 8x5cm was seen in the left inguinal region which was bleeding. She had bilateral palmar and plantar anesthesia with enlarged ulnar nerves and median nerve weakness. She was resuscitated with multiple blood transfusions, followed by below knee amputation of the left lower limb with posterior flap and superficial inguinal lymphadenectomy with primary closure. The biopsy was reported as well-differentiated squamous cell carcinoma. Post-operatively, she underwent 3 cycles of adjuvant chemotherapy with oral capecitabine at a dose of 500mg/m2. The stump and inguinal wounds fully healed wihtout any complications and she did not have any recurrence at 20 months follow-up. She was rehabilitated with below-knee prosthesis and was ambulant. Unfortunately, the patient died 3 months after her last follow-up due to Covid.

Conclusion: Neoplastic changes with metastasis in lower limb ulcers in Leprosy is rare, but lethal. It requires early recognition and prompt management due to its aggressive nature.

Keywords: Malignant ulcer, Squamous cell carcinoma, Capecitabine, Amputation, Inguinal lymphadenectomy

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#0607/ ILCABS503

SUBPOLAR LEPROMATOUS LEPROSY ASSOCIATED WITH DENOVO HISTOID LEPROSY: A RARE ENIGMA

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Introduction: Histoid leprosy (HL) is an expression of multibacillary lepromatous leprosy (LL) characterized by unique clinical and histopathological features. LL which occurs as a result of downgrading is called subpolar lepromatous leprosy (LLs). This case report intends to highlight that very rarely histoid nodules can represent the first sign of LLs.

Description: A 29-year-old female presented with asymptomatic skin lesions on the body along with multiple episodes of epistaxis since last 6 months. There was no history of slippage of footwear, glove and stocking anaesthesia and hoarseness of voice. Patient denied history of intake of anti-leprosy treatment in the past or family. Cutaneous examination revealed numerous infiltrated nodules on face and ear lobes along with multiple, dome shaped, shiny papulonodular lesions on trunk, buttocks and extremities. The lesions were non tender, firm and had intact sensations. Right thigh had three variable sized annular plaques with punched out inner border and ill-defined sloping outer border. Right ulnar and left lateral popliteal nerves were thickened (grade 2) but non tender. Slit skin smears taken from papulonodular lesion and ear lobes was grade 6+ positive for lepra bacilli that were long and slender. Biopsy from the annular plaque (right thigh) showed mixed cellularity granuloma with predominance of epitheloid cells. Papular lesion on biopsy revealed spindle shaped macrophages and histiocytes arranged in interlacing bundles. Based on above findings, diagnosis of LLs (downgrading from borderline spectrum) with HL was made and patient was started on leprosy multibacillary (MB) multidrug therapy.

Conclusion: The coexistence of lesions HL and LLs in a patient who has earlier not taken any antileprosy treatment, is a rarity in itself. In such cases, histoid lesions are transient because initially histoid bacilli and dapsone susceptible Mycobacterium leprae thrive hand in hand, but later, dapsone susceptible bacilli proliferate more than histoid bacilli.

Keywords: Histoid leprosy, Subpolar lepromatous leprosy, Denovo

#0608/ ILCABS516

A CLINICO-EPIDEMIOLOGICAL STUDY OF CHILDHOOD HANSENS IN POST ELIMINATION ERA

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Introduction: Leprosy is a chronic infectious condition known to occur at all ages ranging from early infancy to old age. Given their nascent immunity and possible intra-familial contact, children become the most vulnerable group to infection. Epidemiologically childhood leprosy is an indicator of ongoing transmission in the community and allows identification of index case.

Objectives: To study the clinico-epidemiological aspects of Hansen's disease in children in post elimination era.

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Patients/ Materials & Methods: Prospective study of childhood leprosy cases attending a tertiary care centre from January 2019 to December 2021. Inclusion criteria was all children between 0 to 14 years of age diagnosed with leprosy.

Results: Out of total 520 Hansen's cases that attended during study period, 26 were below 14 years (n=26, 5%). Most of the patients were in the age group of 10-14 years (88.5%). Male to female ratio was 3:2. Borderline tuberculoid was the commonest type (n=16; 61.5%), followed by lepromatous leprosy (n= 4; 15.4%). Among 26 cases, 57.7%(15) were PB and 42.3%(11) were MB. 4 cases had family contact history. Majority showed no reactions (n=22). 7 showed smear positivity. In 53.8% cases skin biopsies showed BT picture, while 19.2% showed LL picture.

Limitations: Single centre, tertiary hospital based study reflecting only tip of the iceberg.

Less number of cases during COVID-19 pandemic.

Conclusion: Though WHO declared leprosy was eliminated in 2005, proportion of childhood leprosy cases continue to be high. With the chronic nature of Hansen's disease, attached social stigma and associated deformities, the affected child faces physical, social and mental developmental blocks. Hypo-pigmented patch being the most common presentation is easily misdiagnosed especially when present on the face. Hence a high index of suspicion and thorough clinical evaluation helps in accurate diagnosis and management.

Keywords: Childhood hansens, Post elimination era, Clinico-epidemiological, Prevalence

#0609/ ILCABS529

ENL REACTION MASQUERADING AS KIKUCHI DISEASE

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Introduction: Erythema nodosum leprosum (ENL) presents as painful, tender erythematous nodules typically, but it may present as pustules, ulcerated plaques etc.We present a case, presented and diagnosed as Kikuchi disease but finally found out to be ENL.

Case Report: A 52-Yr-old male presented with fever,fatigue, generalized lymphadenopathy, painful pustules on both thighs for 2 weeks.He was seen by a general surgeon and lymphnode biopsy was done, which has shown histiocytic granuloma and reported as Kikuchi disease. He was treated with antibiotics with out much relief.On examination, Multiple painful, tender pustules, few tiny necrotic ulcers over both thighs.There were no hypopigmented or erythematous patches. Ear lobe infiltration was present on both sides. Hypoesthesia over hand and feet was present. Both ulnar and lateral popliteal nerves were thickened and tender. Smear taken from the pustules and stained with the Ziehl Neelsen stain, showed multiple globi with a bacillary index of 6+. Biopsy taken from the pustule showed foamy histiocytic granuloma in the dermis,extending into subcutaneous tissue. Lot of neutrophils were seen perivascularly in the dermis, suggestive of ENL.Modified Ziehel_Neelsen stain on histology showed multiple acid fast bacilli.

Discussion: Kikuchi disease (KD), also known as histiocytic necrotizing lymphadenitis, is a benign and self-limiting disease that mainly affects young women.It presents with localized lymphadenopathy, fever,and leukopenia in half of the cases.Our patient also had fever, weakness with generalised lymphadenopathy and biopsy showed histiocytes.However, a complete clinical examination revealed glove and stock hypoesthesia, thickened and tender ulnar and lateral popliteal nerves with ear lobe infiltration.Biopsy confirmed lepromatous leprosy with ENL. Unusual presentations of ENL,as in this case are uncommon.

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Conclusion: Thorough clinical examination and smear examination are very important along with proper histopathological examination in diagnosing leprosy, especially in atypical presentations. ?

Keywords: ENL reaction masquerading as Kikuchi disease

#0610/ ILCABS530

PSYCHOSOCIAL & PHYSICAL EFFECTS OF TYPE 1 LEPRAE REACTION IN FEMALES

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Introduction: T1R in leprosy result from the activation of cell immunity and causes acute onset of redness & swelling in leprosy skin lesion & sometimes lesion may ulcerate. Marked edema of the hand, feet & face may occur. Neuritis is often associated with T1R leading to disability. Patients with leprosy in reaction report a decrease of leisure and social activities, leading to social isolation. There is a need to study the physical and psychosocial impact of reactions especially on the visible parts of the body.

Objective: To study the Psychosocial & physical effects of T1R in females.

Methods: For this study all the T1R, who are coming to our tertiary hospital are selected & data will be collected from the HMS from 2020 & 2021. Patients were interviewed and questionnaires were prepared to understand the mental, physical& social impact of reactions.

Result: There were 2169 patients who registered in 2020-21, 391 no. of patients reported with Reactions out of which T1R were 223 and type2 were 168. In this study we focused on female patients with type 1 reaction which were 92 and according to age we found that no reaction among (0%) 0-14 yrs group, 35.86% in15-30 yr, 27.17%, in 31-45 yrs, 28.26% in 46-60yrs and only8.69%. in>60 yrs age group. 2 pateints from each representative sample age wise were selected and interviewed on psychosocial impact of T1R. Analysis in progress and findings will be presented in the conference.

Conclusion: This study will inform the impact of is mostly in the young age group female patients affected due to patches their cosmetic appearance was dull & their self esteem becomes low, which cause social withdrawal. This study will help to design health education materials to address them and also suggest intervention measures to manage them.

Keywords: Leprosy, Females, Type 1 reaction, Psychosocial impact

#0611/ ILCABS548

ENTEROPATHY INDUCED BY CLOFAZIMINE:-A RARE ADVERSE REACTION IN A PATIENT OF LEPROSY

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Introduction: Clofazimine is a well known component of Multiple drug therapy for leprosy. It causes reddish discoloration of the skin and also ichthyosis.In this case patient reported epigastric pain with vomiting

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occasionally which is unrelated to meals,abdominal pain, mal absorption of food, and rebound tenderness. Histological findings of clofazimine crystals was seen.

Description of the case: A 35 year old male patient was diagnosed with multibacillary leprosy, for which he was taking MDT for the last 9 months. He is under regular follow up in our hospital.He presented with history of pain in abdomen since 2 weeks which was around umbilical region, dull aching pain without any referred pain. The pain was recently aggravating,intermittent, dull-aching, lasting for long periods of time, occurring specially during the day time, it was not related to intake of fluids or solid food and was not relieved by proton pump inhibitor or antacids.Patient was then referred to surgery opd, where physical findings revealed few enlarged lymph nodes at the right cervical region and mild tenderness at the periumblical region without stiffness or guarding rigidity. No hepatosplenomegaly or palpable superficial nerves were detected. Abnormal laboratory findings included eosinophilia, hyperglobulinemia and hypoalbuminemia. The serology test for human immunodeficiency virus infection and syphilis were negative.The patient's illness history revealed that he had lepra-2 reaction (ENL) during MDT course for which he was prescribed clofazimine at dose of 300 mg monthly and 50 mg daily with additional appropriate corticosteroid and then regular MDT treatment was continued. The reaction subsided without any adverse events.There were radiological abnormalities in ileum and jejunum region.Biopsy revealed red crystal and plasm cells.Marked improvement was observed after discontinuing Clofazimine and replacing it with other appropriate regimen.

Conclusion: -Knowledge abouty this rare side effect can be helpful to avoid unnecessary biopsy,endoscopy and can save patients money.

Keywords: Leprosy, Clofazimine, Rare, Enteropathy, Adverse reaction, Drug

#0612/ ILCABS560

SHINY NODULES-A GREAT MIMICKER

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Introduction: Leprosy is an infectious disease caused by *M. leprae* affecting skin and peripheral nervous system.

Case description: 24 year old, male patient,who works in a bakery presented with skin coloured raised lesions over body since 2 months, wound over medial side of left foot since 1 week and diffuse swelling of both hand and feet since 1 week.

- History of nasal stuffiness and epistaxis present since 2 months
- Past history, family history and personal history was insignificant.
- Based on history these differential diagnosis were made popular mucinosis,sarcoidosis,Hansen's disease.

On general physical examination there was non pitting type of edema present over bilateral upper and lower limbs. On local examination multiple shiny papules and few nodules were present over back,ear,bilateral upper and lower limbs. There was a solitary wound measuring 2x3 cm over medial aspect of left lower limb.

On sensory examination there was diminished sensations over ulnar aspect of both hands and dorsum of right hand, there was diminished temperature and pain over ulnar aspect of both hands.

On motor examination wasting of hypothenar muscles was present.

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Card test was positive and Wartenburg's sign was present.

On Nerve examination almost all nerves were thickened.

Suspecting Hansen's disease after examination slit skin smear was done which was positive for lepra bacilli. On hpe foamy histiocytes were seen which confirmed lepromatous leprosy and patient was started on MB-MDT.

Follow up after 6 months showed complete resolution.

Since leprosy is too rampant in India, it is better to consider leprosy as differential diagnosis in all relevant cases. So never overlook the diagnosis.

Keywords: Shiny nodules, Hansen's disease, Slit skin smear, Foamy histocytes, MB-MBT

#0613/ ILCABS563

BORDERLINE TUBERCULOID LEPROSY MASQUERADING AS GRANULOMA ANNULARE: A RARE CLINICAL SCENARIO

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Introduction: Borderline tuberculoid (BT) is the commonest type of leprosy. Skin lesions of BT leprosy may present as macules or maculopapular lesions with satellite lesions. The number of skin lesions may vary from 3 to 10 and they show variation in size and contour. The skin lesions are often anaesthetic or hypoesthetic. But sometimes clinical presentation may vary. Here, we report a case of tuberculoid leprosy clinically presenting as granuoma annulare.

Case Report: A 63-year-old male presented with multiple asymptomatic elevated skin lesions over both forearms and dorsum of hands since 1 year. On cutaneous examination multiple, ill-defined, erythematous to hyperpigmented, annular plaques of size 1x1cm are present bilaterally over dorsum of hands and forearms. Multiple papules are also present surrounding the plaque. Skin overlying the plaque was shiny. Diascopy was positive. Touch and temperature sensations over the plaque were normal. Peripheral nerves were not thickened and not tender. Palms, soles, oral cavity and genitalia were normal. Differential diagnosis of granuloma annulare and sarcoidosis was made. Skin biopsy taken from the margin of plaque over dorsum of hand showed dense inflammation in dermis comprising of epithelioid cell granulomas with lymphocytes along the neurovascular bundle, and few Langhan giant cells suggestive of borderline tuberculoid leprosy.

Conclusion: Granuloma annulare like presentation is quite rare in leprosy. One should be aware about both common and uncommon presentations of leprosy for earliest diagnosis. Untreated leprosy can cause progressive and permanent damage to skin, nerves and limbs which necessitates the need of early diagnosis and treatment. Histopathology is confirmatory and helps in diagnosing and classifying the disease. Thus, biopsy should be done in all suspected cases.

Keywords: Tuberculoid leprosy, Granuloma annulare

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#0614/ ILCABS573

PRETTY LEPROSY-A GLARE IN THE EYE.

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Introduction: Leprosy is a chronic infection caused by Mycobacterium leprae with a higher incidence in developing countries. Among vast spectrum of the disease, a rare variant Lucio leprosy falls under lepromatous spectrum with high bacillary load. It is observed almost exclusively in Mexico and Central America. However, isolated cases are being reported worldwide. Here we report one such case which presented to our OPD with generalized hair loss.

Case Report: A 32yr old male, presented with complaint of progressive hairloss on scalp, eyebrow, eyelashes, moustache and beard since 3-4 yrs. Eyebrows were first to be involved, while scalp hair were the last. No history of any numbness on extremities, no history of recurrent fever or joint pain, no history of epistaxis, slippage of footwear, or any ulcers. On examination, eyebrows, eyelashes, moustache and beard were absent with few scattered terminal hair. No hypopigmented patches or plaques or any other skin lesion were present. Male pattern baldness was present with involvement of frontoparietal scalp. Diffuse shiny infiltration was seen on face and ear pinna. Gynaecomastia was noted. Reduced body hair with relative sparing of axillary and pubic hair. Testicular size and sensations were normal. No nerve enlargement upon palpation. Peripheral sensations and motor examination were normal. Slit skin smear revealed AFB positive bacilli with BI of 2.5+ and MI of 2%. Based on above findings, diagnosis of Lucio leprosy was considered. Biopsy revealed periadnexal lymphocytic infiltrate with hypertrophic nerve bundle. Patient was started on MB-MDT.

Conclusion: Lucio leprosy tends to be missed out easily because of its rarity and deceiving features which closely mimic diffuse alopecia areata. It is wise to examine head to toe properly to prevent misdiagnosis and treatment with immunosuppressants which worsens the patients condition. Once suspected clinically, it is easy to confirm diagnosis by SSS and biopsy.

Keywords: Lucio leprosy, Generalised hair loss, Slit skin smear, Lepromatous spectrum, AFB bacilli

#0615/ ILCABS574

A RARE FORM OF LEPROMATOUS LEPROSY: HISTOID LEPROSY

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Introduction: Histoid Leprosy is a rare form of Lepromatos leprosy which represents resistant bacilli and highly active process. These cases act as a reservoir of the disease and causes further spread of leprosy

Description of the case: A young female came with the complaints of asymptomatic swelling over the extremities since 2 months which were gradually increasing in size and number.Patient also gives history of swelling of feet on standing for long hours. On examination, multiple shiny, skin coloured and pigmented

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papules or nodules are distributed bilaterally over the extremities with the nerve thickening of Ulnar nerve, radial cutaneous nerve and Lateral popliteal nerve. Slit skin smear was done and showed bacteriological index of 5+. Histopathology showed atrophied epidermis and subepithelial grenz zone. Dermis showed nodular proliferation of round as well as few spindle shaped histiocytes having pyknotic nuclei and foamy to vacuolated cyutoplasm forming interlacing bands and whorls and tight curlicules. Flit faroca stain was positive. Patient was started on MB-MDT, after 6 months she had fever with erythema over the lesions and she was 4 months pregnant. She was diagnosed with Type II Lepra reaction and was treated accordingly.

Discussion: Histoid leprosy was first coined by Wade in 1960. It is a variant of Lepromatous leprosy but can also be seen in Borderline and Intermediate leprosy occasionally. It is characterised by well demarcated nodules, plaques on the skin and subcutaneous tissue. These patients might have histoid facies. Histoid leprosy manifests in patients on Diaminodiphenyl sulphone or in incompetent patients. But it can also be caused as denovo. Bacteriological index in these cases is mostly 5+ or 6+.Continual occurence of these cases causes difficulty in eliminating leprosy as a public health problem.

Keywords: Histoid leprosy, Resistant bacilli, Reservoir of disease, Diaminodiphenyl sulphone

#0616/ ILCABS577

OCULAR CLUE OF RECURRENT ENL - A UNCOMMON MANIFESTATION OF A TROPICAL INFECTIOUS DISORDER

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Introduction: With the advent of MB-MDT and early detection of cases, ocular involvement in type 2 lepra reaction has become a relatively rare occurrence. Case report: A 30-year-old woman presented with recurrent redness of left eye, symptomatically treated as an allergic conjunctivitis over past 2.5 years. The present episode was characterized by redness, watering, pain and photophobia in the right eye. She was a known case of BL leprosy who had completed one year course of WHO-MB MDT successfully 2 years back and continued to have recurrent ENL post treatment, which coincided with the recurrent ocular complaints. Eye examination revealed a visual acuity of 6/18 and 6/24 eye in right and left eye respectively with circumcorneal congestion in right eye. Slit lamp examination revealed grade 3+ anterior chamber cells in right eye and a limbal nodule, indicating an acute uveitis. The left eye had irregular poorly dilating pupil due to scattered posterior synechiae and demonstrated iris pigment on anterior lens capsule (but with no anterior chamber cells, flare or keratin precipitates) indicating a healed uveitis. Posterior segment examination was normal in both eyes. Biopsy from a skin nodule, which appeared after few days, confirmed the diagnosis of ENL. Her ENLIST ENL severity score was 6, while the BI and MI were nil. The patient was initiated on NSAIDS for both the cutaneous and ocular disease manifestation, along with topical steroid eye drops, with improvement of both within 4 days of initiation. Discussion: Although ocular disabilities have markedly reduced since the advent of WHO MDT, potentially blinding ocular involvement is still encountered in undiagnosed cases. Specifically, ocular complications due to recurrent reactions, as seen in our patient, continue to occur post completion of MDT. Conclusion: Our case highlights the need for a detailed ocular examination in patients with chronic recurrent

Keywords: Uveitis, Erythema nodosum leprosum, Hansen disease

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#0617/ ILCABS588

DERMOSCOPY OF LEPROSY LESIONS: A NOVEL STUDY

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Introduction: Dermoscopy is a novel tool used for a variety of dermatoses. However the dermoscopic patterns of leprosy, particularly in the Indian skin of color, are not well described. The dermoscopic patterns of reactional states are also not well known.

Aim: To determine the dermoscopic patterns of leprosy

Materials and Methods: 68 consecutive leprosy patients who presented to the Outpatient department and satisfying the WHO definition of leprosy or were biopsy-proven, were subjected to dermoscopic examination using DL 4 dermlite dermoscope in both polarised and non-polarised modes.

Results: In Tuberculoid spectrum (TT & BT), regular dotted vessels, globular structures and white structureless areas with white eccrine openings were common. In Lepromatous pole, scattered red dots, linear vessels were common. In Type 2 ENL lesions, dilated and tortuous megacapillary like vessels were common.

Conclusion: Dermoscopy of Leprosy lesions is a valuable tool and can help in deciding both the spectrum and reactional states of Leprosy.

Keywords: Dermoscopy, Leprosy, Globules.

#0618/ ILCABS591

A RARE CASE REPORT OF TYPE 2 LEPRA REACTION

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Background: leprosy is a chronic granulomatous infectious disease that is caused by Mycobacterium leprae. however, new cases are diagnosed every year. The difficulty arises when the presentation of the patient is unusual.

Case Report: A 32 year old male patient present with erythematous plaques present over the left side of the face with left side ear and left eye involvement associated with fever and joint pain since 2 years. On examination left greater auricular nerve and frontal nerve thickned and tender.

Discussion and Conclusion: Patient diagnosed clinically and biopsy was done which suggestive of lepra type 2. Lepra reactions were found to be a presenting feature in a significant number of new leprosy cases at initial diagnosis and was treated with anti-leprosy medication.An unusual presentations of leprosy may delay its prompt diagnosis and treatment which increase the morbidity and mortality. Although leprosy has been declared eliminated, it should not be forgotten and dermatologist should have it in mind to make it a differential diagnosis whenever relevant.

Keywords: Type-2 lepra reaction

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#0619/ ILCABS593

BORDERLINE TUBERCULOID LEPROSY MIMICKING LUPUS VULGARIS

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Introduction: leprosy is a chronic infectious granulomas disease caused by mycobacterium leprae that can manifest as a wide variety of immunological and clinical features. The predominant manifestations are skin lesions with diminished sensation, thickened subcutaneous nerves, and the presence of acid fast bacilli.

Case Report: A 28 year young female came to leprosy clinic with complain of erythematous indurated plaque over the left cheek region associated with burning sensation and intact sensation with normal peripheral nerves. This unusal presentation was initially misdiagnosed as lupus vulgaris because noncaseating granulomas are a histopathological feature of both diseases and patient was treated with ATT for 6 months but no improvement was observed. 2nd biopsy was done in which granulomatous changes are visible, with epithelioid cells and lymphocyte infiltration.

Later patient was treated with a 6-month course of multidrug therapy led to a marked improvement in the skin lesions.

Discussion and Conclusion: The exact nature of relationship between leprosy and tuberculosis still remains enigmatic. They share similarities like both diseases being caused by gram-positive, acid-fast mycobacteria that are characterized by chronic granulomatous reaction and host-specific cell-mediated immune response plays a vital role in defining the clinical spectrum.

Keywords: Lupus vulgaris

#0620/ ILCABS601

HANSEN'S DISEASE MASQUERADING AS A BENIGN TRIGEMINAL TUMOR

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Introduction: Leprosy is a chronic infectious disease primarily involving the skin, peripheral nerves and joints. Intracranial involvement however is an unusual scenario. The affection of trigeminal nerve intracranially has not been reported by far.

Case Description: We report a leprosy patient with trigeminal nerve involvement presenting as facial pain and paraesthesias which was initially diagnosed as trigeminal tumor and considered for gamma-knife surgery. Meanwhile, he was referred to dermatology for evaluation of erythema and edema on the left side of face which had developed simultaneously.

Examination showed a single, well to ill-defined hypoaesthetic, erythematous, edematous scaly plaque on face. He also had a thickened left common peroneal nerve and decreased sensation over left foot. Nerve conduction study showed absent compound motor action potential in left common peroneal nerve. High-resolution ultrasonography with color doppler showed enlargement of left common peroneal nerve(L=0.36mm;R=0.17mm) and left posterior tibial nerve(L=0.35mm; R=0.15mm). Histopathological examination of skin biopsy from

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lesions on face was suggestive of borderline tuberculoid leprosy in type I reaction (T1R) and the intracranial space occupying lesion was theorized to be an inflammatory nodule due to T1R.

The patient was started on World Health Organization (WHO) multidrug therapy multibacillary regime (MDT-MBR) along with prednisolone 40mg once daily for T1R. The CEMRI brain two months post-treatment initiation showed a grossly normal study with no abnormal enhancing lesions confirming our suspicion of it being an inflammatory swelling. He had significant improvement and is on regular follow-up being continued on MDT with tapering doses of prednisolone.

Conclusion: We report an unusual presentation of BT leprosy with cranial involvement. Awareness regarding such a presentation is essential for neurologists and dermatologists alike not only for early diagnosis and prompt treatment of this potentially disabling disease, but also to avoid unnecessary interventions.

Keywords: Leprosy, Trigeminal nerve, Type-I reaction, Intracranial hansen's

#0621/ ILCABS610

BRACHIAL PLEXOPATHY IN HANSEN'S DISEASE- A REPORT OF 2 CASES.

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Introduction: Brachial plexus involvement in Hansen's disease (HD) is rare as the lepra bacilli prefer superficial, peripheral, and cooler parts of the body. We present 2 cases where prompt diagnosis and treatment led to a favorable outcome.

Case Report: The first patient was a 56-year-old male with progressive sensorimotor weakness of the left upper limb for 2 years, left wrist-drop for 1 year, pain and restriction in range of motility of left shoulder for 2-3 months and asymptomatic reddish plaques over body for few weeks. Examination showed an adducted left upper limb, thickened median and radial cutaneous nerves, weakness of forearm extensors and intrinsic hand muscles with complete claw. There were multiple erythematous round to oval hypo-aesthetic plaques over the upper lip, left upper limb & lower back which on biopsy showed features of borderline tuberculoid HD with type-1 reaction. Skin smears were negative. Nerve conduction study (NCS), ultrasonography and MRI showed features of left brachial plexopathy with left median and radial neuropathy.

The second case was of a 26-year-old male with diffuse swelling and weakness of the left upper limb for 5 months and multiple reddish plaques for 2 months. He had a large erythematous anaesthetic plaque extending from the left arm to hand and multiple hypo aesthetic plaques over the face, right arm and back. The left ulnar nerve was thickened and tender with symmetrical enlargement of other peripheral nerves. The average bacillary index of 1+ and skin biopsy suggested mid borderline and borderline tuberculoid HD in type-1 reaction. NCS showed left brachial plexopathy .

Initiation of systemic steroids (prednisolone 1mg/kg) along with WHO multibacillary multidrug therapy led to significant clinical improvement in both.

Conclusion: Although uncommon, brachial plexopathy can be manifestation of HD and its presence should not deter us from diagnosing leprosy.

Keywords: Brachial plexopathy, Reaction, Nerve conduction studies

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#0622/ ILCABS613

TINEA IN HANSENS DISEASE - A CASE SERIES

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Introduction: Dermatophytes cause superficial fungal infections of skin, nails and hair. Mycobacterium leprae causes chronic inflammatory disease of skin and nerves with spectrum of clinical presentation ranging from tuberculoid Leprosy to lepromatous Leprosy depending upon the immune response of host. Very few cases of coexistence of Tinea and Hansens in the same patient have been reported in the literature. Dermatophytic infection can be a late iatrogenic effect of MDT and oral corticosteroids used in the treatment of reactions.

Objectives: To study the clinical presentation, iatrogenic effect of MB MDT and corticosteroids on Tinea in Hansens Disease.

Patients: Patients presenting to the Hansens clinic of a tertiary care hospital.

Results: Out of 7 patients 5 were males and 2 females. 2 cases each of LL, BL, BT Hansen's and 1 case of indeterminate Hansen's. 4 cases were in type 2 reaction and 1 in type 1 reaction. 6 patients had Tinea corporis and 1 patient had Tinea Cruris. 1 patient had Tinea corporis at the time of diagnosis of LL Hansens. 4 patients were on MB MDT, 2 had completed MB MDT and 1 was yet to start MB MDT. 4 patients were on steroids for the treatment reaction. None had Diabetes/family history of Tinea, 1 was obese. Patients had complaint of dark scaly lesions with mild/no itching.

Limitations: A study with a larger sample size is required.

Conclusion: MDT can cause dryness of skin(clofazamine induced icthyosis) which leads to Tinea infection. Immunosuppression caused by Corticosteroids makes a person susceptible to dermatophytosis and can mask the symptoms. With increasing incidence of new, chronic and recurrent cases of Tinea in India it is of paramount importance to screen for Tinea in Hansens patients on MDT or steroids.Tinea can add to already existing psychosocial burden of Hansens disease, affecting their overall well-being.

Keywords: Tinea, Hansens, MDT, Corticosteroids,

#0623/ ILCABS620

SOLE, AN UNCOMMON LOCATION OF BORDERLINE TUBERCULOID HANSENS

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Introduction: *M. leprae* prefers relatively cooler temperature. Hence areas of skin with a relatively lower temperature and more trauma prone are mainly affected. Sites like scalp, eyelids, axillae, palms, soles, groins, genitalia, lumbosacral area, midline of back and perineum are immune to the development of leprosy lesions. Reason for sparing them are due to relatively high local temperature. Palmoplantar involvement is rare in leprosy. Palms-soles are trauma prone and cooler areas of the body with rich nerve supply and are categorized as one of the immune zones in leprosy. But is less frequently affected because of thicker skin and fibrofatty tissue, which results in high nerve bed temperature.

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Case Report: A 65 year old male presented with two asymptomatic lesions, one a well defined, round, 5*5 cm, dull erythematous to hyperpigmented plaque with central clearing over medial aspect of left foot and second a single, erythematous, roundish 2*2cm, plaque with central clearing over medial aspect of left foot just below the ankle since 3 months. Histopathology (sole) showed well formed granulomas composed of lymphocytes and giant cells in entire dermis and subcutaneous tissue with perivascular lymphocytes in papillary dermis s/o Borderline tuberculoid hansens (BTH). Slit skin smear was negative. With final diagnosis of BTH on sole, he showed marked flattening of lesions at the end of 6 months of MB-MDT.

Conclusion: A protean disease like leprosy can affect any body site including clinically normal areas. Palmoplantar involvement in leprosy is 3.6 -12.2% with palmar more than plantar involvement. Palmoplantar involvement is seen more in lepra 1 reactions in borderline leprosy (palms more involved than soles). Although uncommon, palmoplantar involvement is associated with higher risk of disabilities and reactions, hence should be kept in mind.

Keywords: Palmoplantar, Immune zones, Hansens over sole of foot

#0624/ ILCABS622

DENOVO HISTOID HANSENS MASQUREDING AS GRANULOMA ANNULARAE-A RARE CASE REPORT

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Introduction: Histoid leprosy (HL) is an uncommon variant of lepromatous leprosy, characterized by cutaneous/subcutaneous nodules and plaques present over apparently normal skin, with unique histopathological findings, characteristic bacterial morphology and very high bacillary index. It mimics many other dermatosis and can be missed clinically.

Description: A 69-year-old male presented with multiple,asymtomatic shiny, erythematous, nodules, papules, and plaques over bilateral arm, forearms, few on neck, abdomen, back, legs and face since 2 months.

They first appeared over the upper limbs and gradually progressed to whole body including face. No history of burning sensation in the eyes, nasal stuffiness and swelling of feet. No H/o any drug intake, fever, arthralgias, myalgias, spontaneous blistering or ulceration and testicular pain. No h/o contact with leprosy patients. Known case of DM-II since 20years.

On examination there were multiple, shiny, non-tender, skin colored to erythematous, papules, nodules, few annular to arcuate plaques with central clearing overexposed areas of bilateral anterior, posterior aspects of arms, forearms, neck, face and abdomen and bilateral legs with sparing of palms and soles. Bilateral ulnar nerves were thickened.Hot and cold sensations were altered in bilateral hands.

A lesional boipsy revealed atrophic epidermis, extensive cellular infiltration in dermis with histocytes, lymphocytes, and plasma cells. There are clear Grenz zones below the flattened epidermis. Slit skin smear showed a full field of AFB and globi,BI>5+ .

Conclusion: Histoid leprosy cases can form potential reservoir of the infection.Hence early diagnosis and complete treatment are important to achieve our goal of zero leprosy.

This is unique case as the patient is a de novo case of Histoid leprosy with atypical morphology of granuloma annularae with DM-II is masqueding clinically

Keywords: Histoid Hansens, Granuloma Annularae, Leprosy, Dapsone.

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#0625/ ILCABS624

FACTORS ASSOCIATED WITH THE SEVERITY OF COVID-19 SYMPTOMS AMONG LEPROSY PATIENTS IN THAILAND

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COVID-19 symptoms ranged from mild to severity. Pneumonia is potential common among vulnerable groups infected with COVID-19.

The objective of this study is to identify factors associated with the severity of COVID-19 symptoms among leprosy patients in Thailand.

The methodology is Cross-sectional descriptive study. Study subjects were leprosy patients infected with COVID-19, and admitted between April 2021 and May 2022. Information was collected from disease investigation reports and patient history. Descriptive statistics and Chi-Square Test were used to analyze the data.

The study found that among 120 leprosy cases infected, there were more males (56.7%) than females. Their average age was 70 years old ranging from 33 to 100 and 75% of them had disabilities. The percentage of patients who were non-smokers, non-drinkers and affected by congenital disease were 90%, 87.5% and 80% respectively. There were 57.5% of patients had been infected within the community and 4.2% of them had been re-infected. The numbers of those who received the 1st vaccination accounted for 77.5%. The most common symptoms were cough, fever and mucus (55.5%, 28.3% and 20.8% respectively). Furthermore, lung abnormality found at the first admitted X-ray accounted for 65.8%. Regarding to laboratory related data, there were anomalies of LFT, Electrolyte and HCT accounted for 75.8%, 46.7% and 41.7% respectively. During the treatment process, X-ray results showed irregularity of lungs at 97.5%. The admitted period was around 11-20 days, in which patients were treated with Favipiravir and Corticosteroids (60% and 33.3% respectively). Overall fatality rate accounted for 12.5%.

In this study, several factors were not taken into account.

In conclusion,admitted period associated with the severity of symptoms during infection at statistically significant level

Keywords: Leprosy patients in Thailand, Severity of COVID-19, Association

#0626/ ILCABS636

CLINICO-EPIDEMIOLOGICAL PROFILE OF LEPRA REACTIONS IN LEPROSY PATIENTS.

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Introduction: Lepra reactions are acute exacerbation in silent course of leprosy which leads to complications thus requiring urgent medical attention and adjuvant treatment.

Objectives: To study the clinico-epidemiological profile of lepra reactions in leprosy patients.

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Material and methods: This was a retrospective, record based study conducted on patients registered in the Hansen's disease clinic at tertiary care hospital from January 2016 to December 2021.

Results: Out of 169 patients, 41(24.2 %) presented in reaction. Type 1 and 2 reaction was present in 18.9 % and 5.3 % of patients respectively. Most common clinical presentation of type 1 reaction was cutaneous (increased redness, edema and tenderness of lesions) in 78.1%, neuritis in 53.12 % followed by facial and hands/feet edema in 6.25 % of patients. Common factors associated with type 1 reaction were age > 30 years, borderline leprosy, MDT initiation, extensive disease and facial involvement. In type 2 reaction, most common presentation was cutaneous in 100 %, neuritis in 55.5%, iridocyclitis 22.2 % followed by epididymo-orchitis in 11.1% of patients. Most common morphologies of cutaneous lesions were papulonodular in 44.4 %, necrotic-ulcerative in 33.3 % followed by papulopustular in 22.2 % patients. Type 2 reaction showed an association with predominantly male sex> 20 years, lepromatous leprosy, high bacteriological index >4+, preceding infection and stress. Majority of type 1 reaction was seen in BT leprosy (75%) followed by LL leprosy (12.5 %) while majority of type 2 reaction occurred in LL leprosy (77.7 %) followed by BL (22.2%) leprosy. Deformity was present in 27 (15.9 %) of patients.

Conclusion: Active watchful approach should be exercised for prevention and early recognition of reactions and their predisposing factors which will minimise inflammatory damage.

Limitation: Record based retrospective study

Keywords: LEPROSY, REACTIONS, NEURITIS,

#0627/ ILCABS643

THALIDOMIDE AGGRAVATING ENL IN MULTIBACILLARY LEPROSY PATIENT- A CASE REPORT

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Introduction: Thalidomide is the most endorsed drug for resistant inflammatory reactive states of leprosy particularly Erythema Nodosum Leprosum (ENL) reaction alleviating clinical symptoms, despite its embryopathy. The action of thalidomide is mediated through modulation of pro-inflammatory cytokine TNF-α levels however the bidirectional effect of thalidomide on its level has been reported earlier. Here we present a case of ENL in multibacillary patient aggravating with thalidomide. This case report will aid the clinicians to make cautious decisions while follow-up of patients of ENL and varied off-label indications like plasma/mantle cell leukemia, hepatic epithelioid hemangioendothelioma and steroid unresponsive sarcoidal granulomas of the skin.

Description: A 23-year-old male presented with on-and-off eruptions with fever since the last few months. Along with multidrug-therapy, he was prescribed 20mg/day of prednisolone and thalidomide 200 mg/day. After detailed examination and investigations the diagnosis of Lepromatous leprosy with ENL reaction was made and treatment was started. The prednisolone was increased to 1mg/kg body weight/day. With appearance of fresh crops of eruptions, the dose of thalidomide was increased to 300mg/day. The symptoms worsened with ulceration. This unusual response was attended to and the drug was immediately withdrawn. Within 24 hours, the patient showed symptomatic improvement with resolution of fever and diminished tenderness in the nodules.

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Conclusion: This is a rare event of thalidomide-induced aggravation of lepra reaction which may be attributed to paradoxical enhancement of TNF-α production as reported earlier in literature. Studies have established that its effects on TNF levels are bidirectional and has resulted in development of structurally modified thalidomides for superior unidirectional inhibitory action. To ensure minimization of fetal exposure to thalidomide, The wider availability of thalidomide has enhanced off-label applications. This report presents a unique opportunity to reconsider thalidomide for ENL as most of the cases are well managed by NSAIDs or steroids.

Keywords: Thalidomide, Leprosy, Multibacillary, Lepra Reactions

#0628/ ILCABS647

CLINICAL PATTERN OF HAND-FOOT DEFORMITIES AND LEPRAE REACTIONS IN LEPROSY PATIENTS IN CENTRAL KARNATAKA - A ONE YEAR STUDY AT TERTIARY LEVEL HOSPITAL.

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Introduction: leprosy is a chronic infectious disease primarily affecting skin and peripheral nerves. India achieved leprosy elimination as a public health problem in 2005. India still has the highest burden of cases worldwide. Early diagnosis and treatment can prevent the deformities and disabilities and reduces the spread in community.

Aim: To know the clinical pattern of deformities in leprosy and their relation to various demographic elements and occurrence of Grade2 deformity in newly diagnosed cases.

Material and Methods: A total 50 cases of Hansen's disease belonging to all age groups and both sexes were selected in the study after taking their consent. Initially detailed history and examination done. Deformities were noted. In all cases necessary investigations were done.

Result: Majority of patients belong to age group of 21 to 30yrs i.e 26% (13/50). Male(31) outnumbered female(19) with 78% (39/50) belonging to low socioeconomic status. Most common spectrum of Hansen's was Borderline tuberculoid BT 46% (23/50) > Histoid Hansen's 4%(2/50) > Tuberculoid leprosy TT 2% (1/50) and Borderline BB 2% (1/50) . Grade 2 deformity 72% (36/50) was more compared to Grade 1 deformity 28% (14/50). Claw hand 44% (22/50), trophic ulcers 54% (27/50), autoamputation of digits 34% (17/50) noticed. 16% (8/50) new cases of Hansen's with Grade 2 deformity noticed. 16% (8/50) and 10% (5/50) were in type 1 and ENL reaction respectively.

Conclusion: It can be said leprosy still continues to be a disease which is commonly seen in low socioeconomic status group people. Leprosy continues to be a domestic, national and global burden.

Keywords: Deformities, Disabilities, Lepra reactions

#0629/ ILCABS655

NEED FOR NOTIFICATION AND SURVEILLANCE IN THE MANAGEMENT OF LEPROSY – A CASE REPORT

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Introduction: Leprosy is a chronic infectious diseases caused by Mycobacterium leprae, primarily a disease of nerves though the initial manifestations are seen on the skin in majority of cases. There is always a potential risk of developing nerve function impairments, if left untreated or improperly managed or delay in diagnosis.

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Description: A 46 years old male reported to a secondary level leprosy referral centre managed by a non-government organisation in March, 2022.

History reveals consumption of MB – MDT for 3 months about 20 years ago as he had anaesthetic lesions over upper limbs. Thereafter, he reportedly discontinued the medication and was normal till six months ago, where he developed loss of sensation in hands and feet and consulted a tertiary care hospital in January, 2022. There he was subjected for a series of investigations like nerve biopsy, ENMG and at the end the patient was not diagnosed as a case of leprosy.

A complete physical examination revealed no skin lesions with thickening of bilateral ulnar, lateral popliteal and posterior tibial nerves. Sensory loss noticed in bilateral palm and sole when tested with ball point pen. Little finger abduction is weak on right hand while other skeletal muscles are normal in power. Diagnosis of HD-MB-MDT- defaulter with nerve function impairments was made. The patient was restarted on WHO prescribed MB-MDT along with a course of steroids. He was demonstrated on self-care measures including use of MCR insole footwear with an advice to continue at home and report back every fortnight for follow-up.

Conclusion: Case notification, holding and follow-up for longer period need to be made mandatory in the management of leprosy to avoid complications.

Keywords: Leprosy, Notification, Surveillance, Management

#0630/ ILCABS661

A CASE OF BULLOUS ERYTHEMA NODOSUM LEPROSUM IN POST PARTUM PERIOD : RARE ENTITY

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Introduction: Leprosy is a chronic, slowly progressive granulomatous infection caused by Mycobacterium leprae . Reactions in leprosy are the common complications seen in this condition. They are of two types : Type 1 lepra reaction & Type 2 lepra reaction.Type 2 reaction characterized by the appearance of crops of numerous evanescent erythematous, tender nodules and plaques.The appearance of bullous eruptions over a pre existing plaques of leprosy is not an usual presentation. We report a case of Bullous erythema nodosum leprosum in a female in post partum period who responded well to Thalidomide.

Case Report: A 30-year-old pregnant woman with multiple numb patches on her body was initially diagnosed with borderline lepromatous leprosy and started on multibacillary multidrug therapy. During the fifth month of her pregnancy, she experienced a Type 1 reaction. She stopped therapy on her own post-pregnancy during which she developed a Type 2 reaction. Dermatological examination showed a peculiar presentation of bullous lesions over the pre-existent leprosy patches along with neuritis. She was diagnosed as a case of bullous Erythema Nodosum Leprosum(ENL). The lady was started on systemic steroids to which she didn't respond, following which she was started on Thalidomide to which she responded well. This case highlights the importance of early diagnosis of Type 2 reaction & its management in the postpartum period and emphasizes on the importance of keeping in mind the atypical morphological presentation of Erythema nodosum leprosum.

Discussion: ENL is the typical presentation of Type 2 lepra reaction. Only a few reports of bullous reaction in leprosy have been reported in the literature so far. This presentation needs to be differentiated from pemphigus Vulgaris, bullous pemphigoid, bullous drug eruptions, etc. Corticosteroids and thalidomide are the main drugs for the management of type 2 lepra reaction

Keywords: Bullous ENL, Pregnancy, Corticosteroids, Thalidomide

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#0631/ ILCABS666

LEPROSY LATE ONSET NEUROPATHY (LLON) PRESENTING DURING POST RFT PERIOD: A CASE SERIES.

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Introduction: Leprosy remains a common infectious cause of neuropathy. Patients who develop nerve impairment months or years after MDT which could not be explained by relapse or recurrences have been considered as leprous late onset neuropathy(LLON). We discuss 3 such patients who came to our tertiary care centre.

Objectives: Our objective was determining burden of LLON in our community and understand its morbidity.

Patients/Materials & Methods: We conducted a case series where we analysed our hospital records of leprosy patients who visited us over last 2 years. We ruled out symptoms suggestive of type 1/2 reaction like fever, joint pain, oedema, evanescent skin lesions. Routine investigations were done and demographic data was noted.

Results: We analysed 37 patients in our case series. Of these, 3 had LLON. All 3 patients of LLON; were older than 18 years, had the multibacillary form of leprosy, were treated with MDT and released from treatment as per the criteria of WHO. The average duration after which the patients developed symptoms of LLON after being RFT was varying from 1 to 3 years. Two patients developed c/o tingling, numbness, weakness over B/L hands with difficulty in carrying out daily activities. Third patient complained of tingling, numbness with increase in pre-existing deformity of hands. We differentiated LLON from chronic neuropathic pain(CNP) by, the intensity of pain was mild in LLON as compared to CNP and it was mononeuritis rather than polyneuritis that is seen more commonly with CNP.

Limitations: Our limitations were small sample size

Conclusion: Leprosy is one of the major causes of peripheral nervous system disease. Detailed histological analyses with the identification of cell type and antigens are necessary for the understanding of pathogenesis of LLON. In order to better understand and recognise this form of disease, further multi-centre research is necessary.

Keywords: Leprosy, Late onset, Neuropathy,

#0632/ ILCABS670

A STUDY OF CORRELATION OF CLINICAL,BACTERIOLOGICAL AND HISTOPATHOLOGICAL FINDINGS IN NEW CASES OF HANSENS DISEASE IN A TERTIARY CARE CENTRE

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Introduction: Leprosy is a chronic granulomatous infectious disease caused by Mycobacterium Leprae. In leprosy, there is a varied range of clinicopathologic manifestations and diagnosis is made from adequate clinical information combined with bacilloscopy and histopathology.

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Aims and Objectives: To correlate the clinical features of skin lesions with bacterial index and histopathological findings in patients with Hansens disease.

Materials and Methods: A cross sectional study was conducted in 30 new cases of Hansens disease at Out Patient Department of Dermatology Venereology and Leprosy in Osmania General Hospital for a period of 6 months.We carried out calculation of Bacterial Index on Slit Skin Smear from two sites- lesion and right earlobe. Histopathological examination of lesional skin biopsies was done.

Results: 30 patients with 4 Tuberculoid Leprosy(TT),14 Borderline Tuberculoid (BT),4 Borderline Lepromatous(BL) and 8 Lepromatous Leprosy (LL) were clinically diagnosed.All TT patients were smear negative. Of 14BT patients,11 were smear negative while 3 were smear positive (1+). All BL and LL cases were smear positive (ranging from 2+ to 4+).Bacteriological skin smear negativity/ positivity correlation is 100%,100%,75%,75% for TT,BT,BL and LL patients respectively. Histopathological correlation is 100%,92.8%,75%,75% inTT, BT,BL,LL patients respectively.Overall Clinical, Bacteriological and Histopathological correlation is 86.6%.

Limitation: Small sample size.

Conclusion: This study shows good correlation of clinical, bacteriological and histopathological features.

Keywords: Bacterial index, Slit skin smear

#0633/ ILCABS683

REVISITING HISTOID HANSEN'S DISEASE IN ERA OF ELIMINATION

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Introduction: Histoid Hansen disease is a rare but well-established clinicopathological entity in the post-global leprosy elimination era, which manifests as relapse after dapsone monotherapy, incomplete or irregular therapies, or resistance to dapsone. In 'de novo cases, the diagnosis remains doubtful. Wade coined the term Histoid leprosy to describe a histological concept of bacillary-rich leproma with spindle-shaped cells and no globus development. In the chronic form, it has a fibromatoid tendency.

Case Details: We hereby present a case of 60-year-old male who presented with multiple painful eruptions all over body associated with tingling and numbness over his hands and feet. This is a rare case that presented as a 'de-novo' type as there was no history of previous treatment exposure. Local Examination revealed multiple well-defined round skin-colored to erythematous hypoaesthetic firm nodules and a few papules with shiny glistening, coppery hue of around 0.5-1 cm diameter, few of them coalescing to form plaques, distributed symmetrically over the neck, back, trunk, bilateral upper limbs, and lower limbs. On examining peripheral nerves; bilateral ulnar, anterior and posterior tibial nerves were palpable and tender -NFI 2. The systemic, ocular, and mucosal examination was normal. This is a rare case that presented as 'de-novo' type as there was no history of previous treatment exposure.

Conclusion: Current trends of Hansen's disease suggest us to be more vigilant towards the suspected cases. Histoid Hansen's was classified as a clinical subtype of lepromatous leprosy. It is a rare variant and is often missed due to its unique presentation. This requires a thorough examination and proper investigations for making the correct diagnosis. Early detection and proper treatment can prevent social and psychological burden by reducing the complications like nerve palsies, motor weakness, and disabilities.

Keywords: Histoid Hansens Disease, Histoid Leprosy, Hansens Disease, Clinical Variant Of Leprosy

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#0634/ ILCABS689

CASE REPORT- UNIQUE PRESENTATION OF HISTOID HANSEN'S DISEASE.

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Introduction: Histoid Hansen's disease is a rare form of multibacillary leprosy, presenting as relapse following dapsone monotherapy and incomplete/irregular therapies or as resistance to dapsone. However, a high degree of suspicion is warranted in de novo cases. We report a case of de novo histoid leprosy, with no history of hansen's or exposure to dapsone or multi drug therapy.

Case report: A 30-year-old male presented with asymptomatic skin-colored raised lesions on the face since 2 years. On examination skin colored to erythematous papules coalescing to form plaques, with dilated follicular openings seen on right side of the forehead and bridge of the nose with midline demarcation. The lesion was soft in consistency, compressible and diascopy was positive. Dermoscopy reveals peripheral brown border with center structureless areas and crown vessels. Differential diagnosis of Angio lymphoid hyperplasia, xanthoma, sarcoidosis were made. Skin biopsy showed features suggestive of histoid leprosy and stain for lepra bacilli positive and shows globi. After the histopathology report, slit skin smear was done which showed BI of 1.66%, MI of 1%. The patient was started on MB MDT based on SSS and histopathological diagnosis.

Discussion: Histoid Hansen's is an uncommon clinicopathological entity presenting as asymptomatic discrete, firm shiny papules and nodules on apparently normal skin. The common sites are extensor surface of the extremities and lower trunk. The characteristic feature in histology is well circumscribed elongated spindle-shaped histocytes in sheets, whorls and storiform pattern. Treatment remains the same as for multi bacillary leprosy as per current recommendation of the WHO.

Conclusion: Our case had an unusual presentation of localised, soft papules and plaques on the face. The case highlights that high clinical index of suspicion is solicited for the diagnosing these emerging rare but unique variants of leprosy.

Keywords: De novo histoid hansen

#0635/ ILCABS701

A CASE OF HISTOID LEPROSY-A RARE VARIANT OF LEPROMATOUS LEPROSY

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Introduction: Histoid leprosy is a rare form of multibacillary leprosy, previously known to occur in lepromatous patients after dapsone monotherapy who had dapsone resistance. Presently, most cases occur 'de-novo'. It is characterized by typical cutaneous and/or subcutaneous nodules and plaques over an apparently normal skin with characteristic histopathology and bacterial morphology. Here we report a case of denovo histoid leprosy in an elderly female patient.

Case Report: An 85-year-old female patient presented with mildly itchy, raised, pinkish skin lesions over face and lower legs since 6 months. There was no history of light coloured lesions, fever, pain in the lesions,

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epistaxis, pedal edema, weight loss, altered sensations, tingling, slipping of footwear or long-term drug intake for the same.

On clinical examination, there were multiple grouped pinkish, nontender, firm, shiny, dome shaped papules and nodules on an apparently normal skin, measuring about 0.5 cm to 2 cm, over bilateral cheeks, chin and lower legs. There were no hypopigmented skin lesions. No sensory impairment, nerve thickening, lymph node enlargement, eye or musculoskeletal deformity was observed.

Histopathology showed flattened epidermis with loss of rete ridges and collections of foamy histiocytes admixed with spindle shaped histiocytes arranged in whorls in the dermis along with numerous acid-fast bacilli. Based on characteristic clinical and histopathological features, diagnosis of 'denovo histoid leprosy, not in reaction, with no deformity and not on treament' was made. The patient was put on multibacillary multidrug therapy (MB-MDT).

Conclusion: Histoid leprosy is an uncommon variant of lepromatous leprosy. Its incidence was found to be 1.2% among all leprosy patients by Singh et al. Its rare and peculiar clinical picture makes its diagnosis challenging and may be confused with other conditions like sarcoidosis or lymphocytoma cutis, thus a high index of suspicion is required for its early diagnosis and appropriate treatment.

Keywords: Histoid leprosy, Rare variant, Clinical variant, Dapsone resistance, Spindle shaped histiocytes, Denovo histoid leprosy

#0636/ ILCABS711

CLOFAZIMINE-INDUCED CUTANEOUS HYPERPIGMENTATION: A SOURCE OF STIGMA IN PEOPLE AFFECTED BY LEPROSY

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Introduction: Cutaneous hyperpigmentation is one of the main adverse effects found in patients undergoing leprosy treatment with the use of clofazimine. This adverse effect has already been described as intolerable and linked to cases of suicide because it reveals the diagnosis and contributes to the stigmatization of these patients.

Objectives: To verify the stigma related to the disease and that linked to the change in skin color due to the adverse effect of clofazimine.

Material and Methods: A cross-sectional observational study performed in a hyperendemic area in the Brazilian Amazon region. Socioeconomic and lifestyle data were collected, followed by the assessment of disease-related stigma through the Explanatory Model Interview Catalog (EMIC-AP) and stigma related to skin color change by a structured electronic questionnaire that evaluated feelings of sadness, internalized stigma, experienced stigma and social behavior.

Results: The study included both male (25) and female (26) patients. Clofazimine-induced skin pigmentation was found in 100% of the subjects. The skin hyperpigmentation did not occur homogeneously throughout

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the body, with the face being the most affected area. The average overall score of the EMIC-AP was 18.8 points, with stigma related to the disease being higher in females. The change in skin color caused by clofazimine negatively impacted self-esteem and interpersonal relationships, contributing to the feeling of sadness of individuals of both genders.

Limitations: The COVID-19 pandemic, with mass social isolation and low clofazimine stocks at the end of 2020 and beginning of 2021, prevented the follow-up evaluations of the adverse effects during the full course of multidrug therapy.

Conclusion: Clofazimine-induced cutaneous hyperpigmentation strongly impacted the social domain and the intersectionality of disease stigma and skin color, contributing to the self-isolation of patients undergoing treatment for leprosy.

Keywords: Leprosy, Clofazimine, Skin pigmentation, Stigma

#0637/ ILCABS712

HANSEN'S IN CHILDREN: THE GREAT MASQUERADER

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Objectives: To enlighten and educate the audience about the importance of keeping Hansen's disease as a differential diagnosis in mind even in children

Method: Case Report: case 1: A 10 year old female child presented with an asymptomatic to slightly pruritic solitary plaque over her face, involving the nose and extending slightly into the left malar region, 5x4cm erythematous and mildly scaly, present since 4 months. She had visited numerous physicians and was diagnosed clinically as a dermatophyte infection (Tinea facei) and had been treated with antifungals for a month, to which she was non-responsive.

Case 2: A 12 year old female child with family history of atopic dermatitis presented with a hypopigmented patch over the left malar area measuring 2x3 cm, non erythematous, with mild scaling present, she was treated as pytiriasis alba for 6 months, due to the failure of treatment a detailed clinical and histopathological examination was done

On examination, impaired sensation over the plaque was noted in both te cases. No feeding nerves/ peripheral nerve thickening was observed. A 3.5mm punch biopsy was done from the lesions which revealed tuberculoid granulomas with peripheral lymphocytes and occasional Langhans giant cells. A slit skin smear was done which was negative

Results: The child was diagnosed as Borderline Tuberculoid Leprosy, classified as Paucibacillary and treated with the WHO Paucibacillary multidrug therapy regimen (10-14 years); the lesion began to resolve within a month of initiating treatment.

Discussion: Because of their immature immunity children are thought to be the most vulnerable to infection with Mycobacterium leprae. Leprosy can appear as an asymptomatic solitary plaque on the face that masquerades as a wide variety of diseases, however, a timely diagnosis is beneficial to both the patient and the clinician.

Keywords: Hansens in children, Mimicker, Paucibacillary

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#0638/ ILCABS718

THE IMPLEMENTATION OF SURVEILLANCE AFTER RELEASE FROM TREATMENT (POST-RFT) IN INDONESIA

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Introduction: The incidence of disabilities among leprosy patients in Indonesia remains high. In 2020, the proportion of new cases with Grade 1 and Grade 2 (G1D and G2D) disability was 18%. Even after release from treatment (RFT), many people affected by leprosy are still at risk of developing disabilities. The Indonesian national guideline on leprosy control has emphasized the need for post-RFT surveillance for 2 years in paucibacillary and 5 years in multibacillary disease, however this activity is rarely evaluated. This study aims to describe the results of post-RFT surveillance in one of the leprosy-endemic areas in Indonesia.

Description of Case: Post-RFT surveillance was conducted in 30 primary health centers (PHCs) involving patients who met the following criteria: 1) adult or child patients who have been RFT in the last 3 years and 2) who had G1D or G2D, history of reactions, nodules/infiltrates, or positive smear 3+. Leprosy health workers were trained and performed quarterly monitoring of nerve function and self-care practices either at health centers or patients' houses. An evaluation was performed one year after the implementation to assess improvements in patients' conditions.

Out of 181 RFT patients, 129 met the above criteria and were included in the post-RFT surveillance. After one year, there was a significant decrease in the number of patients with G1D (71 to 34; 52.1%), G2D (33 to 27; 18.1%), reactions (17 to 0; 100%), and wounds (7 to 2; 71.4%).

Conclusion: Post-RFT surveillance can increase the leprosy patients' participation in physical examinations and self-care training and potentially reduce the number of existing and new disabilities after being released from treatment. However, since there was no control group in the study, the observed outcomes may be attributable in part to other factors than the

Keywords: Release from treatment (RFT), Disability, Surveillance

#0639/ ILCABS741

CLINICAL STUDY OF ERYTHEMA NODOSUM LEPROSUM AT A TERTIARY CARE CENTRE- THE ENIGMA OF DENOVO ENL

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Introduction: Erythema nodosum leprosum (ENL) is a type 2 lepra reaction seen in patients with lepromatous leprosy (LL) and borderline lepromatous (BL) leprosy, characterized by recurrent crops of erythematous evanescent tender papules and nodules.

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Objectives: To study the clinical features, precipitating factors and treatment outcome of ENL.

Methods: This study was both retrospective and prospective observational study carried out in the department of Dermatology at a tertiary care centre in south India over a period of 2 years. All consecutive patients of ENL were recruited after written and informed consent. Detailed history was taken and a thorough clinical examination was done. Patients were classified clinically according to the severity and recurrences of ENL, started on appropriate treatment and followed up regularly.

Results: 35 patients were recruited of which 26 were LL Hansens and 9 were BL Hansens cases. There was a male predominance (74%). The prevalence of ENL was highest in patients of LL Hansens (49%). Patients presenting with denovo ENL was higher in our study (57.1%). Majority of them had chronic ENL (77.1%), with moderately severe episodes (60%).

Limitations: Short study duration of 2 years in a chronic disease like ENL is the major limitation of our study.

Conclusions: The striking feature in our study was denovo presentation of ENL in majority cases even before starting MDT. This observation requires confirmation by long term prospective studies. Denovo ENL to certain extent could be an indirect indication of missing cases of leprosy, wherein cases are presenting to the health care providers only when a reaction develops while the initial symptoms are being ignored by the patients or unidentified by health workers. This indicates the need for active surveillance of leprosy cases in the community in order to achieve the goal of eradication of leprosy.

Keywords: Erythema nodosum leprosum, Type 2 lepra reaction, Denovo ENL, Surveillance, Leprosy eradication

#0640/ ILCABS745

DIFFERENTIAL DIAGNOSIS OF INTRANEURAL GANGLION CYST OF THE LATERAL PERONEAL NERVE PRESENTING AS LEPROSY NERVE ABSCESS WITH FOOT DROP

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Introduction: Foot drop is caused by paralysis of the lateral peroneal nerve, which is a common complication of leprosy or trauma. An intraneural ganglion cyst is a non-neoplastic mucoid cyst of a peripheral nerve. Intraneural ganglion cysts typically lead to foot drop due to compression of nerve fascicles.

Description of the case: A 57 year old male developed right foot drop and then 2 months later developed swelling over the lateral side of the right knee. Eight months after symptoms began, he presented at a local general hospital and was diagnosed with pure neuritic leprosy and provided with MB-MDT. However, he developed nausea-like symptoms after 8 days and decided to stop taking MDT. Later, he was referred to our leprosy referral hospital.

In February 2021, the patient presented with right foot drop which was suspected due to popliteal nerve abscess. Slit skin smear for Acid Fast Bacilli was negative, and blood parameters were normal. Voluntary muscle and sensory tests (VMT-ST) revealed painful enlarged lateral popliteal nerve. Ultrasonography revealed cord-like structure in the postero-lateral aspect of the knee appearing as an inhomogeneous fusiform structure measuring about 4.05 cm x 0.69 cm which was consistent with nerve abscess of the common peroneal nerve.

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During surgical decompression, the enlarged nerve segment resembled the lumen of the intestines with a mucoid-filled cavity inside. Intraoperative nerve smear was negative for acid fast bacilli; and nerve histopathology was suggestive of mucoid degeneration of nerve forming mucoid-pseudocyst without any evidence of leprosy. Therefore, the diagnosis was changed to intraneural ganglion cyst; and oral corticosteroid and physiotherapy was initiated.

Conclusion: Confirmation of leprosy diagnosis is crucial before starting MDT though not always easy especially in pure neuritic types of leprosy. Neural ganglion cyst should be kept in mind as one of the differential diagnoses of leprosy foot drop.

Keywords: Leprosy, Nerve, Abscess, Foot drop, Ganglion cyst.

#0641/ ILCABS760

COMPARATIVE STUDY OF NON-INVASIVE DIAGNOSTIC MODALITIES & ITS CLINICAL CORRELATIONS IN THE DIAGNOSIS OF NEUROPATHY IN LEPROSY

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Introduction: Peripheral neuropathy is the most debilitating consequence of leprosy.Nerve involvement may be present much before the patient manifests clinical symptoms.The non invasive diagnostic tests i.e. Nerve Conduction Study & USG of peripheral nerve trunks may reveal the defect in the nerve before the neuropathy becomes clinically more apparent.

Objectives: To study the findings of NCS & nerve USG of all newly diagnosed Hansen's diseases and to compare it with the clinical findings so that we can find nerve impairment early.

Materials & Methods: This was an observational cross sectional study with a total of 50 patients.Patients who were newly diagnosed cases of Leprosy are registered in this study based on inclusion and exclusion criteria.

Results: The most frequent clinical forms were BT(54%) & LL(30%).Regarding the degree of disabilities 74% had Leprosy grade 0,20% had Leprosy grade 1 & 6% Leprosy grade 2.

With nerve conduction study sensory motor axonal type was the most common type of peripheral neuropathy. Nerves which are difficult to palpate clinically can be studied better for involvement i.e. MEDIAN NERVE,SURAL NERVE.In my study 4 cases have shown median and sural nerve involvement without any appreciable motor or sensory deficit clinically.

With nerve USG both upper limb & lower limb peripheral nerves showed thickening in 86% cases.

Limitations: Small sample size & no proper follow up guidelines.

Conclusion: Electrophysiology & sonography were complimentary for identification of peripheral neuropathy in leprosy.Clinically difficult to palpate nerves(median nerve & sural) can be checked for involvement using these non invasive cost effective tools in the absence of any apprent signs and symptoms of neuropathy.

Keywords: Nerve Conduction Study, Ultrasonography, Median Nerve, Sural Nerve, Ulnar nerve, Sensory-motor axonal neuropathy

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#0642/ ILCABS761

"DIMORPHIC, MID-BORDERLINE LEPROSY": A CASE REPORT OF A TRANSIENT IMMUNOLOGIC MID-POINT IN THE DISEASE SPECTRUM

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Introduction: Leprosy is a chronic, granulomatous infection caused by Mycobacterium leprae. Mid-borderline (BB) leprosy is a rare, unstable disease entity, which presents with characteristic dimorphic (admixture of tuberculoid and lepromatous features) cutaneous lesions and with variable peripheral nerve involvement.

Case report: A 48-years-old male patient had multiple, morphologically variable, red, raised skin lesions over the body for 2 months, a non-healing ulcer over the right leg for 1 month, at the time of presentation to our outpatient department. A comprehensive clinical examination revealed multiple, hypo-anesthetic, asymmetrically arranged, inverted saucer shaped plaques, annular, punched-out erythematous plaques with a well-demarcated tuberculoid inner border and a vague lepromatous outer margin and geographic lesions with irregular borders, over the trunk and limbs, and nodules over the face. Peripheral nerve examination revealed widespread and asymmetrical nerve enlargement with tenderness. Slit-skin-smear from ear lobes was positive (Bacteriological Index/BI=2+) for acid fast bacilli (AFB). Histopathological examination showed AFB, and other typical features of mid-borderline leprosy. A diagnosis of mid-borderline leprosy (BB), possibly downgrading to borderline lepromatous leprosy (BL) was made based on the above findings. The patient was started on multi-bacillary, multi-drug therapy and is now on regular follow-up with us and is showing gradual resolution of symptoms.

Conclusion: This case report highlights the occurrence of classic dimorphic lesions in a patient with a disease entity which is difficult to catch in its tracks. Accurate and prompt recognition of this transient, unstable, and uncommon form of leprosy is of paramount importance in decreasing the chances of misdiagnosis and mistreatment, thus aiding in the administration of appropriate medical therapy and physical rehabilitation, which reduces the development of irreversible deformities/disabilities and provides a better outcome for the patient.

Keywords: Dimorphic, Inverted saucer shaped plaques, Geographic lesions

#0643/ ILCABS769

HANSEN'S DISEASE MIMICKING SWEET'S SYNDROME: A CASE SERIES

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Introduction: Hansen's disease is an old known disease with a complex immunopathology and can present with a myriad of signs and symptoms.Sweet's syndrome is an inflammatory dermatosis characterised by erythmatous plaques. PATIENTS Case 1 : A 40-year-old female presented with complaints of fever with reddish raised lesions with fluid filled lesions over them on face ears scalp and bilateral arms since 1 week. Patient gave history of drug ingestion few hours prior to onset of lesions. There is no history of loss of sensation, slippage of slippers, bleeding from nose. Case 2 : A 50 year old female patient farmer by occupation came with chief complaints of reddish raised lesions with fever present on face both arms and legs and swelling over bilateral legs on and off since 1 year. No other significant drug or negative history.

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On Examination: Case 1: Multiple erythematous to violaceous plaques with few vesicles on top of the plaque present over scalp face ears and bilateral upper limbs. Suspecting sweet's syndrome, patient was started on corticosteroids & dapsone & prophylactic antibiotics. Minimal improvement was seen even after weeks of therapy. Therefore, re-examination and slit skin smear (SSS) was done. Patient was found to have hypoesthesia over bilateral hands with thickening of bilateral ulnar and lateral popliteal nerves. SSS showed multiple lepra bacilli. She was then started on Multi Drug Therapy and corticosteroids. She showed rapid response.

Case 2: Multiple erythematous plaques with few vesicles on top present over face ears and bilateral upper limbs. Suspecting sweet's, this patient was also given steroids but had minimal relief. Re-examination and biopsy and sss was done. After establishing leprosy MDT was started and the patient considerably improved within a month.

Conclusion: Type 2 lepra reaction can manifest with peculiar presentations. A simple bedside test can aid in successful management.

Keywords: Type 2 reaction, Mimickers, Slit skin smear, Sweet's syndrome

#0644/ ILCABS770

ULCERATION IN HISTOID LEPROSY: AN UNCOMMON PRESENTATION WITH TRANS-EPIDERMAL ELIMINATION OF LEPRA BACILLI

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Introduction: Histoid leprosy (HL) is an uncommon variant of multi bacillary (MB) leprosy presenting as cutaneous or subcutaneous nodules, plaque arising from apparently normal skin. Lepra reaction is very rare in HL. Herein, we report an atypical case of HL with ulceration which was associated with transepidermal elimination (TEE) of lepra bacilli.

Description: A 21year old male patient presented with multiple raised skin lesions over bilateral ears, trunk, upper arms, legs and soles for 5-6 months and with overlying ulceration for 2-3 months, which were asymptomatic and also without any systemic complaints. There was no history suggestive of similar lesions in the past. Cutaneous examination revealed multiple skin coloured, shiny, firm and non-tender plaques and nodules over bilateral ears, shoulders, extensor aspect of upper arms, forearm, elbows, legs and soles. The lesions over the left sole and ankle revealed a central ulceration with serosanguinous discharge. Multiple peripheral nerves (bilateral greater auricular, ulnar, radial cutaneous and left common peroneal nerves) were thickened, firm and non-tender. Rest of the examination were within normal limits.

On slit skin smear clusters of long, slender, acid-fast staining bacilli (AFB) were present with a bacterial index of 6+. Skin biopsy revealed dermal granulomas with spindle-shaped histiocytes in storiform pattern & foamy macrophages with no dermal edema. Ziehl-Neelsen stain revealed solid staining AFBs arranged discretely and in clumps in dermis and epidermis, suggestive of TEE of bacilli.

The patient was started on MB-Multi Drug Treatment (MDT). After one month of treatment there was complete healing of ulcer along with reduction in size of nodules.

Conclusion: Ulceration in HL is very rare. To the best of our knowledge, this is the second case where TEE of bacilli was observed as cause of ulceration in a patient with HL.

Keywords: Histoid hansen, Ulceration, Trans epidermal elimination

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THE ERA OF POSTELIMINATION : DE NOVO HISTOID LEPROSY

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Introduction : Histoid leprosy is a well recognized entity characterized by cutaneous and / or subcutaneous nodules and plaques present over an apparently normal skin with unique histopathology and characteristic bacterial morphology. **Case report :** 45 years old Male patient presented to the skin OPD with 2 years History of asymptomatic raised skin colored lesions over the chest, back, both upper limb and lower limb, buttocks, scrotum and glans penis with decreased sensation over both hands and foot. Lesions first appeared over the upper limb and progressed to involve the lower limb, back, chest, buttocks and penoscrotal region in that order. Also gave history of spontaneous ulceration of lesions over upper limb.Routine hematological investigations-Normal.Slit skin smear for Modified ZN stain for *M. leprae* – Positive for *M. leprae* bacilli, longer than normal bacilli. Bacteriological index was 6+.Treatment provided: Standard WHO MDT-MB regimen started Patient counseling regarding regular treatment, reactions to drugs and disease and also Self care instructions were given in order to prevent deformities.Contact management (chemoprophylaxis) was provided for family members- single dose Rifampicin based on the body weight of individuals. **Conclusion :**Histoid leprosy acts as a reservoir of the disease as the bacillary load is very high. Very important is survey of household contacts of histoid leprosy case and to provide chemoprophylaxis . It is very challenging for health care workers to continue surveillance for new and relapse cases in this post elimination era and provide them early diagnosis and treatment in order to prevent deformities.

Keywords: Histoid Leprosy

#0646/ ILCABS800

A CASE REPORT OF EXFOLIATIVE DERMATITIS SECONDARY TO DAPSONE IN MIDBODERLINE LEPROSY PATIENT.

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Generalised exfoliative dermatitis is an adverse drug reaction characterised by erythema and scaling involving more than 90% of body surface area. We report a case of a 63 year old male, with Midborderline leprosy who presented to our OPD in type 1 lepra reaction. AFB from the regional skin was 3+ during the first visit. Following this patient was started on MB MDT, 4th week patient presented to us with raised erythematous rash, scaling involving more than 90% of body surface area. Oral genital and ocular mucosa were normal. Investigation -Complete blood count, Liver function test, renal function test, Urine routine examination was within normal limits. Due to absence of systemic involvement, the patient was diagnosed as a case of exfoliating dermatitis and Dapsone was stopped. Rifampicin and clofazimine were continued. Following this patient improved. Improvement of the lesions on stopping dapsone further confirmed the diagnosis.There are only a handful of Dapsone induced exfoliating dermatitis cases reported previously in the literature. Hence we are planning to present a case of Dapsone induced hypersensitivity in the conference.

Keywords: Dapsone, Leprosy, Exfoliative dermatitis, Midboderline leprosy

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#0647/ ILCABS807

ATYPICAL PRESENTATIONS OF LEPROSY: A CASE SERIES

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Introduction and objective: Leprosy is a great mimic and can have variety of clinical manifestations. Apart from the common presentations which can be easily identified, atypical presentations are not rare in leprosy and they present diagnostic challenges due to decreased clinical suspicion.

Patients: We report three cases of unusual presentations of lepromatous leprosy (first one presenting with vascilitis lesions over trunk, limbs, palms and soles; second one presenting as lymphocytoma cutis like multiple erythematous asymptomatic papules and nodules; third one a postpartum female presenting as acute cutaneous lupus erythematosus like malar rash, vasculitic lesions over body, palms, soles with ulcerations at toes, palatal erythema associated with constititional symptoms i.e., autoagressive hansen) and one case of ENL presenting as appearance of multiple pseudovesicles over limbs associated with constitutional symptoms like sweet syndrome.

Result: In these circumstances, proper clinical examination with the aid of slit skin smearing, histopathology and fite faraco staining come the rescue of diagnosis.

Conclusion: These reports indicate that atypical presentations may be missed out by primary health care physicians.

Keywords: Atypical leprosy, Vasculitis like leprosy, Autoagressive hansen, Sweet like ENL, Lymphocytoma cutis like leprosy

#0648/ ILCABS811

LEPROSY THE GREAT MASQUERADER - A CASE OF LEPROSY MIMICKING RHEUMATOID ARTHRITIS

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Introduction: Leprosy is a great masquerader mimicking disease ranging from Infectious to rheumatological diseases. Musculoskeletal involvement in Hansen may manifest in the form of insidious-onset acute or chronic symmetrical polyarthritis mimicking RA, Charcot's arthropathy or swollen hands and feet syndrome during lepra reactions.

Case Report: A 22 year old female treated for rheumatoid arthritis presented with painful nodules on hands for a period of 2 years. Over the last 15 days she had started developing ulceration over the nodules with high grade fever and symmetrical joint pain over small joints of the hands.

On examination we found multiple tender erythematous nodules on the dorsa of knuckles of B/L hands involving the PIP joints, mobile partial clawing of bilateral hands. Erythematous plaques with sloping inner and outer borders over nape of neck and lower back .Decreased pain, temperature sensation over the erythematous patches and over territory of ulnar nerve.

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Neuritis in Ulnar nerve, Radial Cutaneous nerve and Common Peroneal nerve with reduced power of bilateral hands.

A provisional diagnosis of lepromatous leprosy in type 2 reaction, seronegative rheumatoid arthritis and mixed connective tissue disorder was made

Xray of hands suggested soft tissue swelling, Histopathology showed nodular lymphocytic infiltrate with tissue edema and foamy macrophages . A diagnosis of leprosy was confirmed on fite faraco staining .

Patient was started on oral corticosteroids and MBMDT to which she responded well.

Conclusion: Leprosy can present with arthritis in cases as high as 57 %. Arthritis in these cases may manifest acutely affecting small joints of hands and feet symmetrically in the so called "Rheumatoid distribution". A high degree of suspicion and thorough examination is required to avoid misdiagnosis.

Leprosy should be considered as a differential diagnosis while evaluating any case of arthritis especially in leprosy endemic areas.

Keywords: Reaction, Leprosy, Rheumatic, Rheumatoid Arthritis

#0649/ ILCABS836

A CASE OF INDETERMINATE LEPROSY PRESENTING AS NON-SPECIFIC LIMB PAIN

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Introduction: Leprosy is a chronic infectious disease caused by "Mycobacterium leprae", primarily affecting skin and peripheral nerves, manifestations range from mildest indeterminate form to severe lepromatous type depending on host immune status.

Indeterminate leprosy presents a challenge in diagnosis due to atypical features, Here we present a rare case of indeterminate leprosy who presented to neurologist with limb pain.

Case Report: A 24-years-old female patient with recurrent left shoulder pain extending till wrist since 4 months was referred to dermatology by a neurologist to rule out Hansen's disease.

Patient presented with reddish-brown patch on left arm since 15 days associated with mild itching .There was no history of tingling/numbness, epistaxis, nasal stuffiness, swelling of hands/feet or slipping of foot wear.

No history of any prior medication use, family history was unremarkable and nil comorbidities.

Cutaneous examination revealed solitary, reddish-brown patch with irregular borders of size 5*10cm. sensations including touch, temperature and pain were intact. No other hypoaesthetic/hypopigmented lesions anywhere on body.

Left ulnar and radial cutaneous were thickened but nontender.

Histopathology revealed thinned out epidermis with presence of focal grenz zone, patchy lympho-histiocytic infiltrate around adnexa and blood vessels with presence of thick nerve and fibrosis noted in lower dermis. SSS revealed Bacteriological Index (1+).

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Patient was diagnosed as Indeterminate Hansen's, not in reaction with no visible deformities and not on treatment.

Uniform Multi-Drug therapy (U-MDT) was started and she is on follow-up.

Conclusion: Diagnosing leprosy can be challenging when classic features like hypopigmented/hypoaesthetic patches or thickened nerves are missing. Although leprosy has been declared to be eliminated in India, atypical manifestation poses diagnostic challenge.

We present this case because of the atypical presentation. Hence, a high index of suspicion is necessary to diagnose such unusual presentations.

Keywords: Indeterminate leprosy, Atypical presentation, Uniform multi-drug therapy

#0650/ ILCABS843

DAPSONE HYPERSENSITIVITY SYNDROME- A RARE & POTENTIALLY LIFE-THREATENING COMPLICATION

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Introduction: Diamino diphenyl sulfone can cause several adverse effects, a rare yet potentially fatal one being dapsone hypersensitivity syndrome (DHS). Here we report a case of DHS in a 30-year-old male who presented with high-grade fever, dyspnoea and hepatitis, managed successfully with oral steroids.

Description of the case: A 30-year-old male patient initially presented with complaints of decreased sensation in the bilateral hands and feet since 1 year, an ulcer over the ankle of the left foot since 6 months.

O/E the patient had 3 hypopigmented, hypoesthetic patches over the back, decreased sensations over the bilateral hands and feet in a glove & stocking pattern and a solitary well-defined ulcer over the left medial malleolus. Detailed nerve examination revealed thickening of bilateral common peroneal nerves.

Histopathology showed a normal epidermis with an underlying Grenz zone, aggregates of histiocytes, lymphocytes in the upper and mid-dermis, around nerves, blood vessels, adnexa, suggestive of BL leprosy.

G6PD levels were normal (13.3U/gHb) and the patient was started on MB-MDT.

4 weeks after starting MDT he presented with fever, weakness, cough, dyspnoea, generalized maculopapular rash, icterus & axillary lymphadenopathy. Liver enzymes & serum bilirubin were found to be elevated (SGOT-817, SGPT 926, Total Bilirubin 9.7, conjugated bilirubin-7.3) which was suggestive of Dapsone Hypersensitivity Syndrome (DHS). MB-MDT was withdrawn and prednisolone was started. The patient showed clinical and laboratory improvement gradually. Modified-MB-MDT (dapsone replaced with ofloxacin 400mg od) was started after 6 weeks with no subsequent recurrence of rash or liver dysfunction.

Conclusion: This case highlights the importance of close monitoring of leprosy patients for potential development of Dapsone syndrome, especially in the first 2 months of starting MDT. High index of suspicion, early diagnosis and prompt treatment of Dapsone syndrome helps in prevention of mortality.

Keywords: Dapsone, DHS, Glove and stocking anesthesia

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#0651/ ILCABS844

REINFECTION OF LEPROSY AFTER MULTIDRUG THERAPY- A RARE OCCURRENCE

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Introduction: Reinfection in leprosy is a rare occurrence observed in the 21st century. This entity has to be differentiated from relapse which is a relatively common in leprosy. We report reinfection in a previously treated Hansen disease patient who has successfully completed the MB-MDT in 1987.

Case description: A 54-year-old male patient presented with multiple asymptomatic reddish raised lesions over trunk and extremities since six months. Cutaneous examination revealed numerous skin-coloured papules and nodules over the trunk, and extremities. Sensory examination showed glove-and-stocking anaesthesia over upper and lower extremities. Motor examination and systemic examination was found to be normal. Histopathological examination from one of the nodules showed features consistent with lepromatous leprosy, and bacillary index of 5+. To rule out antimicrobial resistance genetic analysis was noted and reports will be presented in the conference. He was diagnosed with borderline lepromatous leprosy 35 years ago for which he was successfully treated with MB-MDT in a tertiary care centre. The course of treatment and surveillance period was uneventful at that time.

Conclusion: Reinfection should be suspected when the time interval after release from therapy and occurrence of new lesions is beyond sufficient period of duration concordant with the incubation period of the disease, on relapse. Here we report a case of occurrence of leprosy after almost 35 years after completion of MDT with findings suggestive of reinfection.

Keywords: Reinfection, Relapse

#0652/ ILCABS854

CASE SERIES OF LEPRA REACTIONS IN HISTOID LEPROSY

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Introduction: Histoid leprosy is a variant of lepromatous leprosy and is characterised by the presence of discrete shiny dome shaped firm papules and nodules. Reactions are relatively uncommon in histoid leprosy. Two cases of histoid leprosy who developed lepra reactions during the course of treatment are described.

Objectives: To describe the lepra reactions seen in two patients of histoid leprosy.

Patients: Two young male patients who presented to the dermatology OPD were diagnosed to have Histoid leprosy on the basis of clinical features, smear positivity for AFB and histopathology. They were administered MDT(MB). The patients were followed up monthly and during the course of treatment developed lepra reactions which were then managed with anti reactional drugs.

Results: Two young male patients of age 25 years and 27 years presented with asymptomatic skin coloured papules and nodules over the body as well as multiple enlarged peripheral nerves. Slit skin smear of both the patients revealed BI of 5+. Histopathology revealed features consistent with histoid leprosy. Both the patients were started on MDT(MB). After two months of MDT, one patient developed crops of painful red

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raised lesions over extremities associated with fever and swelling of hands and feet. The patient was diagnosed to have Type 2 lepra reaction and was managed with Cap Thalidomide and Tab Prednisolone. The second patient developed sharp shooting pain down the right lower limb three months after starting MDT and on examination had evidence of neuritis in the form of tender enlarged peripheral nerves. He was diagnosed to have Type 1 lepra reaction and was managed with oral steroids.

Limitations: This is a small case series of two patients of histoid leprosy in reaction.

Conclusion: This case series highlights the reactions in histoid leprosy which is a rare occurrence.

Keywords: Histoid leprosy, Lepra reactions

#0653/ ILCABS856

LEPROSY AND SOIL-TRANSMITTED HELMINTHS PART 2: DEWORMING, MASS DRUG ADMINISTRATION (MDA) AND LEPROSY CLINICAL TRENDS

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Introduction: Chronic Soil-Transmitted Helminth (STH) infection can supress cellular immunity and, has been associated with heavily bacillated forms of leprosy. Deworming can disturb or eliminate STH-induced immune suppression. We previously reported a significant inverse association of STH co-infection in new leprosy cases presenting with leprosy reaction; whereas our subsequent larger study did not detect the association.. Both studies occurred during Nepal's first national Mass Drug Administration (MDA) campaign which was performed in graduated steps across districts from 2003-2020 and included multiple annual doses of a common dewormers, albendazole.

Objective: To determine if dewormer treatment and/or deworming MDA can be associated with leprosy indicators and clinical outcomes in leprosy cases presenting at leprosy referral services.

Methods: Retrospective chart review was performed of leprosy case presentation and demographics before, during and after MDA campaigns in their respective districts. Two focused studies sampled leprosy patients from 2012-2013 and 2016-2019 respectively using stool samples, STH multiplex qPCR and questionnaires to screen for STH co-infection and potential STH-related history.

Results: By mapping participant district origins, we found that the inverse association of STH-co-infection and reaction in new leprosy cases occurred at the peak of MDA activities in our primary catchment areas with 87% of the study cases coming from MDA-active districts. Across 2016-2019, however, only 20% of participants were presenting from MDA-active districts; while the other 80% came from post-MDA districts. Prevalence of individual STH species roughly reversed between study populations, with a decrease seen post-MDA in species sensitive to albendazole treatment. Interestingly, leprosy reaction case presentation shifted from majority TT/BT (60%) at peak MDA to majority BL/LL (60%) post-MDA.

Conclusions: Deworming at population levels may impact trends in leprosy and leprosy reaction presentation. Data analysis and mining new leprosy case demographics from medical chart archives before, during and post-MDA remains in progress.

Keywords: Leprosy, Lepra Reactions, Mass Drug Administration, Soil-transmitted helminth

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#0654/ ILCABS860

ATYPICAL PRESENTATION OF LEPROSY WITH SINGLE PLAQUE OF BORDERLINE LEPROMATOUS LEPROSY WITH ENL LESIONS

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Introduction: Localized lepromatous or borderline lepromatous leprosy is a rare presentation of multibacillary leprosy. Borderline lepromatous leprosy usually presents with many widely distributed skin lesions and peripheral nerve involvement. "Inverted saucer" was first suggested by Molesworth for lesions in borderline leprosy. Inverted saucer lesions are generally seen in borderline lepromatous leprosy. Erythema nodosum leprosum is an immune-mediated inflammatory complication affecting 50% of lepromatous leprosy patients and 10% of borderline lepromatous leprosy patients. It can occur before, during or after completion of multi-drug therapy.

Case-Report: A 22 year old male patient presented with 4 months history of a inverted saucer shaped plaque with decreased sensations present over the posterior aspect of Right arm and transient painful red nodules over bilateral upper limbs. On biopsy, thinned out epidermis with a clear grey zone and dermis shows ill-defined granulomas composed of epitheloid cells, lymphocytes, occasional gaint cells with few neutrophilic infiltrate and histiocytes were also seen and positive for Acid fast bacilli. Slit-skin smear was positive. There were no tender or enlarged nerves and no evidence of active nerve function impairment. Patient was started on treatment with multibacillary multidrug therapy and tapering doses of steroids.

Conculsion: The presentation of borderline lepromatous leprosy as a solitary plaque remains rare. Thus, it is important that the patients are classified correctly in the leprosy spectrum and treated appropriately.

Keywords: Inverted Saucer, Erythema Nodosum Leprosum, Borderline Lepromatous Leprosy

#0655/ ILCABS865

UNUSUAL MORPHOLOGICAL PRESENTATION OF SILENT LONGSTANDING LEPROSY.

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Introduction: Leprosy is a chronic granulomatous disease caused by Mycobacterium leprae, principally affecting peripheral nerves and skin. Lepromatous leprosy presents with multiple, hypopigmented macules, papules, nodules/plaques, symmetrically distributed over face, trunk and extremities. Sometimes, presentation is unusual, like a single nodule, spontaneous ulceration, histoid nodule, or remain silent until it's unmasked by Erythema Nodosum Leprosum(ENL).

Description: A 26-year-old man, working as contractor, presented with history of few persistent pink to violet(dark) coloured, asymptomatic nodules around left knee since 1month not associated with any constitutional symptoms. On examination, 5 discrete cutaneous nodules around left knee, one of them found to be cystic and had serum like fluid on aspiration. Multiple skin coloured nodules present over left thigh, abdomen which were more appreciated by palpation rather on inspection. Face, ear, upper trunk,

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upper limbs was spared. Sensory loss to touch was present over medial aspect of right forearm, right leg only. Right ulnar and popliteal nerves were thickened. SSS from both ears, anaesthetic area over right leg, nodule over left thigh were positive for *M. leprae*. SSS from fluid of the cystic lesion showed plenty of AFB with Globi in every field. Hemogram was normal. Clinical diagnosis of Lepromatous Leprosy with or without ENL was made. Histopathology report is awaited.

Conclusion: This case is unique because except for the vague anaesthetic areas there is nothing clinically to suggest Leprosy. There was no symptomatic ENL. The wide spectrum of clinical presentations of leprosy, based on bacterial load and host immunity, makes it a challenge to arrive at an accurate diagnosis. Rare morphological presentation of Multibacillary Leprosy can be missed or very commonly misdiagnosed. A high index of suspicion, thorough clinical examination and investigations like SSS, histopathology will help to avoid delay in diagnosis and resulting morbidity in such unusual cases.

Keywords: Leprosy, Lepromatous Leprosy, Erythema Nodosum Leprosum, Slit Skin Smear(SSS), Acid Fast Bacilli, Nodular Leprosy

#0656/ ILCABS866

CLINICOBACTERIOLOGICAL AND HISTOPATHOLOGICAL CORRELATION IN HANSENS

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Introduction: Leprosy or Hansens disease caused by mycobacterium leprae is a chronic granulomatous disease with a broad spectrum of clinical manifestations depending upon the immune status of the host. Ridley-Jopling criteria are used for the classification of hansens

Clinical manifestations along with bacteriological and histopathological evidence is necessary to achieve accurate diagnosis.

Objectives: To find out clinical, bacteriological and histological correlation in various presentations according to Ridley Jopling classification of hansen's disease

Materials and Methods: Cross sectional comparative study of 50 newly diagnosed leprosy patients in a tertiary care centre . Clinico bacteriological and histological data was collected and correlated.

Results: 50 patients were classified clinically as follows

7 TT; 19 BT;2 BB; 8 BL; 14 LL

5/7 TT ; 14/19 BT;2/2 BB; 6/8 BL and 14/14 of LL showed clinicopathological correlation

All cases clinically classified as TT and 12/19 cases of BT demonstrated negative SSS

All Cases clinically classified as BB; BL and LL demonstrated positive SSS

Limitations: Limited sample size

Conclusion: Combination of clinicobacteriological and histopathological factors would aid to accurately diagnose, classify the lesions and thereby effectively treat, follow up and prevent disabilities

Keywords: Hansens, Histopathology, Clinobacteriological, Correlation

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A RARE PRESENTATION OF HISTOID HANSEN : IN TYPE 1 REACTION

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Introduction: Histoid leprosy is a rare variant of lepromatous leprosy which can occur due to drug resistance or as a denovo. There are few reports of Histoid hansen with type 2 reaction but type 1 lepra reaction, driven by delayed hypersensitivity to *M. leprae* which predominantly affects borderline leprosy is rarely reported in Histoid leprosy.

Case Report: A 49 year old male presented with multiple asypmtomatic skin coloured to hyperpigmented, raised lesions over body not associated with loss of sensation since 6 months. H/o nasal bleed and stuffiness was present without anosmia.On cutaneous examination, there were multiple dome shaped shiny papules distributed over abdomen,back and extremities along with hyperpigmented xerotic plaques with adherent brownish scaling over extremities.Thickened ulnar nerves,RCN, and common peroneal nerves without tenderness were felt.Sensation for temperature, pain, crude and fine touch were intact.Dermoscopy of papules revealed peripheral rim of hyperpigmentation and crown vessels with central yellowish background. Multiple site slit skin smear showed presence of lepra bacilli. Biopsy of papule revealed Granuloma consisting of spindle shaped foamy histiocytes arranged in a storiform pattern. The patient was diagnosed as Histoid Hansen and started on MBMDT. 2 months later, patient presented with recurrent episode of fever, painful pre existing lesions and tender and fluctuant swelling over left wrist .Local USG revealed semisolid to liquid content within cavity suggestive of RCN abcess. Considering type 1 lepra reaction, patient was started on Tab Aspirin and antibiotics along with continuation of MBMDT. The abcess resolved within 1 week of starting anti inflammatory medications. He is currently on anti-leprosy therapy with regular follow up.

Conclusion: High load of lepra bacilli in Histoid hansen, makes it concern as a reservoir.This case has been presented in view of rarity of type 1 reaction in patient of Histoid Hansen reflecting change in immunological status of patient.

Keywords: Histoid hansen, Type 1 reaction, Storiform pattern, Nerve abcess, Crown vessels

#0659/ ILCABS871

A RARE CASE OF LEPROSY COINFECTION WITH HIV AND TUBERCULOSIS

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Introduction: Leprosy is a chronic infectious disease with prominent involvement of the skin and nerves that is caused by the bacillus Mycobacterium leprae. Though the awareness of leprosy and HIV coinfection is increasing worldwide, several aspects of this coinfection have not been completely understood. In patients with low CD4 count the ability to form the granuloma in leprosy is preserved(granuloma paradox).

Description: A 50-year-old man, who is a farmer, was diagnosed with pulmonary Tuberculosis and HIV coinfection 3 months back and was on ART(Tenofovir,Lamivudine,Dolutegravir) and standard ATT regimen. His CD4 count was 78cells(6%). Viral load-6,88,041/ml. Hb-7gram/dl. He presented with a history of multiple swellings over both foot, both hands since 2 months. It was associated with edema of

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hands and feet, pain and discharge from few swellings. On examination, multiple, ill defined nodules(some cystic on palaption), present over left great toe, left sole, lateral aspect of right sole, each of size 2*2cm or more, some coalesced with others. Few lesions had discharging sinus(pus/serum like fluid). Similar lesions were on fingers of both hands. Few small nodules were on right ear. Patchy areas of loss of sensation over both hands and feet was present. All peripheral nerves, eyes, mucosa were normal. SSS of the serum like fluid from the cystic swelling, both ears were positive for AFB(*M. leprae*). Histopathology confirmed as lepromatous leprosy with ENL. Fite staining showed numerous Acid Fast Bacilli(BI~5+).

Conclusion: Taken together, it is difficult to categorise the leprosy coinfection with HIV into a true coinfection or the opportunistic leprosy due to low CD4 count or ART induced Immune Reconstitution Inflammatory Syndrome(IRIS).

Keywords: Leprosy co-infection with HIV, Immune Reconstitution Inflammatory Syndrome(IRIS), Fite Staining, Erythema Nodosum Leprosum (ENL), Leprosy-Tuberculosis-HIV, Slit Skin Smear (SSS)

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NON HEALING ULCER LATER DIAGNOSED AS LEPROSY

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Introduction: Leprosy is a great mimicker. Leprosy neuropathy can present innumerable ways. In Lepra reaction, patient may present with features of inflammation such as fever, body aches, localised swelling and redness

Description of case: We report the case of 60 year old man who was referred from Department of plastic surgery to rule out dermatological causes of non healing ulcers. On asking, he revealed about multiple episodes of transient reddish raised lesions associated with fever that subsided on taking medication from local practitioner. H/o numbness in feet was present. On examination, multiple hypopigmented patches were noted on trunk. On further examination, supraciliary madarosis, bilateral glove and stocking anaesthesia was present up to mid calf. Modified Ziehl-Nielsen stain for acid fast bacilli was positive.

Conclusion: Clinicians require a high index of suspicion to diagnose such conditions which are treatable so that deformities can be avoided.

Keywords: Leprosy, Non healing ulcer, Neuropathy

#0661/ ILCABS881

TO STUDY CLINICO-PATHOLOGICAL STATUS AND INVESTIGATIVE ASPECTS OF NEW HANSEN CASES

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Introduction: Leprosy, also known as Hansen's disease, is a chronic granulomatous infection caused by Mycobacterium leprae, a slow growing obligate intracellular bacterial pathogen. It usually affects skin and peripheral nerves. The immunological component influences the occurrence of the disease, classification and the reactions that can occur. The clinical signs and symptoms aided by histopathological and immunological

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features have been the mainstay of diagnosis and classification of leprosy, but these criteria have their own limitations. There is no human infectious disease in which clinical picture is as varied as that of leprosy.1

Objectives: To assess the clinical profile of newly detected Hansen cases.

To correlate clinical profile with investigation of cases.

To find out incidence of pure neuritic leprosy among newly detected Hansen cases.

Materials and Methods: This study was conducted in newly diagnosed cases of leprosy, to study clinico-pathological status and investigative aspects in new cases.

Result: In the present study, all the patients were thoroughly examined clinically and diagnosed. Commonly observed leprosy was borderline tuberculoid (BT) in 26 (32.5%) followed by tuberculoid (TT) in 17 (21.3%), borderline lepromatous (BL) in 15 (18.7%) and lepromatous leprosy in 12 (15.0%) cases. Pure neuritic type (PNL) was seen in 10 i.e. 12.5% leprosy cases.

Conclusions: In conclusion it can be said Leprosy still continues to be a domestic, national, global burden and is present in different clinico-pathological forms. Many cases can be diagnosed clinically; especially Lepromatous pole of the disease, however, other types of leprosy pose a significant problem in clinical diagnosis. Histopathological examination of the lesions confirms the exact subtype of the disease and facilitates the institution of accurate mode of therapy. So, correlation of clinical and histopathological features along with bacteriological index is more useful for accurate typing of leprosy than considering single parameter alone.

Keywords: Clinical, Histopathology, Slit skin smear, Pure neuritic, Global burden, Correlation

#0662/ ILCABS884

AUTO AGGRESSIVE HANSENIASIS : AN UNUSUAL PRESENTATION

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Introduction: Leprosy, also known as Hansen's disease, is a chronic granulomatous disease affecting mainly the skin and nerves caused by Mycobacterium leprae. The course and clinical manifestations of the disease are largely dependent on an individual's immune response to *M. leprae*. It has long been known that numerous clinical and serological similarities exist between patients with leprosy and connective tissue diseases. These varying clinical manifestations, as well as a tendency of the disease to have a protracted course, often lead to a delay in early recognition and diagnostic confusion. We report here two cases of patients presenting with malar rash who were later diagnosed as Hansen's disease lepromatous.

Description of Case: A 45yr old male presented with acute onset fever, polyarthralgia, malar rash, and a history of photosensitivity. He had ANA positivity (1:80). He was initially diagnosed as a c/o LE but later developed numerous symmetrically distributed erythematous patches with glove and stocking hypoesthesia. On evaluation, he was confirmed to be a c/o Hansen's disease lepromatous with LE-like presentation (Auto aggressive). Similarly, another 35yr old lady presented with h/o photosensitivity and painful boggy erythematous plaques on the face which mimicked Acute LE but was later diagnosed as leprosy.

Conclusion: Auto aggressive Hanseniasis is not a common presentation. We should always have a high degree of suspicion to diagnose such cases early for better management and to prevent complications.

Keywords: Auto aggressive Hanseniasis, LE

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IMPACT OF DISABILITY DUE TO LEPROSY ON CHILD HEALTH

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Introduction: Disability prevents people from equal participation. Children with disability due to leprosy are disadvantaged. This study is focused on how the disability impacts children in all walk of life.

Objective: To access the impact of disability due to leprosy among children in health, education, accessibility, social life.

Patients / material and methods: A cross sectional study of children currently undergoing treatment in a tertiary care hospital are selected for the study. Children below age group of 15 yrs were involved in the study. A open ended questionnaire was designed to gather information of demography, type of leprosy, disability, SE status, class studied, siblings, contacts in family, education of parents, occupation of parents, Disease impact , participation restriction, treatment compliance, access to health care, Schooling, play and community activities. Interview method was used to collect data

Results: Children with leprosy having disability face discriminations physically and socially. Children could not go to school and continue their education. They lost opportunities enjoying playing with peers and social participation along with siblings and peers.

Limitations: The sample size is small that this could not be generalized.

Conclusion: More focused rehabilitation plan and early detection to be focused for children with disability due to leprosy.

Keywords: Children, Impact, Disability

#0664/ ILCABS890

DOPPELGANGER FOR HANSEN'S DISEASE

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Introduction: Hansen's disease is a chronic granulomatous disease. The diagnosis is made using the cardinal signs.

Case Report: A 21 year old male presented with asymptomatic raised lesion over left retroauricular area of 4 years duration.On examination a well defined plaque was present over left retroauricular area and left great auricular nerve was prominent.Sensations were intact over the palque.On evaluation ear lobe smear and slit skin smear were negative.A biopsy was taken from the lesion and it showed spindle cells suggestive of benign spindle neoplasm,possibly neurofibroma.Immunohistochemistry showed neoplastic cells to be s100 positive and CD 56 negative.

Conclusion: Early developing plexiform neurofibroma should be considered a differential diagnosis for Hansen's disease.

Keywords: Plexiform neurofibroma, Hansen's disease, Differential diagnosis

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SENSITIVITY OF HIGH-RESOLUTION ULTRASOUND OF NERVES IN THE DIAGNOSIS OF LEPROSY

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Examination of nerves by high-resolution ultrasonography (HRUSG) has become more common as an additional diagnostic test. This test continues to be carried out along with smear and biopsy which are the gold standard test. The objective of this study is to evaluate USG-based leprosy diagnosis in comparison to skin smears (SS) and skin biopsy (SB) results for the diagnosis of Leprosy.

Methods: Retrospective study of 50 newly diagnosed Leprosy cases were analysed for individual test sensitivities and the combination of any two tests. SS vs USG, SS vs SB and SB vs USG.

Standard published procedures were used to evaluate USG, Smear, and Biopsies. The outcome was evaluated only as Leprosy positive and Leprosy negative

Results: The sensitivity of USG alone for leprosy diagnosis was 82 % as compared to SS was 42 % and SB was 72 % showing USG as the highest sensitivity among the diagnostic tests as compared to other tests. Among any of the two tests SS vs SB positives are 72 %, SS vs USG positives are 79 % and SB vs USG positives are 85 %. In the combination of two tests, USG vs SB showed the highest sensitivity as compared to other combinations. Only 38 per cent of the cases had all three tests positive. Suggesting localised Smears/ Biopsy could have limitations whereas USG has a scope of evaluating a greater span of nerves.

At the field level, USG can definitely contribute as a singular test with or without clinical features and can be considered for contact screening. This study recommends the importance of concomitant evaluation of all three diagnostic tests along with any other field-friendly *M. leprae* PCR for future application.

Conclusion: USG contributes to the diagnosis of Leprosy and has a higher sensitivity than skin biopsy or skin smear.

Keywords: Ultrasonography, Smear, Biopsy, Retrospective

#0666/ ILCABS893

SCLEROMALACIA PERFORANS- A RARE AND SIGHT-THREATENING COMPLICATION OF CHRONIC ERYTHEMA NODOSUM LEPROSUM

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Introduction: Leprosy is a chronic disorder afflicting the nerves, skin and the eyes predominantly, caused by Mycobacterium leprae, an acid-fast bacillus. In addition to the complications caused by disease per se, reactions in leprosy present with a wide array of clinical features and unfavorable consequences.

Description of case: A 35-year-old female patient with no known comorbidities presented to us with multiple pustular and necrotic ulcerative lesions were present over the trunk and the extensor aspects of

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upper as well as the lower extremities. Her bacillary index was 6+. Histopathological features revealed that of lepromatous leprosy with erythema nodosum leprosum (ENL)

Considering her diagnosis, treatment with MB-MDT and oral corticosteroids was commenced. After few months, she reported gradual painless deterioration of her vision describing it as a curtain falling over her eyes. Ophthalmological evaluation by the means of a slit lamp revealed scleral thinning with bluish-grey discoloration and a prominence of scleral vessels in both eyes, with right eye being more severely affected. Fundoscopic examination showed the presence of exudative retinal detachment in both the eyes. Owing to her high IOP, it was advised to defer steroids and she was started on high dose clofazimine therapy for the management of her reaction.

Conclusion: Ophthalmological complications related to leprosy and type 2 reaction principally constitute lagopthalmos, corneal ulceration, iridocyclitis and exposure keratitis. Scleromalacia due to chronic anterior uveitis and exudative retinal detachment secondary to chronic ENL have not been described in literature. We hypothesize that scleral thinning seen in our patient could be due to infiltration of sclera secondary to reaction causing necrosis and damage to the underlying scleral tissue. Such complications are potentially sight threatening and a high degree of suspicion is needed to look for such complications and managing them promptly in order to prevent visual handicap.

Keywords: Leprosy, Type 2 lepra reaction, Erythema nodosum leprosum, Scleromalacia

#0667/ ILCABS894

SCREENING OF HEALTH STATUS OF CHILDREN LIVING IN LEPROSY COLONIES

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Introduction: Children living in some leprosy colonies are often neglected since it is perceived as they receive good health care and food. But they leprosy colonies which are neglected and forgotton. More often the screening is done for leprosy but the hgeneral health status are ignored which ca ne compromised due to the consequences of leprosy. An effort is made to screen and assess the health status of children living in leprosy colony who may be self affected of dependents of people affected by leprosy

Objective: To assess the health status and to do screening of children living in 3 leprosy colonies in the District of Ayodhya, Uttar Pradesh

Methods: About 25 children aged 15 and below from 3 leprosy colonies were clinically examined for systems, nutritional status, general health, leprosy screening, immunization status, BCG Vaccinaiton.

Result: 2 Children were newly detected to have leprosy, started on MDT. 1 child had skin smear positive. About 25 % of children were malnorished. Immunization schedule is not followed the children. 2 children discontinued schooling due to stigma.

Limitation: Screening and examinaiton done in only 3 colonies

Conclusion: Children at leprosy colony are at high risk of acquiring leprosy due to consistant travelling of people within different leprosy colonies. Regular screening and health check up for children need to be done in colonies due to the risk of disease due to hygiene, poverty and transmission

Keywords: Children, Leprosy colony, Health status, Screening

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#0668/ ILCABS902

ERYTHEMA NODOSUM LEPROSUM IN HISTOID HANSEN'S : AN UNUSUAL PRESENTATION

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Introduction: Histoid Hansen's presents as cutaneous or subcutaneous nodules and plaques on apparently normal skin. Reactions are rare in histoid Hansen's. Hence,we present a case of erythema nodosum leprosum (ENL) in histoid Hansen's 6 months after completion of multibacillary multidrug therapy (MB-MDT).

Case Report: A 28-year-old male patient presented with multiple, painful, red, raised skin lesions over both upperlimbs, lowerlimbs and trunk since 6 months associated with fever. Skin lesions initially started over right forearm and gradually progressed to other areas of body. He was diagnosed with histoid Hansen's 2years back and had taken MB-MDT for 1year. On cutaneous examination multiple, ill-defined, erythematous, tender cutaneous and subcutaneous nodules and plaques of size 1x1cm to 3x2cm on erythematous skin were seen over both upperlimbs, lowerlimbs, trunk and back. Multiple, discrete, shiny, firm, skin coloured, cutaneous nodules and plaques of size 0.5x0.8cm to 1x1cm present over normal skin were seen over both upper limbs, lower limbs and trunk. Bilateral ulnar and radial cutaneous nerves were thickened and tender. Skin biopsy taken from the shiny nodule on normal skin showed features of histoid Hansen's. Skin biopsy from the painful tender nodule showed dense dermal inflammatory infiltrate of neutrophils, histiocytes, epitheloid like cells , lymphocytes in periadnexal, perivascular and perineural areas and acid fast bacilli were seen on Ziehl-Neelsen stain suggestive of ENL.

Conclusion: ENL reactions are well known in leprosy but very few case reports are seen in histoid Hansen's. So, one should be aware of the ENL reactions, which occur not only in lepromatous spectrum of leprosy but also rarely in histoid Hansen's.

Keywords: Erythema Nodosum Leprosum, Histoid Hansen's, Cutaneous nodules, Plaques

#0669/ ILCABS903

LEPROSY LIKE LUPUS OR LUPUS LIKE LEPROSY: A VEXED QUESTION.

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Introduction: Different manifestations of leprosy are known since time immemorial. Still, in today's era, newer and atypical presentation never fails to surprise us with new bizarre and confounding clinical presentations differing from cardinal signs leading to delayed diagnosis and treatment. Herein, we report a patient who was initially suspected as a case of Lupus erythematosus at first but later on proven as a case of Hansen disease.

Description of Case: Patient presented with malar rash associated with photosensitivity along with fever, joint paint, and oral ulcers. On evaluation, he was found to be weakly ANA positive along with anemia. Thinking of systemic lupus erythematosus, anti-ds DNA and anti-smith antibody were done. Both tests were negative. Surprisingly, the patient complained of tingling sensation along extremities along with which his lesions tend to become erythematous and oedematous along with leucocytosis. just to rule out Hansen examination was done on the patient, following which the patient was found to have hypoesthesia over palms and soles along with grade 2 ulnar nerve thickening and neuritis. Patient Slit skin smear was sent which came out to be 4 + and histopathology was consistent with borderline lepromatous Hansen in type 1 reaction.

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Fite-faraco stain was positive. Oral ulcer margin slit skin smear was also positive. The patient was found to be a case of Hansen disease and was started on MB-MDT along with steroids. within days patient lesion tend to decrease with a reduction in erythema and edema. Systemic symptoms were also in the resolution phase.

Conclusions: Diagnosis of Hansen disease needs a keen suspicion of the disease and clinicians need to be more vigilant to detect cases with unusual presentations.

Keywords: Atypical Leprosy, Lupus like Hansen

#0670/ ILCABS905

ERYTHEMA NECROTICANS WITH HBSAG HEPATITIS : A RARE REACTION PATTERN IN LEPROSY

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Introduction: Erythema nodosum Leprosum (ENL) is an immune complex-mediated type-2 reaction in multibacillary leprosy. Severe ENL can become vesicular or bullous and break-down to ulcerate and is termed erythema necroticans.

Case Report: A 35-year old male came with multiple, painful, erythematous raised lesions and ulcerations over face, upper limbs, abdomen, chest, back, legs for one month. On examination multiple ill-defined hypopigmented hypoaesthetic patches of varying sizes present over back and buttocks. Multiple bilateral symmetrical erythematous plaques and nodules of varying sizes are present over face, extremities, trunk and abdomen.Multiple pustules and punched out painful large ulcers were seen over lesions.Bilateral ulnar, radial cutaneous, lateral popliteal nerves were thickened and tender.Slit skin smears from earlobes and ulcers showed clumps of leprabacilli. Investigations revealed raised liver enzymes. HBsAg was positive.Histopathology was suggestive of erythema nodosum leprosum necroticans. Multidrug therapy,40 mg of prednisolone along with tenofovir 300 mg once daily were started.With in a week, all the ulcers healed, pustules subsided and there were no new lesions. Erythema necroticans usually occurs during treatment. Here, it has occurred with out any prior treatment in an individual, who is unaware of the disease.

Conclusion: Association of Heapatitis B poses challenge in the management as it may cause fulminant hepatic necrosis. Hence administration of Tenofovir is essential in HBsAg positive Erythema Necroticans.

Conflict of Interest: No

Keywords: #erythemanecroticans #leprosy #leprosyreactions #erythemanodosumleprosum #Tenofovir

#0671/ ILCABS913

A CASE OF RECURRENT TYPE 1 LEPRA REACTION- A CONTINUING BANE IN POST ELIMINATION ERA.

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Introduction: All though leprosy has been eliminated in India, undiagnosed cases of leprosy, especially borderline types continue to be seen, which are common cause of deformities in leprosy. Here we present a case of recurrent type-1 Lepra Reaction which is a risk factor for deformities.

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Description of case: A 29-year-old female, diagnosed as Borderline Tuberculoid Leprosy, who was on modified MB-MDT (Rifampicin, Clofazimine and Ofloxacin, due to dapsone hypersensitivity) since 7 months, presented with recurrent pain and swelling of left hand since 6 months. Pain was felt in left upper limb extending from shoulder to hand, along with redness and swelling of left hand, which continued for next 6 months, till date. The episodes were associated with fever, weakness and joint pains.

Cutaneous examination revealed diffuse erythema and mild swelling on left hand. Left ulnar and medial cutaneous nerve were thickened and tender. There were no hypopigmented/ hypo aesthetic skin lesions anywhere else on the body or no motor weakness and no visible deformities.

The patient was diagnosed as Borderline Tuberculoid Hansen's with type 1 reaction on modified MB-MDT and no deformities.

Type 1 reaction was treated with gradually tapering dose of prednisolone and supportive therapy. Initially there was partial response and substantial improvement took prolonged course of treatment over 6 months.

Conclusion: Even in post elimination era, many leprosy cases are presenting to dermatologists. Many of these cases are in the borderline spectrum who develop type 1 reaction, a major risk factor for developing deformities. This case is being reported due to its recurrent and persistent nature of type 1 lepra reaction, which puts the patient at greater risk of developing deformity and also occurrence of dapsone syndrome in this patient.

Keywords: Borderline Tuberculoid, Dapsone Hypersensitivity, Type 1 Lepra reaction.

#0672/ ILCABS916

UNUSUAL CLINICAL PRESENTATIONS IN LEPROSY

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. It is a great mimicker and can have varied clinical presentations which can delay diagnosis. In such circumstances, histopathology can help in aiding accurate diagnosis. It can resemble other dermatoses such as Psoriasis Vulgaris, urticaria, lupus vulgaris, and sarcoidosis.

Objectives: To highlight that leprosy can have many varied and unusual presentations.

Patients:

CASE 1: A 23-year-old male with 10 days history presented with multiple nodules in a sporotrichoid pattern noted over the left forearm. On the next visit, he presented with multiple erythematous edematous tender plaques over the face, nose, lips, thighs, and back. Differential diagnosis considered were deep fungal infections, sporotrichosis, and granulomatous type of CTCL. But on the next visit, the unusual presentation led to clinical confusion. Biopsy aided in the diagnosis of mid borderline(BB) leprosy. Peripheral nerves were thickened and tender. The patient was started on Multidrug therapy for leprosy.

CASE 2: A 40-year-old male patient presented with multiple erythematous plaques, few of them associated with scaling surrounded by an erythematous border for 2 months over the chest, abdomen, B/L arms, back, and thighs. Clinical presentation of the lesions resembled dermatophytosis but a biopsy revealed the presence of a mid-borderline leprosy. The patient was then started on Multidrug therapy for leprosy.

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Results: Of the 2 cases above, the age group was between 20- 50 years, both were males, in mid borderline leprosy spectrum and in reaction.

Limitations: The sample size was less.

The study was conducted at only a tertiary center.

Conclusion: This case has been reported to highlight that leprosy can have varied presentations and a high degree of clinical suspicion is needed for diagnosis. Histopathological examination is indispensable in diagnosis.

Keywords: Leprosy, Mimicker, Sporotrichoid, Dermatophytosis, Histopathology

#0673/ ILCABS928

DE NOVO HISTOID LEPROSY MIMICKING NODULAR AMYLOIDOSIS

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Introduction: Leprosy is considered the 'greatest mimicker' caused by acid fast rod shaped bacillus mycobacterial leprae mainly involving skin and peripheral nerves.

Description: We describe a case of a 55 year old male presenting to the OPD with 10 year history of waxy soft skin coloured papules over extensor aspect. Lesions were asymptomatic. On examination tumid discrete to confluent papules of size 0.3cm to 2 cm over back, buttock, inner aspect of forearms. Patient was investigated for amyloidosis, sarcoidosis and leprosy. Slit skin smear was positive and skin biopsy was suggestive of histoid leprosy. He was started on multi drug therapy and responded well.

Conclusion: Prevalence of leprosy is highly variable with cases clustered in developing world. At times patients may have atypical presentation without any prior risk factor or typical history causing diagnostic dilemma.

Keywords: Histoid leprosy, Nodular amyloidosis, Diagnostic dilemma

#0674/ ILCABS933

ERYTHEMA-MULTIFORME LIKE REACTIONS IN LEPROSY

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Introduction: The clinical course of leprosy is often interrupted by reactions, which are acute inflammatory episodes that can be classified as type I or type II. Type II reactions can present as cutaneous lesions that resemble erythema multiforme (EM). EM is classically associated with drug allergies or pre-existing viral infections. However, the differential diagnostic criteria of the diverse causative agents remain controversial.

Case report: A 45 year old patient presented to the out patient department with multiple erythematous papules to papulo-plaques with a dusky centre. On further examination, the patient also had glove and stocking anesthesia and peripheral nerve enlargement. Slit skin smear was performed and it was positive

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for acid-fast bacilli. A diagnosis of lepromatous leprosy with ENL presenting as erythema multiforme like reaction was made and the patient was started on treatment.

Discussion: Erythema multiforme (EM)-like erythema nodosum leprosum (ENL) is a rare atypical presentation. It is pertinent to know this rare presentation of ENL as it will help in early diagnosis and management of the patients and will prevent mis-diagnosis of such patients.

Keywords: ENL, Erythema multiforme, Leprosy

#0675/ ILCABS934

MIMICKERS OF LEPRA REACTIONS: A CASE SERIES

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Introduction: Acute change in the immune response to the mycobacterium lepra antigen results in reactions. Reactions can be the first presentation of Hansen's disease but sometimes they mimic other dermatological diseases leading to diagnostic confusion. Here, we wish to discuss such cases.

Cases:

(1) An older woman presented with acute onset of mildly painful erythematous edematous plaque over the forehead and left side of the face. The differential of BT Hansen with Type 1 lepra reaction was kept. The slit skin smear was negative. ANA was positive and biopsy was suggestive of lupus tumidus.

(2) An old lady presented with solitary nodular erythematous swelling over the left eyelid. The differential of BT Hansen with Type 1 lepra reaction was kept. Slit skin smear was negative for acid-fast bacilli but showed numerous Leishman Donovan bodies suggestive of cutaneous leishmaniasis.

(3) A young woman presented with acute onset of multiple erythematous oedematous painful noduloplaque lesions over the chest, upper extremities and both palms. She was febrile and had arthritis. Biopsy was suggestive of Sweet syndrome.

(4) A young male presented with multiple itchy noduloplaque lesions over back, chest, and extensors of upper arms along with uveitis and arthralgias. The differential of Type 2 Lepra reaction was considered. Slit skin smear was negative for acid-fast bacilli. Biopsy showed dense inflammatory aggregates perivascular and perineural with many plasma cells. RPR and TPHA were positive. CSF TPHA and HIV was also positive. The patient was diagnosed as a case of neurosyphilis with HIV.

Conclusion: Reactions in leprosy can mimic numerous dermatological diseases out of which few may have severe or life-threatening implications. Awareness and keeping high suspicion are critical to avoid unnecessary treatment of leprosy and its reactions in such scenarios.

Keywords: Lepra reaction, Granulomatous diseases

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#0676/ ILCABS946

A CASE REPORT OF A LEPROMATOUS LEPER WITH SCALP SQUAMOUS CELL CARCINOMA TREATED BY ACITRETIN

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Introduction: Cutaneous squamous cell carcinoma often occurs at the site of exposure (such as Scalp, the back of hand). The scalp of lepromatous leper without the protection of their hair is more likely to get cancer with long-term UV exposure. Surgery is the preferred treatment for cancer, but it is not suitable for the aged patient with extensive rash. It is reported that skin squamous cell carcinoma has been successfully treated off with acitretin. We gave oral acitretin to treat her cancer with the agreement of her and her son. After 4 months the therapy had demonstrated excellent efficacy and was very safe.

Description of the case: A 62-year-old female with the whole bald scalp caused by leprosy for more than 40 years. There were multiple ulcers and plaques in the scalp for 2 years. Physical examination revealed a 4cm×4cm infiltrative plaque on the top head with an ulcer about 0.6cm × 0.6cm covered by blood crust. The top scalp became atrophying and thinning and was scattered by several superficial small ulcers covered by light yellow scabs. Histopathological examination showed squamous cell carcinoma masses and nuclear abnormalities, and immunohistochemistry showed P40 was positive, and GCDFP-15, CD15, AR were negative, which revealed the diagnosis of squamous cell carcinoma. The patient took oral acitretin therapy, 10mg Bid. After 4 months, all the lesions markedly improved and some lesions completely subsided.

Conclusion: Acitretin is safe and effective to treat aged leper with cutaneous squamous cell carcinoma, but more cases are needed for further validation.

Keywords: Leper, Acitretin, Squamous cell carcinoma

#0677/ ILCABS956

TATTOO INDUCED LEPROSY

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Leprosy is caused by Mycobacterium leprae bacillus and despite application of multidrug therapy (MDT) by World Health Organisation in 1981 and elimination programme in various countries; disease still prevails in several developing countries such as Africa, Asia and South America annually. Leprosy comprises of a broad range of clinical manifestations from tuberculoid (TT) pole to lepromatous leprosy (LL) pole. Tattooing was popular among many ethnic minorities and Han Chinese (the major ethnic group) for spiritual and decorative purposes in China since ancient time. Although transmission of infectious diseases through tattooing is well known, there have been occasional reports of the association of leprosy and tattooing. We presents the two leprosy cases induced

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by tattoo, both had ornamental tattooing done by Hawker stalls tattoo artists with unsterile needles for tattooing . The duration between appearance of first lesion and tattooing varied from 4 to 20 years. Both of two cases were BL and from two different cities, one was from high endemic area of southwestern of China and the other from low endemic area of north-eastern of China. One cases was nineteen years old and the other fifty years .The two cases were confirmed diagnosis with bacteriology, histopathology, molecular methods and sera test. The present report supports the hypothesis of transmission of leprosy through tattoo.

Keywords: Leprosy, Tattoo, China, Induced, Detection

#0678/ ILCABS963

TUBERCULOID LEPROSY MASQUERADING AS OROFACIAL GRANULOMATOSIS

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Introduction: As a special infectious disease, leprosy has a variety of clinical manifestations, often causing difficulties in diagnosis. Orofacial granulomatosis (OFG) is a rare chronic granulomatous disease with multifactorial etiology and pathogenesis, usually manifested as persistent and/or recurrent swelling, which may involve one or two lips and / or recurrent ulcer and other orofacial features. We report a case of tuberculoid leprosy misdiagnosed as OFG to help clinicians raise awareness of the manifestations of leprosy involving the labial site.

Description of the case/issue: A 43-year-old male had swelling of lower lip and red plaque on the right jaw for 4 months without obvious pain. The patient was initially diagnosed with OFG and was treated with oral glucocorticoid without improvement. Pathological examination showed the infiltration of epitheloid cells, lymphocytes and multinucleated giant cells around blood vessels and appendages in the dermis. Polymerase chain reaction(PCR) showed that Mycobacterium leprae DNA was positive. The patient was finally diagnosed as tuberculoid leprosy, and the skin lesions basically subsided after one month of WHO multidrug therapy(MDT) regimen.

Conclusion: OFG may be an atypical and rare manifestation of leprosy. The possibility of leprosy should always be considered in the differential diagnosis of unexplained OFG. The final diagnosis depends on clinical manifestations, histopathological results and relevant laboratory examinations.

Keywords: Tuberculoid leprosy, Orofacial granulomatosis, Pathological examination

#0679/ ILCABS966

TINNITUS AND DEAFNESS: RARE MANIFESTATIONS OF ADVERSE DRUG REACTIONS TO DAPSONE: REPORT OF TWO CASES

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Introduction: Dapsone (DDS), as a basic drug of multi-drug-therapy (MDT), is a common drug for the treatment of leprosy. Although most patients respond well to conventional treatments, a small number still experience adverse drug reactions (ADRs), even dapsone hypersensitivity syndrome. We here report two rare cases of adverse reactions caused by Dapsone with deafness and tinnitus.

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Description of the cases: Both patients were female, one is 42-year-old, and the other is 44-year-old. They were all diagnosed with lepromatous leprosy. Both of them developed tinnitus after MDT (20 and 15 days after treatment, respectively), and one of them even experienced hearing loss. Considering the relationship between the time of symptom occurrence and the use of multi-drug-therapy, the hearing symptoms of both patients were considered to be caused by DDS. After discontinuation of DDS, supportive treatment was given, and hearing symptoms subsided within 10 and 12 days, respectively. After DDS removal and chlorphenhydrazine alone, both patients did not develop any further symptoms of hearing.

Conclusion: The common dapsone ADRs present were jaundice, exfoliative dermatitis, and hemolytic anemia in MDT-treated patients. However, DDS can also cause damage to the peripheral nervous system. However, reports of cranial neurotoxicity are rare. Our findings from the two cases highlight that tinnitus and hearing loss is a potential rare adverse effect that should be considered in patients prescribed DDS.

Keywords: Leprosy, Tinnitus, Deafness, Hearing loss, Dapsone, Adverse drug reactions

#0680/ ILCABS967

NODULAR MELANOMA IN TROPHIC ULCERATION OF A LEPROSY PATIENT: A CASE STUDY

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Introduction: Non-healing chronic trophic ulceration is very common in leprosy patients. Marjolin's ulcer consists of the malignant transformation of a chronic ulcerative lesion. Nodular melanoma developing from Marjolin's ulcer, caused by a trophic ulceration of a leprosy patient, is very rare with only a few cases reported in the literature. Due to the disguised presentation of these malignancies within trophic ulceration lesions in leprosy, neoplastic transformation is frequently overlooked, leading to misdiagnosed and delayed treatment.

Description of the cases: This paper reports a case of an 83-year-old man with lepromatous leprosy and chronic ulceration on the foot for 22 years. Over a period of 2 months, the ulcer enlarged, turned black, and became more painful. The patient underwent regional excision and immunotherapy after the diagnosis of malignant nodular melanoma. After 9 months follow-up, no metastasis was found.

Conclusion: Nodular melanoma developing from Marjolin's ulcer caused by leprosy trophic ulcer is a rare but an aggressive malignancy with early metastasis. Marjolin's ulcer is often unrecognized, which delays treatment and leads to poor prognosis. If a chronic nonhealing ulcer is seen, Marjolin's ulcer should be highly suspected.

Keywords: Leprosy, Trophic ulceration, Nodular melanoma

#0681/ ILCABS968

A RARE CASE OF TYPE 1 LEPROSY REACTIONS FOLLOWING TETANUS INFECTION IN A BORDERLINE TUBERCULOID LEPROSY PATIENT AND A LITERATURE REVIEW

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Introduction: Type 1 leprosy reaction, also known as "reversal reaction", is related to cellular immune responses to Mycobacterium leprae antigens. The risk factors that trigger type 1 leprosy reactions are poorly

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understood. Leprosy with concurrent tetanus is rare, and there are no publicly available reports of a leprosy patient infected with tetanus that induced type 1 leprosy reactions.

Description of the cases: A 56-year-old Chinese Han female presented to our hospital with symptoms of erythematous plaques and pain over her left upper limb for 2 days and foreign object sensation in her throat for 3 days. The patient had a 6-year history of leprosy. Type 1 leprosy reactions were initially considered, followed by treatment with methylprednisolone. Two days later, the patient's symptoms were aggravated, with neck muscle tension and difficulty in opening her mouth, and the erythematous plaques had spread over most of her left upper limb. After further careful examinations, we confirmed the diagnosis of tetanus with concurrent type 1 leprosy reactions. The patient was given anti-tetanus treatment for 12 days and anti-leprosy reaction treatment for 4 months; the diseases were eventually controlled

Conclusion: This report first demonstrates a rare case of type 1 leprosy reactions following tetanus infection, suggesting that tetanus infection may be a trigger for type 1 leprosy reactions."

Keywords: Type 1 leprosy reactions, Tetanus, Trigger

#0682/ ILCABS990

A CASE OF HIGHLY DIFFERENTIATED SQUAMOUS CELL CARCINOMA SECONDARY TO NEUROVASCULAR DYSTROPHIC LEPROSY ULCER

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Malignant transformation of chronic trophic ulcers in leprosy is not rare as it had been considered to be in the past. We described a case of 77-year-old man diagnosed as lepromatous leprosy (LL) fifty-eight years ago, and skin ulcer initially occurred on the sole of right foot because of neurovascular dystrophic and had been existing during the last five decades, which had gradually grown into a "cauliflower-like" tumor with mild pain and spontaneous bleeding over last 3 years. None improvement was achieved after oral antibiotic and topical treatment.

The patient underwent tumor excision and four toes amputation after the diagnosis of SCC based on lesion histopathologic examination. After 1 year follow-up, no metastasis was found.

Keywords: Leprosy, Ulcer, Squamous cell carcinoma, Anesthetic foot

#0683/ ILCABS1009

ESTABLISHMENT AND APPLICATION OF CLINICAL PATHWAY FOR EARLY DIAGNOSIS OF NEUROLOGIC LEPROSY PATIENTS IN LOW PREVALENCE REGION-A PROSPECTIVE STUDY BASED ON EVIDENCE-BASED MEDICINE

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Introduction: In post-elimination era, the active case findings strategy is not suitable, and early diagnosis of neurotic leprosy cases is still challenging. Multi strategies to improve the accuracy of neurotic leprosy cases

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diagnoses throughout the clinical pathway (CP) are needed to avoid the delayed diagnosis or misdiagnosis, and reduce the burden of deformity and disability.

Objective: To establish and apply the CP of neurologic leprosy cases.

Patients / material and methods: The characteristics of nerve impairment and deformity of leprosy was illuminated, and the training was focused on the dermatologists and neurologists. To improve early detection of leprosy cases, symptom monitoring, leprosy symptoms and signs, laboratory test, and early diagnosis technology were integrated by the leprosy control and prevention specialists into a CP, and the effectiveness of CP was assessed.

Results: Before CP (2008-2017), 4 suspicious neurological leprosy cases were referral from neurology department and confirm diagnosed as leprosy cases, while after CP, 15 suspected leprosy cases were screened, confirmed diagnosis of leprosy for 13 cases, suspected as relapsed leprosy for 1 case, suspected as leprosy for 1 case. The number of cases referral from neurology doubled (8 vs 4), and the number of referral hospitals quadrupled(4 vs 1). The PNL was found in 23.07% (3/13) cases, and the diagnosis intervals of PNL were as short as 1.5 month. Despite the positive results of AFB, histopathology, and serology test were only found in 23.07%, 30.77%, and 38.46%, respectively, the molecular test achieved 100.00% positive results of confirmed leprosy cases.

Conclusions and Relevance: The CP was suitable for low endemic status of leprosy. Further study of neurologic leprosy cases is warranted

Keywords: Neurologic leprosy

#0684/ ILCABS1010

PRESENTING SYMPTOMS OF LEPROSY AT DIAGNOSIS: CLINICAL EVIDENCE FROM A CROSS-SECTIONAL, POPULATION-BASED STUDY

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Introduction: Leprosy is associated with different dermatologic and neurologic manifestations with a wide clinical spectrum, posing a great diagnostic challenge.

Objective: To identify associations between common presenting symptoms of leprosy and stage at diagnosis.

Patients / material and methods: In this cross-sectional study, we analyzed population-level data from main complaint of newly detected leprosy cases.

Results: The data of 2125 newly detected leprosy patients, with 5000 symptoms, were analyzed. Numbness, erythema, Painless and non-pruritic skin lesions, eyebrow hair loss, and tubercles were common symptoms of leprosy. Despite low proportions, formic sensation, pain , pruritus , finger contracture, muscle atrophy, and motor dysfunction were reported during the diagnosis of leprosy. The proportions of skin, skin and nerve, and nerve symptoms as the initial symptoms were 33.25%, 44.95%, and 21.80% and as the only symptoms were 28.66%, 57.81%, and 13.91%, respectively. In those with physical disability, nerve symptoms were the most frequent symptoms (57.65% and 65.36% for the initial and only symptoms, respectively) compared with skin and skin and nerve symptoms. In the delayed diagnosis group, nerve symptoms were the most frequent symptoms and were associated with the longest diagnostic intervals (mean±SD: 38.88 ±46.02 and

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40.35±49.36 months for initial and only symptoms, respectively) when compared with skin and skin and nerve symptoms.

Understanding the nature of presenting symptoms and developing symptom awareness campaigns would improve the level of leprosy awareness in the community. Increasing awareness of nerve symptoms, focusing on individuals with nerve symptoms at neurology outpatient visits, and holding focused training for medical staff specializing in neurology would enhance the capacity of the health system to recognize leprosy early.

Keywords: Leprosy

#0685/ ILCABS1012

LEPROMATOUS LEPROSY WITH TYPE - LEPROSY REACTION:A CASE REPORT

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A 64-year-old female presented with anaphalantiasis and diffuse distributed erythema for more than 6 months.Dermatology examination: the facial skin is diffusely infiltrated and shiny, with dark brown papules and nodules scattered on the trunk and limbs, and bilateral great auricular nerves are palpable and thick. Right facial paralysis, shallow right nasolabial fold, anaesthesia of both soles and left palm, paralyzed left little finger and left thumb. The bacterial index(BI) of skin slit smears for Acid-fast staining was 5.30. Histopathology: no infiltration zone was formed under the epidermis, granuloma of superficial dermis and fat layer, infiltration of lymphocytes, plasma cells and foam cells, necrosis of collagen fiber lesions and infiltration of neutrophils. Diagnosis: lepromatous leprosy with type - leprosy reaction. MDT-MB was initiated.

Keywords: Lepromatous leprosy, Type - leprosy reaction

#0686/ ILCABS1015

LEPROSY UNMASKED BY COVID-19 VACCINATION

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Leprosy is a chronic infectious disease caused by Mycobacterium leprae, and it remains an important health problem in developing countries. The response of host immunity against *M. leprae* could lead to various clinical manifestations. In the context of the COVID-19 pandemic, people including unidentified leprosy patients will receive the COVID-19 vaccination. Here we described two cases of borderline tuberculoid leprosy unmasked by COVID-19 vaccination.

Case One: A 58-year-old Chinese man was admitted with asymptomatic reddish plaques on his face, trunk, and limbs. He had a ten-year history of erythema on his back. Two months before, he developed symptoms five days after receiving the first dose of the COVID-19 vaccination. Histopathological findings revealed epithelioid granuloma. A positive stain for acid-fast bacilli suggested *M. leprae* infection, which was confirmed by real-time PCR. According to the Ridley-Jopling classification, the diagnosis of borderline tuberculoid leprosy with type 1 leprosy reaction (downgrading T1R) was made.

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Case Two: A 54-year-old Chinese woman who had erythema on her chest with pain for two months was admitted. She developed symptoms 50 days after receiving the second dose of the COVID-19 vaccination. On examination, she was noted to have erythema annulare of the chest. Histopathological finding revealed epithelioid granuloma and *M. leprae* infection was confirmed by droplet digital PCR. The diagnosis of borderline tuberculoid leprosy with type 1 leprosy reaction was made. After the patient received rifampin, dapsone, and methylprednisolone, she had marked improvement of symptoms. However, she developed erythema on her face 15 days after receiving the third dose of COVID-19 vaccination. After adalimumab treatment, the pain and erythema were improved.

Given the temporal relationship with COVID-19 vaccination, these two patients were likely unmasked by the COVID-19 vaccine.

Keywords: Leprosy, COVID-19 vaccination

#0687/ ILCABS1038

SCREENING OF DIFFERENTIALLY EXPRESSED GENES IN CD4+ T CELLS IN PERIPHERAL BLOOD OF 45 LEPROSY PATIENTS

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Objective: To detect the mRNA expression profile of CD4+ T cells in peripheral blood of patients with leprosy, and to screen and verify the genes that may be closely related to the pathogenesis of leprosy.

Methods: From July 2018 to May 2020, 45 leprosy patients and 45 healthy people were collected in Hunan Province, and peripheral blood CD4+ T cells were isolated by magnetic bead method, and RNA was extracted. Among the above subjects, 6 patients and 6 healthy people were randomly selected, and Solexa sequencing was used to screen the differentially expressed genes between the two groups. KEGG Pathway enrichment analysis was performed, and then real-time quantitative PCR was used to verify the expression level of the gene.

Results: Gene screening found 4 831 transcripts, which belonged to new genes and had protein-coding potential. Eight differentially expressed genes were screened between the two groups. Among them, CXCL8, PPBP, RPS18 and IL-1β gene mRNA expression levels were up-regulated, RNH1 , RPL39, RPL15 and AMBRA1 gene mRNA expression levels were down-regulated. The real-time fluorescence quantitative PCR verification results were consistent with the above-mentioned genetic screening results. KEGG analysis showed that the differentially expressed genes between leprosy patients and healthy controls were mainly enriched in mitochondrial autophagy and autophagy-related pathways and human papilloma virus infection pathways.

Conclusion: The mRNA expression levels of AMBRA1 and RNH1 genes are down-regulated in leprosy patients, while the mRNA expression levels of CXCL8, PPBP and IL-1β genes are up-regulated, which may be involved in the pathogenesis of leprosy through mitophagy pathway and chemokine-mediated signaling pathway, respectively.

Keywords: Leprosy, CD4 □ positive T □ lymphocytes, Gene expression profiling, Autophagy, Alphapapillomavirus

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#0688/ ILCABS1039

CONCOMITANT BORDERLINE LEPROSY WITH TYPE-II LEPRA REACTION AND IDIOPATHIC INTRACRANIAL HYPERTENSION

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Background: Type 2 lepra reaction is a multi-system immune-mediated complication. Idiopathic intracranial hypertension is characterized by raised intracranial pressure. The pathogenesis of idiopathic intracranial hypertension is not fully elucidated. There is no public case report on concomitant borderline leprosy with type-II lepra reaction and idiopathic intracranial hypertension.

Case presentation: A 35-year-old female who had recurrent type 2 lepra reaction for 2 years, presented with the symptom of sudden painless vision loss (Visual acuity: 20/500 in the right eye and 20/2000 in the left eye) and intracranial hypertension (Intracranial pressure was higher than 40cm H2O). This patient is overweight with body mass index of 25.4 kg/m2. Type 2 lepra reaction kept relapse for over 2 years though treated with thalidomide and prednisone. A ventriculoperitoneal shunt was performed when her intracranial pressure was badly controlled with 20% mannitol and glycerin fructose.

Conclusions: This female patient who had had high dose corticosteroid exactly corresponded with the risk factors for intracranial hypertension. Type 2 lepra reaction is involved with increased proinflammatory cytokine levels, which could lead to the increased permeability of the choroid plexus and result in intracranial hypertension.

Keywords: Leprosy, Type 2 lepra reaction, Idiopathic intracranial hypertension, Optic neuritis

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SOCIAL ASPECTS

#0689/ ILCABS61

THE IMPACT OF CLIMATE CHANGE ON LEPROSY TRANSMISSION, AND THE LIVES OF PEOPLE AFFECTED BY LEPROSY

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Introduction: In the context of health and development climate change is best described as a 'risk multiplier', for it exacerbates the impact of other processes and factors that threaten the health and wellbeing of communities. Leprosy is no exception as climate change will influence the factors that determine leprosy prevalence as well as disrupt and alter natural cycles and processes which impact on the livelihoods and wellbeing of people affected by leprosy.

Description of the case/issue: A major factor that governs transmission of leprosy is the viability of Mycobacterium leprae outside the human body which is related to the thermal-hydrologic regime of the local climate. However, there are many additional determiners of leprosy prevalence that are themselves affected by climate change such as migration, overcrowded settlements, nutrition, poverty, secure livelihoods, hygiene and sanitation.

People affected by leprosy may additionally find that climate change impacts are reducing their access to health care, affecting the viability of their medication, slowing their wound healing, increasing their risk of secondary infection and weakening their mental health.

Furthermore, communities in which people affected by leprosy reside are invariably highly marginalised: in remote/sub-optimal locations, ethnic/religious minorities, in areas of endemic poverty, facing co-morbidities, and already excluded groups. Marginalisation makes them potentially more vulnerable to climate shocks.

Additionally, leprosy stigma and disability may reduce their adaptation options and impair effectiveness of their response to climate related disasters.

Conclusion: Although the most important factors that govern leprosy prevalence may not be directly related to climate change, leprosy transmission is likely to be indirectly affected. Climate change will also impinge on the quality of life of people affected by leprosy.

Organisations working on leprosy must therefore ensure their operations are 'climate proofed' and that people affected by leprosy are supported to increase their resilience to climate impacts.

Keywords: Climate change, Leprosy, Impacts, Impacts, Global warming

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#0690/ ILCABS82

DEPRESSION SEVERITY DURING THE COVID 19 PANDEMIC: A COHORT STUDY AMONG 100 PEOPLE AFFECTED BY LEPROSY AND LYMPHATIC FILARIASIS IN BANGLADESH

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Introduction: The COVID-19 pandemic causes a high burden of psychological distress in people worldwide. In particular, people with disability due to leprosy or lymphatic filariasis (LF) are more porn to mental health issues compared to the general population with high level of anxiety and depression.

Objectives: The aim of this study was to determine mental health outcomes during pandemic-induced lockdowns and to examine depression severity through the PHQ-9 survey. It also helps to identify special interventions and counseling needs for people with different levels of depression.

Patients/materials and Method: The study was a non-randomized cohort study that selected 100 people affected by leprosy and LF in the three high-endemic districts. Eight data enumerators periodically collected the data from the beneficiaries during the study period. The data was collected through Kobo Collect (a mobile application) with a standard PHQ-9 survey form.

Results: The study found a range of mental health problems in people affected by leprosy and LF during the pandemic. In 2020, the severe and moderately severe depression was high(16% & 46%) and gradualy decreased in 2021 & 2022. The moderate depression was varied in 2020(32%), 2021(63%) and 2022(39%). It is due to terrible effect of the pandemic during 2021. Mild depression was increased gradually in the years. Most importantly, a good number of people with moderate and moderately severe from 2021 moved to mild depression in 2022, which can be assumed as a result of intensive counseling and follow up of the patient.

Limitations: Gender biased, participants feeling shy to respond to sensitive questions and reaching to the remote respondents are the challenges in the study.

Conclusion: Continuous follow up and close contact with people affected by leprosy and LF during the pandemic crisis reduced mental health outcomes and ensure better living conditions

Keywords: Lymphatic Filariasis(LF), Leprosy, Depression, Patient Health Questionnaire(PHQ 9), Mental Health, Counseling

#0691/ ILCABS88

TOWARDS A CROSS-NEGLECTED TROPICAL DISEASE PERCEPTION STUDY TOOLKIT: A PROTOTYPE TOOLKIT DEVELOPED IN THE FIELD OF LEPROSY

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Introduction: Perception refers to how individuals or groups "see" an object, person, event or institution. Perception is a neutral term, it can be positive or negative. A negative perception of leprosy and other neglected tropical diseases (NTDs) is a problem that is seen globally. It results in discrimination, social exclusion and widespread mental health problems. There is a need for a standardised toolkit to assess the different aspects of perception of leprosy or other NTDs, including essential knowledge of these conditions.

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Objectives: To describe the Perception Study Toolkit (PST), which was used in the PEP++ project, to implement 'perception studies' for the assessment and monitoring of knowledge, attitudes and practices regarding leprosy.

Material and methods: We developed the Perception Study Toolkit (PST). This toolkit consists of four measures, a Communication Needs Assessment questionnaire, Knowledge Attitudes and Practices questionnaire, the EMIC community stigma scale and the Social Distance Scale. It also comprises qualitative methods to investigate perception: the way people see leprosy, what they know about leprosy and their attitudes, beliefs and reported behaviour towards persons affected by leprosy. The PST is a toolkit and comprises separate instruments that assess different aspects of perception, it is also possible to use only one or a few of the instruments of the PST.

Results: This is not applicable because this is not a study.

Limitations: None.

Conclusions: The PST can help identify specific beliefs, knowledge gaps, misconceptions and fears to inform community education and behaviour change interventions and can be used to monitor and evaluate such interventions. Using a standard toolkit like the PST would enable assessment of the perception of leprosy or other NTDs that would allow comparison across projects and countries including monitoring of changes over time.

Keywords: Perception, Stigma, Assessment, Toolkit, Comparison, Knowledge

#0692/ ILCABS89

A COMPARISON OF PERCEPTIONS AND KNOWLEDGE OF LEPROSY BETWEEN LEPROSY ENDEMIC DISTRICTS IN FOUR LEPROSY-ENDEMIC COUNTRIES

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Introduction: Sufficient knowledge of early clinical leprosy presentation and leprosy services and low levels of stigma are essential for early detection of leprosy. This study is part of the PEP++ project.

Objectives: This study seeks to compare the nature and extent of leprosy-related stigma between endemic districts in Bangladesh, India, Indonesia, and Nepal.

Methods: The study used a cross-sectional design with a mixed-methods approach. We assessed knowledge, attitudes, and practices with the KAP measure, and stigma with the Explanatory Model Interview Catalogue community stigma scale (EMIC-CSS) and the Social Distance Scale (SDS). In addition, semi-structured interviews and focus group discussions were conducted. The quantitative data were analysed using stepwise multivariate regression. The qualitative data were analysed using open, inductive coding. Data were collected in two endemic districts each in Bangladesh, India, Indonesia, and Nepal.

Results: Over 1,600 participants were included in the questionnaire interviews - approximately 420 participants (100 persons affected by leprosy, 100 contacts, 170 community members and 50 health workers) in each of the five countries included in the study. In addition, in each country at least 24 in-depth interviews and three in focus group discussions were conducted. Most participants were from rural areas. One in five participants had adequate knowledge of leprosy, and one in four participants had poor knowledge regarding

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leprosy. Data collection is currently ongoing (May 2022). When all data have been collected, mean SDS and mean EMIC-CSS scores as well as determinants of negative perceptions will also be compared.

Limitations: Not all data have been collected at present (May 2022). A limitation of this study is its cross-sectional design, which prevented us from making more definitive causal inferences.

Conclusions: Understanding how perceptions and knowledge of leprosy differ in endemic countries can help us develop contextualised educational and behavioural change interventions.

Keywords: Perception, Stigma, Comparison, Knowledge, Mixed methods, Attitudes

#0693/ ILCABS101

EVERYTHING IS IN A NAME: NEED TO REBAPTISE "LEPROSY" IN THE 21ST CENTURY

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Introduction: Leprosy is subjected to the wrath of nomenclature, ill-fated to perpetual and dire repercussions of patients being called as “lepers” and shun from self-respect and dignity. Medical science evolved from chaulmoogra to universal MDT, why is “leprosy” still stuck in verbatim?

Description of the issue: Despite being the “oldest” known medical illness to have afflicted human-kind, leprosy is associated with stigma since inception of its nomenclature! The Old Testament described the word “leprosy” as a plague aimed at punishing humans for their sins. Instead of describing a specific disease, Tsara’ath in Hebrew stated leprosy as a symbol that aggregates consequences of impiousness. Gerhard Hansen too named the bacillus *M. Leprae*, continuing this inapt taxonomy. The name is so much ingrained with socio-cultural stigma that we keep battling our way to educate patients, community and even fellow doctors about the disease not being an “infectious curse” but just a bacterial disease! The non-stigmatising term Hansen’s disease is suggested by global forums to castigate discrimination. Even WHO’s theme for 2022 is 'United for Dignity': to honour people living with leprosy by sharing their empowering stories and advocating for them to live a dignified life free from disease-related stigma. If Nazi nomenclature like “Reiter syndrome” and “Wegener’s granulomatosis” can be replaced with reactive arthritis and granulomatosis with polyangiitis, why can’t “leprosy” whose Biblical roots bear no scientific basis with disease pathogenesis, be renamed? For any disease, history should be acknowledged, science believed and patient dignity prioritised. Why perpetuate a name which intrinsically belittles patient’s dignity?

Conclusion: In Brazil, neither physicians nor patients use the term “leprosy”, rather live with the vernacular “hanseníase.” If this can be done globally, why can’t India: the soil that endured leprosy and its brunt to the extent of being called the world capital, not bring upon this revolution?

Keywords: Nomenclature, Dignity, Stigma

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#0694/ ILCABS115

STIGMA: STILL A WEAPON FOR LEPROSY

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Introduction: Too often people affected by leprosy face discrimination and prejudice within their own communities. This stigma is based on myths and ancient beliefs that do not reflect the reality of the disease. To date, not much attention has been given to stigma associated with leprosy.

Objectives: The main purpose of the study was to assess and monitor the level of stigma in people affected by leprosy in seven districts in Bangladesh. The study gives information and recommendations on how stigma manifests, how it can be reduced, and the tools available to assess the experience of stigma and discrimination.

Patient/material and methods: The study used the '5-Questions Stigma Indicators -Affected Persons' to assess the level of stigma in a sample of 200 people affected by leprosy in 7 districts of Bangladesh. The levels are calculated on a scale from 0 to 10 in which 0-3 No/Mild stigma, 4-6 Moderate stigma, 7-10 Severe stigma.

Results: It was found that 19% of respondents remained under the "Mild stigma" category. The data indicated 41% of "Moderate stigma" among participants of which 75% were female and 25% male. "Severe stigma" was reported by 22% of respondents of which 73% were female and 27% were male. Furthermore, most of the people affected by leprosy stigmatization were in the age range of 50 to 70 and had very poor education levels, sometimes illiterate or having received no education.

Limitations: Due to the sensitivity of the study subject, data enumerators found it challenging to conduct the survey and capture stigma-related answers.

Conclusion: In terms of vulnerability, females are at a disadvantage, and there is a need to incorporate a gender lens on stigma. Social awareness of leprosy knowledge in the community as well as in the family is pre-requisite

Keywords: PABL(People Affected by Leprosy), Stigma, Discrimination

#0695/ ILCABS121

REACHING TO THE UNREACHED AND VULNERABLE COMMUNITY POPULATION THROUGH MOBILE INFORMATION, EDUCATION, COMMUNICATION VAN IN BIHAR, INDIA

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Background: In rural Bihar, where 89% of the population resides, Leprosy is feared and people affected are isolated from the community due to a lack of knowledge about the disease. This prevents the affected from

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seeking medical attention. There is lack of awareness that the disease is treatable with multi-drug therapy. In order to fight against the stigma associated with leprosy, and prevent the isolation of the patients.

Objectives: Through the Mobile IEC van, educate people about leprosy, its treatment, and the availability of treatment at nearby public health facilities.

Methodology: LEPRA has two Mobile IEC Vans in Bihar that operate 22 days a month. These vans had an LCD screen, a video player, a public address system, and a genset (For power supply). The van was accompanied by a driver and an IEC Assistant. The van shows two films about leprosy (in local language Hindi and Bhojpuri) every day and held 2-3 exhibitions in villages. The local project supervisor consulted with the local leader before organising the programme.

Results: A total of 156 films showed and 265 exhibitions done in the remote areas of four districts of Bihar. 181250 populations covered and disseminated message about leprosy, removal of social stigma and discrimination. Amongst 347 suspects referred to PHC and 293 cases are confirmed and received the MDT.

Despite these positive cases, IEC activities change attitude of the people as they still feared and reported to the PHCs. We have seen where ever our IEC Van is moving, new case detection are quite high during the period.

Conclusion: We have seen these initiatives are very effective in the rural area where literacy rate are low and people cannot read and understand. Cinema connects very well the villagers and we deliver the massages through the Picture.

Keywords: IEC- Information Education and Communication

#0696/ ILCABS128

HIGHER EDUCATIONAL SCHOLARSHIPS AS A MEANS TO ENSURING MAINSTREAMING OF PERSONS AFFECTED BY LEPROSY IN MARGINALIZED COLONIES- EVIDENCE FROM SASAKAWA-INDIA LEPROSY FOUNDATION'S SCHOLARSHIP PROGRAM

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Objective: Since 2015, Sasakawa-India Leprosy Foundation (S-ILF) has been providing merit-based higher educational scholarships (His Holiness Dalai Lama-Sasakawa Scholarship) to children from families affected by leprosy residing in marginalized colonies across nine states in India. Despite ambition and intellect, children from these colonies may not be able to undergo higher education due to a lack of resources. We conducted an impact assessment of the scholarship program for children belonging to batch 1 to 5 (year 2015 to 2019).

Method: During the 5-year period, a total of 99 children were provided scholarships. A baseline survey was undertaken at the time of enrolment. An endline assessment using a semi-structured interview schedule was conducted in 2022.

Result: Out of 99 scholars, 68% were males and 32% were females. The most sought-after professional course was in the field of health care 37% followed by hospitality 15%. Among others were engineering, teaching, information technology, management, social work, and journalism. 49% have completed their studies successfully. Out of these, 84% are currently working, while 41% are still pursuing their studies.

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The average monthly family income of those currently in jobs had risen from Rs. 8,680 (USD) to Rs. 23,718 (USD). The families dependent on begging had dropped significantly from 17.6% to 8.5%. Such has been their mainstreaming, that some families have moved out of the colonies and marriages outside the colonies have been made possible. Some scholars have emerged as change-makers in their colonies providing free healthcare services to the residents and tuition to the children of the colony.

There were a total of 9% drop-outs owing to health issues.

Conclusion: In absence of any financial security, scholarships play a major role in ensuring continuity of education and enabling dignified means of livelihood. The scholarship support has impacted individuals, families as well as the community.

Keywords: Leprosy, Higher education, Livelihood, Capacity building, Mainstreaming, Scholarship

#0697/ ILCABS150

#BHEDNAHIBHAVSE – AWARENESS AND ADVOCACY - FIRST STEP TOWARDS ERADICATION

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Though India runs the largest leprosy eradication program in the world, NLEP reports nearly 120,000 new cases of leprosy every year. The biggest barrier to eradicating this disease is 'lack of awareness' around the treatment and care available, and stigma attached to the disease. People are misinformed or uninformed on leprosy.

To remove India from the unenvious position of being the Leprosy Capital of the world, The 'Leprosy Control Project' by Rotary Club of Delhi South with partner Clubs and Lepra was started in Nov 2019, with Government help, to make Leprosy a disease of no consequence in India.

Battling Ignorance: Ignorance around leprosy has been the biggest challenge in systemic reduction of this disease to insignificant levels. An integrated communication approach was therefore adopted to dispel myths and ignorance and mitigate misinformation. Digital media and public relations were used to:

1) Engage with experts / influencers on World Leprosy Day. 2) Raise awareness among public, health professionals, decision makers and beneficiaries through survivor stories of leprosy patients on various platforms. 3) Engage with eminent personalities. 4) A campaign jingles and heart wrenching campaign film were made. 5) Create opportunities for medical practitioners to break stigma through platforms such as NDTV, Aaj Tak's, etc. 6) Mobilize thinking on the living conditions of leprosy patients by through panel discussions. 7) Conduct media trips, to get a firsthand account of the patients and their realities.

Reached millions to change their perceptions.

Secured many stories in various formats. Coverage secured 70 million readers. Jingle on radio and Facebook reached 6.7 m people. Editorial interaction reached 3.7m. Social media: Reached out to 312K+ people on Facebook.

Keywords: Awareness, Advocacy, Integrated Communications Approach, Print and Social Media

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#0698/ ILCABS171

LEPRA'S UNIQUE EXPERIENCE DURING COVID PANDEMIC (WAVE1 AND WAVE2) IN BIHAR, INDIA

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Background: The first wave of Covid cases in Bihar was reported in Munger on 22 March 2020, when a 38-year-old tested positive for COVID-19. He had a travel history to Qatar. The virus was spread in 38 districts of the state, of which Patna had the highest number of cases. The state was under lockdown from 25 March, 2020 for four months and NTDs services were majorly affected during the period.

The second wave began in March 2021 and it was much larger than the first wave. In rural areas the second wave caused shortages of vaccines, hospital beds, oxygen cylinders and other medicines in different parts of the country. Complete lockdown was not imposed by the government during 2nd wave, so leprosy patients were able to move for their daily needs but that was the risk of infection.

Description: The impact of the lockdown resulted in worsening the mental health of people and affecting their happiness, lack of access to medical services as during the pandemic as the government was prioritising COVID positive. Many leprosy affected people from great loss of income as most of them work as day labourers, run small shops, or sell goods by moving from village to village.

LEPRA supported in both waves, food packets to 1080 leprosy affected people thrice during lockdown. 1835 pairs protective footwear were distributed by the Mobile foot care unit in all 63 leprosy colonies of Bihar. Tele counselling provided by LEPRA's team.

Conclusion: COVID pandemic was a disaster of mankind but with coordination of district officials and community solved the issues and supported people affected by NTDs in vaccination. The attention of the government brought through the voice and 2 Public Interest Litigation (PIL) in the High Court Patna were filed by Disability forum.

Keywords: NTD- Neglected Tropical Disease, PIL- Public Interest Litigation

#0699/ ILCABS191

A STUDY ON THE QUALITY OF LIFE AND PARTICIPATION AMONG PEOPLE AFFECTED BY LEPROSY

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Introduction: Leprosy is a chronic debilitating disease causing deformities and disabilities among the people affected. Such people are ostracised and stigmatized. This renders them unable to participate in their family and community activities, leading to poor mental health and loss of dignity and wellbeing

Objectives: The general objective of the study was to examine the quality of life among people affected by Leprosy, to understand the psychological wellness of patients and to access the social relationship of people affected by leprosy and their level of participation in their family / community.

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Patients and methods: 70 patients were interviewed using the P-Scale and the Who Qual Bref. These participants were accessed from a leprosy asylum and from both the out-patient department as well as those admitted as in-patients in a reputed tertiary care centre for leprosy in South India. The results were tabulated for each question in the P-Scale and the Who Qual Bref Questionnaire and the percentages of people who were able to participate in personal, family and community activities were calculated.

Results: Factors affecting the quality of life included the level of education, the disability grade, age of the patient, duration of illness and monthly income.

Limitations: The data was collected from patients who attended a tertiary referral centre and from patients who were residents in an asylum. The sample did not include people from the general community or from a colony.

Conclusions: Experiencing leprosy can become a burden to the individual and to the family members and the community. In order to decrease the burden of the disease, the psychological, physical, environmental and social impact of leprosy should be evaluated and managed during the initial diagnosis and should be continued throughout rehabilitation and follow-up visits. This requires a collaborative approach among the health team for a larger population.

Keywords: Leprosy, Participation, Quality of life

#0700/ ILCABS196

PREFERRED PRACTICES- JAAGRUTI PROJECT AS A MODEL FOR SUSTAINABLE LIVELIHOODS OF PEOPLE AFFECTED BY LEPROSY AND OTHER DISABILITIES

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Background: Jaagruti- Inclusion of Persons with disabilities through Sustainable Livelihood Project at Kothara Leprosy Hospital of The Leprosy Mission Trust India, aims to promote Sustainable Livelihoods for 400 People affected by leprosy and other disabilities in Amravati district Maharashtra. The project used various approaches to promote livelihoods in Melghat hilly and tribal areas of Amravati district.

Objective: To understand the key role of Livelihood Ladder to promote Sustainable Livelihoods for People Affected by Leprosy and other disabilities.

Methods: Jaagruti Project from October 2019 to March 2022 has used unique methods to promote sustainable livelihoods like Thematic Skill Development, Livelihood Basket Assessment, Business Plans, CBO, Livelihood Ladder, Livelihood Demonstration Centres, exposure visits etc.

Results: The Project worked with 400 People affected by leprosy and other disabilities from age 18 years to 45 years to develop their skills and link them to Livelihoods. All 400 people with disabilities underwent various thematic skills training on their chosen trades. 6 Livelihoods Demonstration Centers were developed in the same location by people and others were sent for exposure visits. A Project named Livelihood Ladder was developed to closely monitor all the stages of development. The project formed 39 Organizations of People with disabilities and linked for livelihood loans. 400 People affected by leprosy and other disabilities were linked to financial institutions, and all started their livelihoods and earning their daily bread with dignity.

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Conclusions: This study helped to understand the importance of Livelihood Ladder and proper stages as a preferred practice to start Livelihoods and promote inclusion and participation of People Affected by Leprosy and other disabilities through various innovative methods.

Keywords: Leprosy, Disability, Livelihood Ladder, CBO, Thematic Skill Development

#0701/ ILCABS202

EVALUATION OF A SELF-HELP INTERVENTION TO PROMOTE THE HEALTH AND WELLBEING OF MARGINALIZED PEOPLE INCLUDING THOSE LIVING WITH LEPROSY: CLUSTER-BASED, COHORT STUDY.

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Introduction: People affected by leprosy are at increased risk of ulcers from peripheral nerve damage. This in turn can lead to visible impairments, stigmatization, and economic marginalization. Literature suggests that empowering patients to self-manage their condition to improve clinical, social, and economic outcomes in marginalized people.

Objectives: The objective of this study, known as SHERPA (Self-Help Evaluation for lepRosy and other conditions in NePAl) is to evaluate a service intervention called Integrated Mobilization of People for Active Community Transformation (IMPACT) designed to encourage both self-care and self-help in marginalized people including those affected by leprosy.

Methods: A mixed-method evaluation study comprising two parts, first, a prospective, cluster-based, non-randomized controlled study to evaluate the effectiveness of self-help groups on ulcer metrics (people affected by leprosy only) and on four generic outcome measures (all participants) - generic health status, wellbeing, social integration, and household economic performance. Second, a qualitative study to examine the implementation and fidelity of the intervention.

Impact/Results: Baseline data collection took place from December 2020 to October 2021

Limitations: The evaluation design has been applied to an existing program whose rollout has already begun. Moreover, follow-up is limited to 24 months because of the duration of the funding envelope. We therefore will not be able to measure how effects may manifest in the longer term.

Conclusions: We hope that our work in opportunistic or rapid response research will be an inspiration for others who want to evaluate interventions that are likely to be scalable because they have arisen in and from the service, rather than instigated as a research project.

Keywords: Leprosy, Ulcers, Disability, Low and middle-income countries, Self-care, Self-help groups

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#0702/ ILCABS205

A STUDY ON MENTAL HEALTH WELL BEING OF LEPROSY PATIENTS

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Introduction: Leprosy is one of the important contributory factors for the disability in India. Those affected by leprosy have adverse impact on their mental health, not only because of the disease but also because of the presence of disability/deformity. Depression, anxiety, fear and self-esteem are quite common among people affected by leprosy (PA L's).

The aim of the study is to systematically study the relationship between disease and mental health of the PAL's.

Objectives: of the Study:

1. To study the impact of disease /disability on the mental health of the PAL's.
2. To find out the factors that help to reduce or eliminate the burden of disease on the minds of the PAL's.
3. To suggest interventions for effective management of mental well being of the PAL'S.

Methodology: Research has shown that bio-psycho-social approach rather than a biomedical viewpoint is more effective in managing mental health well being of PAL's.

To gain insight into the mental well-being of PAL's, the assessment of psychiatric co-morbidity will be done. PAL's registered with a 100 bedded tertiary care hospital in an urban area will be selected using multistage stratified random sampling technique. The patients will be interviewed with PHQ-9 and GAD-7 questionnaires. Information regarding type of leprosy, deformity grade, patches and socio economic status will also be collected.

Health workers will also be interviewed to understand the problem from the provider perspective and avoid a segmented view. A total of 150 PAL'S and 50 health workers will be included in the study.

Results: Interventions for the mental wellbeing of the PAL's will be suggested. The study will also describe the role of health workers.

Limitations: Depression and anxiety are non-tangible parameters.

Conclusion: More attention may be given to the high risk patients.

Keywords: Mental health, Mental health well being, Depression, Anxiety, Stigma, Disability /Deformity

#0703/ ILCABS206

EMPOWERING PEOPLE AFFECTED BY LEPROSY THROUGH COMMUNITY BASED ORGANIZATIONS

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Introduction: The Bogura Federation unites over 100 self-support groups (SSGs) of persons affected by leprosy and other disadvantaged persons. It represents over 1,000 men and women of whom half are persons affected by leprosy; while the other members have general disabilities or are otherwise marginalized. The initiative to establish the Federation originated from the cooperation between an INGO and the Bogura Health Department. Fifteen experienced leaders of the Upazila (sub-districts) SSGs formed the Federation's

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Executive Committee after being trained in management and leadership skills. The Federation was formally recognized as a community-based organization (CBO) by the government in 2014. After initial INGO assistance, the Federation is now running independently and invests in its own income-generation activities.

Description: The Federation seeks to act as a forum where SSGs can discuss their members' rights and needs for support and assist and strengthen the affiliated groups in their work. Participation in community and government leprosy activities is an important element in the Federation's agenda, with members not affected by leprosy participating in these activities as well.

The Federation has established a relationship of mutual respect and close collaboration with the district and sub-district Leprosy Control Programs. The services that they are involved in include:

• Active case finding

• Support during treatment

• Prevention of disability

• Counselling for persons affected and their families

• Socio-economic development

• Awareness-raising

• Advocacy

The Federation is increasingly able to approach various government Departments and advocate for the needs of its members. Networking with various NGOs has resulted in regular communication, exchange meetings, support for training and project implementation.

Conclusion: The Federation plays an important role in coordinating the aspirations of all its members and creates a united strong voice of people affected by leprosy and other vulnerable people. Members of the federations

Keywords: Community-Based Organization (CBO), Self-Support Groups (SSGs), Persons Affected By Leprosy (PABL), Income-Generation Activities (IGA), Prevention of disability (POD), Community-Based Leprosy Services (CBLS)

#0704/ ILCABS213

SELF-HELP GROUP COMMUNITY INTERVENTION IMPROVES ECONOMIC CONDITIONS AND PROVIDES SOCIAL REHABILITATION FOR PEOPLE AFFECTED BY LEPROSY: PERSPECTIVE FROM NEPAL

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Introduction: Self-help groups (SHGs) are created to promote social connection and to practice self-care for wound management and prevention of disability among those affected by leprosy. Limited evidence exists on social benefits of SHGs. We describe the SHG's function and social and economic benefits observed among SHG members and present case reports.

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Description: A development project in Nepal has been working on community-based rehabilitation of 153 leprosy affected people through 13 self-help groups in 3 districts since 2019. Mixed SHGs were formed with persons affected by leprosy, lymphatic filariasis and those with disabilities and registered with the local government as an agriculture cooperative. The group members received extensive self-care training, seed fund for income generation, and a savings and credit mechanisms were established. About 44 leprosy affected persons utilized seed money for income generation activities: vegetable farming, poultry farming, shops, making clay pots etc.

Members of the group who started self-care and income generation activities reported experiencing improved economic condition followed by improved social inclusion. We present three cases reports where prior to participation in the SHG they were in poverty and feeling helpless due to stigma and discrimination from the community despite being released from treatment. With economic opportunity and an income source, persons with leprosy reported a newfound status in their community. They described getting an opportunity to interact with the community through their small business where the community slowly began developing relationships with them and including them in social functions.

Conclusion: Economic opportunities through SHGs could provide an enabling environment for social inclusion and protection against loss of social life by increasing leprosy affected persons economic status. A systematic study is warranted to understand the full benefits of SHGs and how economic rehabilitation stimulates attitudinal and behavioral changes of the community towards those affected by leprosy.

Keywords: Self-help group, Stigma and discrimination, Economic rehabilitation, Social rehabilitation

#0705/ ILCABS218

IMPACT OF STIGMA AND DISCRIMINATION IN PEOPLE AFFECTED BY LEPROSY: A CASE STUDY

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Introduction: Female (57) is the youngest of three siblings. Her father was a laborer, and her mother was a housewife who died when she was only 7 months old. She was raised by her grandmother† and couldn't study due to poverty. After her grandmother and father died, she was isolated from the rest of her family. The discrimination because of her leprosy diagnosis made it impossible for her to get married.

Method: The person affected found patches on her body when she was 11 years old. After a year of symptoms, she was diagnosed with Multi Bacillary (MB) leprosy and received Multidrug Therapy (MDT). She was cured after completing the course of MDT and had regular follow-up with health workers.

Result: The person affected has had her left leg and fingers amputated and suffers from ulcers and other complications. She survives thanks to the charity of others. Community members can not invite her to any social events, and this exclusion from society impacts her mental health. She now lives in a dilapidated house on her father's homestead. She quotes, "Some people in my community still hate and neglect me, and even don't mix with me because of leprosy. Leprosy is still eating away at my body parts – fingers, toes, feet and other organs. Friends have husbands and children, but leprosy left me alone. I have come into the world with much sorrow."

Limitations: The person affected is unable to work and has mobility problems due to her disability in hands and feet.

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Conclusion: This case demonstrates that there is a need to increase leprosy stigma reduction activities that will result in clear changes in perceptions in the society, and socio-economic rehabilitation in one of the most components to eliminate of discrimination against persons affected by leprosy and their family

Keywords: Stigma, Discrimination, Leprosy multi-bacillary MB, Multi-Drug Therapy (MDT).

#0706/ ILCABS228

A STUDY TO COMPREHEND THE SOCIO-ECONOMIC CHALLENGES EXPERIENCED BY PERSONS AFFECTED BY LEPROSY LIVING IN NON-COLONY ENVIRONMENT, THE COMMUNITY, WITH SPECIAL FOCUS ON STIGMA AND DISCRIMINATION.

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Introduction: Leprosy is still a public health problem and a cause for distress to Persons Affected by Leprosy due to unfavourable social environment. Stigma and discrimination towards persons affected by leprosy violate their human rights that cost them their mental, physical, social, economic and dignified life causing hindrance to lead a rightful life.

Objectives: To elicit evidence on contemporary issues of persons affected by leprosy with reference to socio-economic conditions with focus on stigma and discrimination and suggest means to their resolve.

Material and methods: The study is based on the responses of 1,840 study population (rural & tribal), selected according to stratified random sampling method, comprising of 595 leprosy affected (40% with visible disability and 41% women), 605 their family members and 640 control population in the community. Data collected through personal interviews with help of pre-designed interview schedule. The data is analysed using SPSS programme.

The findings pertaining to issues of leprosy affected are interpreted and presented in the context of knowledge and perception about leprosy observed in the families of affected and community.

Results:

· Majority of the affected respondents live in low socio-economic conditions.

· 23% (138 out of 595) of the affected respondents revealed to have experience with discrimination.

· 53% are under influence of self stigma and 10% had suicidal thoughts due to leprosy.

· 48% of common public have different outlook about leprosy affected.

Limitations: Informed written consented response of the interviewee is considered as evidence.

Conclusion: Study confirms that social stigma and discrimination on ground of leprosy continues to impact the life of substantial number of persons affected by leprosy living in the community (non-colony environment).

We recommend a viable system under national programme to identify and resolve issues of leprosy affected on par with 'Case detection and MDT'.

Keywords: Discrimination, Social Stigma, Self stigma, Persons Affected by Leprosy, Non-colony environment

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#0707/ ILCABS237

EMERGING NEED ADDRESSED OF LEPROSY AFFECTED PEOPLE THROUGH PUBLIC INTEREST LITIGATION (PIL) IN BIHAR, INDIA

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Background: The COVID-19 pandemic has caused an unprecedented health and economic worldwide crisis, specifically people with disabilities and comorbidities. Innovative solutions are imperative given limited resources and immediate emerging need for medical-supplies, healthcare support and treatments. Government was engaged in managing pandemic circumstances and not aware of leprosy affected people. The situation was more critical of sixty-three leprosy colony people and inmates.

Objective: To receive ration, medical treatment, healthcare support and shelter of people affected by leprosy.

Methodology: Despite repeated request from the leprosy affected persons, the Public Distribution and Consumer Affairs system (PDS) officials denied and not accessing the health services two Public Interest Litigation (PIL) comprising Right to Food and Nutritional Security under the National Food Security Act, 2013 "Pradhan Mantri Garib Kalyan Ann Yojna" and shelter Article 21, Article 39(a) and Article 372/ 49, of the Constitution of India respectively, filed in the High Court Patna. The PIL was more concerned and relevant to persons with disability and critical challenges of the community.

Result: The Judge took an immediate action and ordered for providing ration, medical treatment and healthcare support to people affected by leprosy including 63 colonies of Bihar. The disability was considered and allowed to access the ration without thumb impression and biometric. Many people have the loss of fingers and couldn't do the signature on the delivery records. A total of 1250 Households are benefitted and 49 shelters are permitted by administration in Ramnagar colony.

Conclusion: Owing to the current COVID-19 pandemic, no one is there to look after them and their needs, nor do they have any medical shelter. Times like this is when the government needs to be doing more proactive work for the welfare and towards the betterment of these people, instead not more was

Keywords: PIL- Public Interest Litigation, PDS- Public Distribution and Consumer Affairs system (PDS) officials, HHs- Households

#0708/ ILCABS243

EXPERIENCES OF PEOPLE AFFECTED BY LEPROSY AND PEOPLE WITH DISABILITY ON ENTERPRISE SUPPORT THAT AFFECT THE SUSTAINABILITY OF ENTREPRENEURSHIP

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Introduction: A disability employment project aims to support persons affected by leprosy and persons with disability to establish and strengthen their businesses.

Objective: The study has set out to learn from the lived experiences of persons affected by leprosy and persons with disability engaged in self-employment.

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Methods: This was a qualitative phenomenological study classified in 6 thematic areas - Feasibility assessment by the project, Investment, Monetary flow, Status of the business, Marketing and sustainability, Discrimination, and Post support intervention.

Results: Respondents who have chosen businesses other than farming were found to have proactively engaged in sustaining their business. They practiced regular savings for future investment, established good market access, made efforts to introduce their brand by increasing personal contacts, and made profits. Those who chose farming as a business option only know conventional farming and are not making a profit in the short run. Their membership in cooperatives is either for repaying the loan or withdrawing the limited savings they have. All the respondents expressed that regular mentoring, and counseling have been useful. No respondents reported discrimination but persons affected by leprosy said that they have faced discrimination before business. Most of the respondents stated that they have not faced disability-specific barriers and that has not impacted their business. Instead, they felt inclusiveness after establishing business due to increased interaction with clients.

Limitation: May have respondent biases in the responses and views expressed.

Conclusion: There was not a significant difference between people with disability and leprosy in business operations. The interview raised a doubt about whether the respondents reported 'no barriers' and 'no discrimination' and have learned to accommodate themselves to the

Keywords: Disability, Self employment, Seed money, Business

#0709/ ILCABS262

ASSESSMENT OF PARTICIPATION RESTRICTIONS AMONGST LEPROSY AFFECTED PEOPLE IN THREE DISTRICTS OF LUMBINI PROVINCE NEPAL.

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Introduction: Leprosy is one of the most stigmatized disease known. The main attributes to the high stigma amongst the leprosy affected people are never healing ulcers and disfiguring deformities. Due to higher stigma, people who acquire the disease hesitate to participate in the community actively.

Objective: To assess the participation restrictions amongst the leprosy affected people using P-scale.

Methodology: This is a prospective study where leprosy affected people from the three districts were screened for participation restrictions using the P-scale. The P-scale was administered to the leprosy affected people who were traced using the records at the Local Health Posts. This was done as part of the baseline survey of a project whose main aim was to improve the health status, reduce disability, and zero discrimination amongst the intended beneficiaries

Result: In this study, 233(District A-96, District B-77 and District C-60) participants were surveyed. The participants were categorized into Brahmin (29), Adhibashi/Janajati (52), Dalit/untouchables (5) and others (5). Further the participants were subdivided into leprosy without impairment (188) and leprosy with impairment (45). 66% of the participants from district A showed more participation restriction, whereas there was 59% and 57% participation restriction in district B and district C respectively. If we compare person with impairment and without impairment, person with impairment has 77% high restriction

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compare to non-impairment 55%. The female has more restriction 66% than male has 52%. In cast wise, Dalit has higher restriction 67% compare to Adhibasi 64%.

Limitations: As this is only a baseline survey of a community based project the result couldn't be generalized to the whole leprosy community of the nation.

Conclusion: Female, impaired and Dalit has found significantly higher community participation restriction compared to other groups. This shows extra effort should be applied to the community for boost their active community participation.

Keywords: Leprosy, P-Scale, Participation, Restrictions

#0710/ ILCABS281

BARRIES TO DECISION MAKING BY MARGINALISED WOMEN WITH DISABILITY, LEPROSY AND PROVERTY IN RURAL AREAS

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Barriers to decision-making by marginalized women with disability, leprosy and poverty in rural areas

Introduction: Equality is a fundamental human right and gender equality is central to human rights. "There is no nation wherein women have equivalent or higher level of freedoms, opportunities and assets than men" Women empowerment has been one of the techniques used to address gender inequality among people with disability, leprosy, and other marginalized groups. This study was conducted to assess the situation and the barriers toward gender equality among most marginalized women in rural areas.

Method: The study was conducted in 5 villages, covering 5 community groups with 100 members. The sample comprised randomly selected 20 women and 5 family members from 5 groups of individuals affected with leprosy, other disabilities, and marginalized. KAP (knowledge, attitude, practice),two Focus Group Discussion (FGD),two case studies were conducted to assess barriers to gender equality.

Result: Women with disabilities have limited accessibility due to physical barriers like infrastructure, transportation, lack of affordable aid, and dependence on family members to visit the health centers and education institutes, Self-stigma played a significant role in the decision-making process for the women affected with leprosy in seeking their daily needs, exercising their rights, and access to benefits from development programs and policies.It was observed that the elderly earning women in the family were not given a key role by the community and men to decide their lives and earnings.

Conclusion: The Illiteracy, lack of adequate aid & appliances, physical barriers like infrastructure and transportation, lack of regular income, lack of knowledge on rights entitlements development programs and policies, attitudinal barriers of in-laws and men, self-stigma, lack of solidarity among women, lack of participation in local governance, etc. are the main barriers to decision making by the disabled.

Keywords: Leprosy, Disability, Poverty

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#0711/ ILCABS287

REDUCING LEPROSY RELATED STIGMA BY BUILDING POSITIVE IMAGE OF PERSONS AFFECTED THROUGH FORMAL NETWORK, THAILAND

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Introduction: In the past, people associated persons affected by leprosy with disability, ulcers, beggars, etc. To build the understanding and positive image of persons affected, a formal network was established.

Description of the case/issue: The network was established in March 2021 named 'From Faith to Power' reflecting via an emblem displaying several small light blue streams running against earth gravity forming a powerful coalition to combat stigma. A network committee primarily consists of 11 persons affected from different regions residing in ex-leprosy colonies and general communities. They are farmer, artist, teacher, housewife, etc.

The network vision is 'increase human dignity and combat stigma' with 4 missions: 1) self-care and preventing new disability 2) role model, supporting and building positive image, and participating in public development projects 3) surveillance and monitoring community stigma and 4) recruiting new member for the network.

In the period of one year, the members have contributed to social development projects such as transferring career related skills, visiting under-privilege group, improving environment and public utilities, donating basic materials to persons affected by COVID-19, and strengthening welfare project for persons affected by leprosy. To enhance members' relationships and participation in the pandemic situation, meeting is arranged online. The network activities are disseminated through the Facebook to boost leprosy positive image.

Conclusion: Even the network experiences several challenges, we still hope that the network will have an opportunity to perform other kinds of role such as surveillance and monitoring stigma which may occur in communities, and participating in amending existing stigma and discriminatory laws.

Keywords: Stigma, Positive image, Leprosy

#0712/ ILCABS288

A COMMUNITY-BASED CROSS-SECTIONAL STUDY- KNOWLEDGE, ATTITUDE, AND PRACTICE ON LEPROSY AMONG TRIBAL VILLAGE OF MAHARASHTRA

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Introduction: Leprosy is one of the oldest diseases of mankind. It is an infectious disease caused by Mycobacterium leprae which primarily affects the skin and peripheral nerves. Physical deformities and socio-cultural misconceptions about leprosy have led to social stigma and discrimination. Community involvement plays a significant role in bringing down the incidence of leprosy. Therefore, the population should have correct knowledge about the disease, symptoms, and transmission, for early detection and treatment of leprosy.

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Objective: To determine Leprosy-related knowledge, attitude, practices, and misbeliefs among the tribal village in one of the districts of Maharashtra.

Materials and Methods: A community-based cross-sectional study was conducted in March 2022 in the tribal village of Maharashtra. It has a total of 475 households and a population of 1785. A sample size of 200 households was selected by systematic random sampling. A structured pretested questionnaire was used for data collection. Informed consent was taken from the study subjects.

Results: Out of 200 participants, only 4% of respondents have knowledge about the causes, transmission, causative agents, signs, symptoms, and treatment of leprosy. In comparison, 14.5% of respondents don't have knowledge about leprosy. There are misconceptions such as infected water, food, and working in sunlight causes leprosy. More than 65% of people have a negative attitude towards leprosy patients and their families due to fear of infection. 90% of respondents said that they will contact to doctor if they see a skin lesion with loss of sensation. But the overall practices are poor they are not willing to travel or live with leprosy patients. There is a statistically significant difference in practices according to sex and education level.

Conclusion: Study revealed poor knowledge regarding leprosy and a high level of stigma and fear towards persons affected by leprosy. IEC activities and mass media

Keywords: Leprosy, Knowledge, Misbelief, Behavior, Tribal

#0713/ ILCABS293

A STUDY TO ASSESS THE QUALITY OF LIFE AND PREVALENCE OF DEPRESSION AMONG PEOPLE AFFECTED BY LEPROSY.

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TITLE: A study to assess the quality of life and prevalence of depression among people affected by leprosy.

Background: Leprosy is a disease that causes not only physical problems but also mental and social problems. People affected by Leprosy are at risk of developing mental illness, specifically depression. In certain regions, little research has focussed on assessing the quality of life and prevalence of depression among the people affected by leprosy.

Objective: The main objective of the study was to assess the quality of life and depression among people affected by leprosy.

Methods: A cross sectional descriptive study was conducted among 125 leprosy affected people. The samples were selected using simple random sampling. WHOQOL BREF scale was used to assess the quality of life and Beck's Depression Inventory was used to screen for depression.

Results: The study findings revealed that 45(36%) of the subjects having poor quality of life, 41(32.8%) having fair quality of life and 39(31.2%) having good quality of life. The prevalence of depression was found to be 22(17.6%), where 19(15.2%) have moderate depression and 3(2.4%) have severe depression. Significant association was found between increased age, male gender, illiteracy, unemployment, less family income, presence of deformity and high internalised stigma with the quality of life and depression.

Conclusion: Leprosy affected people are prone to depression. Poor quality of life, presence of deformity and high perceived stigma have adverse effects on their mental wellbeing.

Keywords: Quality of Life, Depression, People affected by leprosy.

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#0714/ ILCABS315

REHABILITATION OF PERSONS AFFECTED BY LEPROSY IN THAILAND

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Although Thailand has met the WHO criteria of elimination leprosy as a public health problem since 1994, there are still several persons affected by leprosy need help. According to disability survey; as of 30th April 2022, 850 persons affected are in need of rehabilitation. It is estimated that 2 000 persons living with leprosy related disabilities have not been explored. In addition, 2 617 persons affected who have received financial assistance from the Department of Disease Control also in need of other forms of rehabilitation.

There is a policy to provide rehabilitation services to persons affected by leprosy. Those who have disabilities severe enough to affect their daily lives are eligible to receive a financial assistance. In case of increasing disability, they are also eligible to receive physical and social-economic rehabilitation as necessary free of charge. To ensure the coverage of rehabilitation service, The national leprosy programme has made an effort to establish a social welfare and rehabilitation network for persons affected. As a result, a working model of a "local volunteer group" was formed to provide assistance to persons affected by leprosy and persons with other forms of disability in the community. This is done under the cooperation of local welfare and rehabilitation related organizations and persons affected themselves. The local volunteer groups enable persons affected to access mainstream public social development projects. At present, there are 60 local volunteer groups scattered throughout the country.

In addition, in several areas the groups have extended their tasks to cover persons affected by other chronic diseases and even contributed to government covid-19 prevention project. It is an opportunity for persons affected to be recognized and accepted in their own community.

Keywords: Disability, Rehabilitation, Persons affected by leprosy

#0715/ ILCABS318

THE BEHAVIORAL CHANGES AMONG LEPROSY ADOLESCENTS

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Introduction: Leprosy still has such a stigma surrounding it that people consider self-harm, behavior change, and anxiety. Depression is the most common mental health problem among leprosy patients.

Objective: This paper discusses on the behavioral changes among leprosy affected adolescents admitted at a tertiary leprosy care hospital. The objectives of this paper is to explore behavioral changes of adolescents after being diagnosed with leprosy. Furthermore it also aims to identify the behaviors of family members, teachers and peer groups towards the adolescents after they are diagnosed with Leprosy.

Materials and Methods: The study utilizes key informant interview with ten leprosy affected adolescents. Observation of the participants was also done. The interview utilized semi-structured interview guide. Data was analyzed using thematic analysis technique.

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Result: During the interview, participants shared about the experiences of being avoided from taking part in social activities, low self-esteem, tends to do self-harm, continuous suicidal thoughts, sleeping disorder and low appetite problems. Also, they were not able to enjoy things that made them happy earlier. Adolescents faced humiliating behavior, over concerned, ostracized and discriminated behavior from family members, peers and teachers behaviors towards them. Many adolescents left their studies due to hard time they faced and they were even discriminated against during the treatment period as well.

Limitation: As the participant number is very less, the findings of the study could not be generalized to whole leprosy affected adolescents.

Conclusion: The leprosy-affected adolescents feel unloved, forgotten, and uncared which compel them to change their behavior and don't make available in the crowd, try to hide from people, and have self-low esteem.

In the time of difficult situation, counseling, psychosocial support and awareness in regard to leprosy help them to overcome and manage the situation well and keep adolescents socially and psychologically fit.

Keywords: Leprosy, Mental health problem, Adolescents, Anxiety, Depression.

#0716/ ILCABS322

CHAMPIONS-LED ADVOCACY STRATEGIES IN PROJECT IMPLEMENTATION: AN IMPACT ASSESSMENT OF ADVOCACY INITIATIVES AT THE LOCAL AND STATE LEVELS BY CHAMPIONS FOR REDUCED LEPROSY DISCRIMINATION.

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Introduction: Despite India accounting for more than half of the global case load of new leprosy cases, persons affected by leprosy are still often excluded from meaningful participation in society due to disease attached stigma and discrimination which led lack of access to rights and entitlements. One of the key ways to mitigate this effectively and sustainably is to empower people with leprosy as agents and champions of change. Through capacity buildings on advocacy and social mobilisation, 'champions' can voice their experiences of living with the disease, demand rights and entitlements and be the active change agents that they want to see in their lives.

Objectives: This paper will analyse the advocacy initiatives done by champions at different levels as part of a community-based leprosy project. The paper will explore the challenges faced by champions in becoming the voices of change in communities, the processes through which they were empowered, and the impact of the initiatives that they have undertaken at different levels in collaboration with other stake holders.

Methods: This is a qualitative study drawing on reports and documents from the project (now finished) and key informant interviews.

The paper will show how advocacy initiatives impacted on rights of vulnerable people for availing social entitlements and how the advocacy efforts have contributed to influence Government Policies toward downward accountability.

Results: As a result of effective advocacy initiatives by champions, the achievement of social entitlements during the project period is (2006).

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Category wise results and Challenges of the champions during initial stage and how they overcame along with other organisations on advocacy would be addressed.

Conclusion: During the project implementation the collaborated efforts impacted the programme to get tremendous positive results and which resulted a greater number of people affected by leprosy benefitted and able to live with dignity.

Keywords: People affected by leprosy, Stigma and Discrimination, Champions, Advocacy, Social entitlements, Dignity.

#0717/ ILCABS332

REVIEW OF EFFECTIVENESS, ACCEPTANCE, RELEVANCE, CUSTOMIZATION AND DEVELOPMENT OF IEC MATERIAL USED IN NLEP

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Introduction: Information, Education and Communication activities and Behavioral changes are key strategies of NLEP to improve awareness about leprosy and to reduce stigma and discrimination against leprosy and the affected community.

Objectives: Involvement of stakeholders and excerpts to review the effectiveness of existing IEC materials on leprosy and to obtain suggestion from service providers and community members to design and develop new and innovative IEC materials on leprosy.

Methods: The study was conducted in a high endemic state in India. We conducted a 3 Focus Group Discussions (FGD); for members of Panchayat Raj Institutions including people affected by leprosy, service providers, community members and Adolescents. The group discussion focused on their awareness and effectiveness about IEC materials and suggestion to improve the same.The group discussion focused on their awareness and effectiveness about IEC materials and suggestion to improve the same.

Results: From the 3 FGDs and review of existing IEC materials key suggestions for IEC messages and activities were as follows; cardinal signs should be clearly displayed in IEC materials, awareness program in schools, public announce in villages (Munadhi) and were few suggestions to improve awareness about leprosy in the community. The suggestion on medium for dissemination of IEC activities were; Nukkad-Natak (skit) for rural areas, messages through television, wall painting and key messages about leprosy through social media such as WhatsApp and Facebook.

Limitations: The study participants consisted of rural population only and findings may not be generalized to urban population.

Conclusion: The existing IEC materials and medium needs to be adopted to different population such as adolescents and general community. Based on the input from the different groups a short booklet was made for service providers which can be used as health education materials with all necessary information on leprosy and its complications.

Keywords: IEC, BCC, Communication, Awareness, Leprosy, Capacity Building

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#0718/ ILCABS339

COMPARATIVE STUDY OF MENTAL HEALTH BURDEN EXPERIENCED BY PEOPLE LIVING IN LEPROSY REHABILITATION CENTERS TO THOSE LIVING IN THE COMMUNITIES

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Introduction: There has been several studies in the past which has correlated leprosy with the mental health burden. However this study aims to compare the mental stress experienced by People affected by leprosy living in the colonies against those living in the communities.

Objective: The study has set out to learn mental health burden experienced by two differing groups one living in the communities and others living inside leprosy colonies.

Methods: This was quantitative and cross sectional study using screening tool called GHQ with 12 questions, scores ranging from 0-3.The selection was randomized and cases were recruited on the basis of availability in a Nepal. Cut off score was 12 or higher resulted higher mental health burden.

Results: There was significant association between mental health impacts as persons got older. There was also significant association between the mental health burdens to the disability, i.e. persons with higher grade of disability reported higher score in GHQ.

Limitation: This was cross sectional study of experience of the clients of the last two weeks, and conditions in the respondents can influence the outcome.

Conclusion: Older people affected by leprosy and those with major disability tend to be experiencing psychological issues, it is suggested that qualitative approaches should be developed to further analyze the mental health burden and to address those experiencing complicated mental health issues.

Keywords: Psychosocial, Mental health, People affected by leprosy, Disability, Research, Colonies

#0719/ ILCABS352

PSYCHOSOCIAL IMPACT OF THE DISEASE IN LEPROSY PATIENTS – A QUESTIONNAIRE-BASED STUDY IN TERTIARY CARE HOSPITAL IN NORTH INDIA.

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Introduction: Leprosy is still stigmatized in Indian. The disease is often feared and misunderstood. Although efforts have been made by the government and various organizations to resolve medical aspects of the disease, little has been done to uproot the psychosocial issues related to it.

Objectives: To investigate the psychosocial impact of leprosy among leprosy patients in north India.

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Patients/ Material and Methods: We used a cross-sectional design with a quantitative approach. We aimed to include leprosy patients (on treatment as well as RFT patients). Participants were interviewed using a preformed twenty questions questionnaire in order to assess the psychosocial impact of leprosy among leprosy patients in north India.

Results: The questionnaire was interviewer administered to 60 patients. Two-third of the participants were males (n=43). Almost half of the participants (n=28) were till on MDT treatment. The major social problems faced by most of the males included unemployment (18%) in terms of removal from the workplace, difficulty to work due to impairment, loss of wages. The majority (72%) of females hesitated to disclose their disease to others for fear of social rejection. In addition, women were afraid of infecting their own children and of divorce. The majority of the participants (52%) hesitated to attend social gatherings and organise family events. Many participants (n=10 females and n=20 males) experienced anxiety, sadness, loneliness and decreased self-confidence. This was attributed to the disease, fear of infecting others and unemployment. Type of leprosy, duration of illness and education status was positively correlated with the psychosocial impact of the disease.

Limitations: none

Conclusion: This study revealed that many participants faced restrictions in social participation and mental distress.

Keywords: Psychosocial, Impairment

#0720/ ILCABS356

SOCIAL PARTICIPATION AND ACTIVITY LIMITATION AMONG PEOPLE AFFECTED BY LEPROSY

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Introduction: Disabilities in leprosy are mainly due to damage to peripheral nerves and its results in impairment of sensory, motor, and autonomic functions. The International Classification of Functioning, Disability, and Health (ICF) recognise the role of physical and social environmental factors in affecting disability outcome. Moreover, disabilities due to leprosy affect the limitation in activities of an affected individual. Hence, this study aimed to assess the association between social participation and activity limitation among people affected by leprosy.

Methods: A cross-sectional study was conducted with 358 people affected by leprosy above the age of 18 years and who were reporting at a tertiary leprosy referral hospital, Purulia, West Bengal, from April to July 2017. A semistructured questionnaire was used to interview the participants concerning their socio-economic and disease status. The Participation Scale (P Scale) was used to measure participation restriction and the (SALSA Scale) was used to measure activity limitation.

Results: Of the 358 respondents, 146 (41%) were female and 212 (59%) were male. Two hundred and fourteen (60%) were aged between 18 to 45 years and 144 (40%) had a physical disability (grade 2). The chi-square test results showed the association between activity limitation and participation restriction of the

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respondents, to be highly significant [p=0.00]. These results suggested that the respondents, who suffered from activity limitation, reported more participation restrictions than respondents without activity limitation.

Conclusion: The present study observed a highly significant association between activity limitation and participation restriction. Higher the limitation in activities leads to more restriction on social participation. The multidisciplinary rehabilitation treatment approaches would be improved the activities of daily living and enhance the social participation of people affected by leprosy.

Keywords: Social Participation, Activity limitation, Disability, Leprosy

#0721/ ILCABS404

SELF-ESTEEM OF STUDENTS AFFECTED BY LEPROSY, DEPENDENT OF THE PERSON BY AFFECTED BY LEPROSY AND STUDENTS WITH DISABILITY.

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Introduction: According to Rosenberg, self-esteem is one's positive or negative attitude towards oneself and one's evaluation of one's own thoughts and feelings overall in relation to oneself. The Rosenberg Self-Esteem Scale was selected due to its applicability in measuring global self-worth by measuring both positive and negative feelings about the self.

Objects: To examine the self-esteem of students, Person Affected by Leprosy, Dependent of the Person Affected by Leprosy, Person with Disability and other using Rosenberg's Self-Esteem Scale for students who were receiving scholarship for schooling.

Methods: 77 persons of age group 12-24 years, Affected by Leprosy, Dependent of the Person Affected by Leprosy, Person with Disability were selected for this study. Purposive sampling technique was used. Consent was taken prior the study. Data was collected using Rosenberg Self-Esteem Scale.

Results: A perusal of data on gender, category and geographical distribution of the respondent showed that male percentage (52%) was higher than that of female (48%), dependent of the person affected by leprosy (62.3%) was maximum followed by person affected by Leprosy (26%), person with disability and other (2.6%) and most population from Terai (45%) next to hilly (43%) and Mountain (12%) respectively. Significant number of respondents have a good self-esteem (77.90%) while few of them (22.10%) have less self-esteem.

Limitations: Small Sample size limits the generalizability of the study.

Conclusion: The report shows that despite being affected by Leprosy, or being depends of leprosy affected people, or people with disabilities, students largely had a good self-esteem. The research also paves way for further research to explore reasons behind the 22.10% of students who presented with low self-esteem and find ways to address them.

Keywords: Self-esteem, Leprosy, Disability

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#0722/ ILCABS419

CHILDREN PARLIAMENT'S ROLE IN INCLUSION OF CHILDREN AFFECTED BY LEPROSY

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Introduction: Children Parliament is a children's movement with deliberations, interventions and actions. Children Parliament is the best and successfully experimented participative forum for children, where the children themselves initiate, implement and monitor the processes of various developmental practices.

The Leprosy Mission Trust India's Children Unite For Action (CUFA) Project works with Children and youth affected with Leprosy and other disabilities who have limited political or social power and exposure. CUFA is aimed at encouraging integration of these children into mainstream schools/training institutions, formed and developed Children Parliaments for promoting inclusion of children affected by leprosy and disability in the mainstream society.

Methodology:

Process of formation of Children's Parliament:

Selection of Village

Identification of children parliament members (CP consists of 25-35 members depending on the size of the population of village) members include children affected by leprosy, children with disability and marginalised children.

Election of Ministers and Swearing In Ceremony to members,

Capacity building of members of children parliament on: Functional Training,Life skill Training, Value clarification exercises Functional Training, Awareness & Campaigns.

Results: Children parliament (CP) thus formed and empowered, contributes in inclusion of all children, actively involved in political and social development of community and create an environnment of no communal and caste disparities.

CPs taken initiatives and worked for the rights of children, development of children, addressed issues of rights violation and discrimination, created awareness on health, hygiene, rights and advocate for other social issues of the community

CP mainly focused on inclusion of children affected by leprosy and disability in schools and in community. CP created awareness and sensitized the parents and community members about leprosy and disability in the village.

Conclusion: Children's Parliaments ensures the voice is heard, and helps inculcate in all children the need for meaningful and inclusive development.

Keywords: Children parliament, Leprosy, Inclusion, Advocacy

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#0723/ ILCABS442

IMPACT OF SUSTAINABLE LIVELIHOODS INTERVENTIONS ON ECONOMIC CHANGE OF LEPROSY DISABLED, OTHER DISABLED AND MARGINALIZED PEOPLE IN TAMIL NADU

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Introduction: People affected by leprosy and other disabilities lack access to services due to deformities that limit their mobility at home and in the community. The physical and functional disabilities leave them with limited or inadequate livelihood options, leading to increased poverty levels, negative impressions amongst the community, and 'Self–stigma' experienced by them. To address this issue, TLM India initiated an inclusive empowerment programme (IEP), that had sustainable livelihoods as one of the components. This study intended to assess the impact of the sustainable livelihood model developed under the programme.

Research Questions: To what extent sustainable livelihoods interventions had impacted the lives of people with leprosy and other disabilities in programme locations?

Objectives: 1. To assess the impact of sustainable livelihood interventions towards economic empowerment of people with leprosy and other disabilities.

2. To study the economic factors and limitations influencing the effectiveness of this model

Methods and materials:

Study phases: The study had two phases - base line data collection and post-intervention data collection. The study was conducted in the community setting in Cuddalore (3 blocks) and Villupuram (2 blocks) districts in Tamil Nadu. The data collection methods consisted of Focus Group Discussions (FGD) and Indepth Interviews with key informants, and a survey of Total 100 beneficiaries, (50 from each district) comprising of persons affected by leprosy and other disabilities representing all age groups, gender, and disability categories using representative proportionate sampling method.

Results: The survey results showed a significant increase in income and knowledge on livelihood techno-managerial / entrepreneurial skills. Positive change was observed in the economic practices regarding income levels and social status. Producer company as a structure was found to be providing sustainable livelihood for the members and shareholders. Sustaining this livelihood on long term basis is crucial for households of those affected. An institutional platform (in the form of producer company/cooperative) run by beneficiaries have been recognized by target communities and Government, as a reliable innovative community based livelihood model for sustainable poverty reduction, social and financial inclusion.

Keywords: Sustainable livelihoods, Economic change, Leprosy disabled, Other disabled and Marginalized people in Tamil Nadu.

#0724/ ILCABS453

KNOWLEDGE AND PERCEPTION ABOUT LEPROSY IN GENERAL PUBLIC IN CONTEXT OF MAJOR HEALTH ISSUES IN THE COMMUNITY; A STUDY IN RURAL COMMUNITY IN 2 HIGH LEPROSY ENDEMIC DISTRICTS.

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Introduction: Despite declaration of elimination in 2005-06 leprosy is still a public health problem and the cause for discrimination towards persons affected by leprosy in India. The Organisation of Persons Affected

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by Leprosy (non-colony) undertook a study in community to understand the reasons for prevailing stigma-discrimination against leprosy affected.

Objectives: To assess the leprosy knowledge and perception in general public in the context of major health issues in a rural leprosy endemic community.

Material and methods: The study was conducted among 640 general public in the communities. Trained field investigators including persons affected by leprosy collected data with help of MCQ based interview schedule against informed written consent. MCQ pertaining to knowledge and perception about health were based on a set of choices among 10 major diseases including leprosy but excluding Covid 19.

Data compilation and simple analysis was done in MS-Excel.

Results:· Respondents comprised 68% men, 75% in age group of 25 to 55yrs and 45% educated; undergraduate to post graduate.

· 90% claimed to have role in decision making in the family.

· 37% revealed existence of discrimination, on various ground, in their community; 19% claimed to have experienced discrimination.

· 15% respondents consider heredity the cause for leprosy next to Sickle Cell Anaemia (33%).

· 25% consider air as medium for leprosy spreads next to TB (44%).

· 52% have inadequate/wrong knowledge about leprosy disability and transmission.

· 48% perceive that families with leprosy are vulnerable to discrimination.

Limitations: The study is based on integrated approach for 10 diseases. An independent study for leprosy may lead to different conclusion.

Conclusion: The study concludes that though there is good understanding about leprosy treatment and curability in the community unfavourable perception towards the leprosy affected may be due to inadequate/wrong knowledge regarding transmission and disability in leprosy.

Keywords: Perception about leprosy, Leprosy disability, Leprosy transmission, Stigma-Discrimination, Community, General Public

#0725/ ILCABS478

POPULAR COMMUNICATION TO FACE LEPROSY

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Introduction: Popular communication and the use of participatory methodologies are intended to ensure the recognition of people's knowledge and practices based on the reality of their communities. Objective: To report experiences of a training process with popular communication to guarantee community participation in the fight against leprosy in Mossoró, Brazil. Methods: The pedagogical planning of the course “Leprosy in Network of Interfaces: Health, Education, Society” created opportunities to problematize the context in which people affected by leprosy live, with participatory methodologies as a path. One result was In-Formative Workbook made from learning needs identified during the preparatory community stages of the

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course and translated with popular language of poetry that took theories and concepts of care aimed at people affected by leprosy. Materials made it possible to expand the students' view of health about the disease and its social influences. Strategies that allowed popular communication were used: Social Cartography consisted of recording the collective construction of the group about strengths, weaknesses, memories and affections of territories in which they work and live; Mandalas Network enabled the city's Leprosy Care Timeline; Forum Theater problematized power relations in health services. Results: The development of these methodologies culminated in the re-signification of the search, called ParticipActive. The name is justified by the need to qualify popular participation in the early identification of suspected cases, dialoguing about care and social influences of the disease, with popular communication as main strategy. Conclusion: Valuing knowledge and actions of the population favors dialogue on the endemicity of the disease, instigating recognition of the vulnerability of public policies on leprosy, stimulating autonomy in self-care personal and community. It provides opportunities for attitudes more involved with the transformation of the socio-sanitary reality, equalizing, through local language, the differences in access to health services people affected by leprosy.

Keywords: Popular communication, Leprosy, Participatory methodologies

#0726/ ILCABS500

PERCEPTION OF CLIMATE CHANGE IMPACT AMONG PERSONS AFFECTED BY LEPROSY IN BANGLADESH

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Introduction: One of the biggest challenges of humankind is tackling climate change and its adverse effect on socio-economy and eco-system. Bangladesh is one of the most climate change-vulnerable countries, which includes average rising weather temperatures, sea level, and more salinity. The impact intensified as Bangladesh is one of the most populated developing countries. People affected by leprosy, one of the most vulnerable groups within Bangladesh, are economically marginalized, socially ostracized, and often have disabilities that make it harder to respond to climate impacts.

Objective: To understand the perceptions of people affected by the leprosy of how climate change impacts their economic and health vulnerabilities.

Material and Methods: Mixed method study supported by NOREC, qualitative data collected through face-to-face and telephone interviews of 246 (Male-117, Female-129) persons affected by leprosy, from 20 districts including 5 FGDs.

Results: -61.79% of respondents had MB, 50.52% had leprosy-related disabilities, and 42% were primary wage earners.

-40% never heard about 'climate change' and 44% were unaware harmful effects of climate change

-95% thought climate-related disasters increased, including cyclones (65%), droughts (67%), floods (53%) and salinity intrusion (53%)

-83% felt that their family's debt increased due to climate change-related expenditure

-45.12% said food crisis increased, 54% mentioned reduction of food production, and 67% rising food costs

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-56% said the scarcity of medicine including MDT during disasters, and 37% faced difficulties traveling to health care points.

-30% changed income options, 11% settled in other regions, and 15% sent family members to urban.

Limitation: COVID19, proportionate data collected over phone.

Conclusion: Findings indicate climate change is already impacting respondents and increasing their vulnerability along with physical and social burdens. It's creating the risk of leprosy transmission due to migration, interrupt treatment and delayed detection. Stakeholders need to consider its impact and special for inclusive policies.

Keywords: Climate change impact, Vulnerability, Person affected by leprosy

#0727/ ILCABS510

IMPORTANCE OF LIFE SKILLS IN THE SOCIO PSYCHOLOGICAL WELLBEING OF YOUNG BOYS AND GIRLS AFFECTED BY LEPROSY

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Introduction: Family involvement in overcoming the severity of leprosy is very important in the life of leprosy sufferers in communities who experience the clinical and, psychological, social and behavioral consequences of the disease. However, this need, psychosocial, is felt to be not optimal. This study is to identify how the experiences of family members as caregivers provide assistance to leprosy in improving healing and maintaining patterns of interaction in the family.

Objectives: Family involvement in overcoming the severity of leprosy is very important in the life of leprosy sufferers in communities who experience the clinical and, psychological, social and behavioral consequences of the disease. However, this need, psychosocial, is felt to be not optimal.

Patients / material and methods: The design uses qualitative research with in-depth, face-to-face interviews with

Result: This study produced a family theme that tried to follow what would happen to leprosy, with four sub-categories: 1) Using various coping alternatives to recognize the disease, 2) Family members in the shadow of leprosy, 3) Trying to empathize with other family members. sick, 4) Caring for the emotional response of the family and seeking support.

Limitations: This systematic review was performed by searching in the Pubmed/Medline database only. Life Skills Training programs measuring both emotional and social skills, and healthy behavior outcomes. Different programs on emotional and social skills, psychological wellbeing indicators, healthy behaviors, academic performance outcomes.

Conclusion: This analysis shows that deficiency in cognitive aspects can be closed by maintaining a lifestyle in the family through efforts to understand, support, establish communication, increase maximum involvement in restoring self-confidence, especially in leprosy with psychosocial problems in the family.

Keywords: NA

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#0728/ ILCABS527

TRENDS AND GENDER VARIATIONS IN UTILIZATION OF VOCATIONAL TRAINING SERVICES BY PERSONS AFFECTED BY LEPROSY

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Introduction: Gender Stereotyping is a challenge in our country among the youth from rural areas in the selection of trades in Vocational Training and hence leading to a huge disparity, between males and females, in the salaries earned .

Objective: To observe the trends over the last 5 years with regard to accessibility and utilization of vocational training services by the leprosy affected and other disabled youths.

Methods: This is a retrospective analysis of secondary data available with the Vocational training Centre. In the past five years from 2015 to 2019 a total of 1035 trainees have been admitted in various trades. The trends have been derived over this period with reference to the no of admissions by gender, trades chosen, level of disability, type of disability, completion and defaulting rates etc.

Results: The findings show that there is a gradual increase in the total admissions from 105 in 2015 to 144 in 2019. The proportion of females who sought admission for vocational training increased from 12.4% to 38.9% over the past five years, which shows a positive change towards seeking vocational training among females.

While training in 'Tailoring' course was sought only by females(100%) as the choice of preference, in 'welder' and 'Mechanic- Motor Vehicles' only males (100%) took admission over the past five years. The trade Electrician is also predominantly of male(98%) preference and a female(2%) over the period. 'However, the overall proportion of females who utilized the services of Vocational Training is 20.3% against 79.7% of males.

Conclusions: There is a need to drive preadmission counselling to motivate female students to take up Engineering trades with a higher demand in the market so that their earning capacity can be enhanced.

Keywords: Trends, Gender, Utilization, Vocational Training, Leprosy

#0729/ ILCABS538

INCLUSIVE SELF-CARE GROUPS – THE MOZAMBICAN EXPERIENCE

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Introduction: Self-care groups are social associations involving people affected by leprosy, who meet regularly to support each other in the prevention and reduction of disabilities. For ethical and efficiency reasons, multiple neglected tropical diseases (NTDs) that cause disabilities can be included. Therefore, we now call these groups Combined Self Care Groups (CSCGs), also referred to as Integrated or Inclusive Self-Care Group (ISCGs).

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Because of lacking resources, including health staff, self-care groups are organized to promote the participants' disease knowledge; improve mental wellbeing; ensure disability and incapacity prevention and manage complications. The groups also promote socio-(economic) rehabilitation by empowering persons affected by NTDs, hoping to decrease internalized stigma and facilitate friendships by exchanging experiences.

Methods: A group of 8-18 members is set-up, coordinated by a district leprosy supervisor or health worker of the nearest health facility. It starts with a group facilitator (community member/leader, person affected). When successfully running, group members (general assembly, highest body of the group) choose a leader/president, vice-president, secretary, treasurer, adviser, and chief of hygiene. People affected by leprosy should count for at least 40% of the group members.

Results: The currently running Ready4PEP project contributed to increase the number of ISCGs. Now, there are a total of 120 ISCGs in 2 provinces in which NLR is active, with a total of 2277 members. Around 43% of the participants is female. When combining both provinces, 43% of the participants is affected by leprosy, 32% by Lymphatic Filariasis (LF), 8% by konzo and 17% by other diseases. More ISCGs are expected. The ILEP partners (NLR, TLM and AIFO) are trying to encourage the ministry of health to expand ISCGs to other provinces and to support current ISCGs, fostering sustainability.

Conclusion: Inclusive self-care groups are a good strategy to assist people affected by leprosy and other NTD's.

Keywords: Self-care, Leprosy, NTDs, Integrated, Disability, Mozambique

#0730/ ILCABS569

JUDICIALIZATION OF THE RIGHT TO HEALTH WITH A FOCUS ON LEPROSY AND OTHER NEGLECTED TROPICAL DISEASES: DIMENSIONS AND CHALLENGES IN PIAUÍ STATE, BRAZIL, 2000–2020

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Introduction: "Judicialization" of the access to health consists of lawsuits requesting the concessions of goods and/or services in health, using the judiciary as an instrument for access to health. Some understand that this instrument is beneficial, as it strengthens democracy, while others believe it can cause problems for public policies due to its impact on public budget. Despite its relevance, the magnitude and profile of such demands in the state under study is unknown.

Objective: To analyse the magnitude and profile of legal demands for general public health services and specifically for leprosy and others neglected tropical diseases (NTDs) in the state of Piauí between 2000-2020. Methods: This is a cross-sectional descriptive study, using the databases of the legal systems of the Court of

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Justice of Piauí, of lawsuits demanding, medicines, improvements, and services in the health sector from the Direct Public Administration.

Results: A total of 6,658 lawsuits were identified. After eligibility analysis (repeated cases, non-health cases were excluded), 1,384 lawsuits (20.8%) were analysed. An increase in demand was seen over time, especially since 2017. Some characteristics: origin in the capital Teresina (n=614; 44.4%), age 40 to 59 (n=372; 26.9%), female (n=761; 55.0%), farmers (n=123; 8.9%), demand for public legal assistance (n=1,063; 76.8%), and upheld (n=594; 42.9%). Five (n=5; 0.4%) judicial demands were identified for NTDs (1 for visceral leishmaniasis and 4 for leprosy) related to patients' right to health care.

Limitations: The limitations are related to the databases used, which were built with a focus on the operational needs of the field of law, making it difficult to process data for scientific research.

Conclusion: Judicialization of the right to health is expressive and growing in the state of Piauí. The low demand related to NTDs could mean limited access not only to health, but also to the judiciary.

Keywords: Health's judicialization; leprosy; neglected topical diseases

#0731/ ILCABS582

MEASURING QUALITY OF LIFE (QOL) OF PEOPLE WITH SEVERE NTD DISABILITIES IN INDIA: PILOTING A MINIMUM ESSENTIAL DATA, INTERVENTION-FOCUSED QOL TOOL

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Introduction: Leprosy and lymphatic filariasis (LF) are major disabling and high morbidity NTDs in India, having multidimensional consequences. We developed a minimum essential data, hybrid quantitative and qualitative, intervention-focused tool to holistically measure overall quality of life (QoL) of men and women with severe NTD disabilities in India. The tool covers the constructs of activities of daily living (ADL), stigma , participation restrictions, mental wellbeing, and QoL as it has traditionally been measured. Additionally, the tool includes a community stigma survey component.

Objectives: To pilot the tool and holistically measure overall QoL of men and women suffering with severe leprosy and LF disabilities in India.

Material and methods: 150 persons (75 male; 75 female) with WHO Grade 2 leprosy disability (n=30), WHO Grade 3+ lymphedema (n=95), and LF hydrocoele (n=25), from 39 villages in one administrative Block in India, were selected through stratified random sampling. Four male and four female trained data collectors conducted the pilot in February 2022 using KoBo Toolbox for data collection and analysis.

Results: The average overall QoL score was 77.07, indicating an unacceptable (≥60) quality of life. Regardless of disease condition, men showed significantly higher, and therefore worse, average overall scores ($p<.001$, 95% CI 4.973,15.426) than women. Individual constructs scored varying degrees of 'unacceptable'. Men scored significantly higher than women for Stigma ($p<.001$), Participation Restriction ($p<.001$), and QoL ($p=.005$). Women scored higher under ADL ($p<.001$). There was no statistical gender difference between mean scores for Mental wellbeing.

Limitations: Our resources did not permit a survey of a comparative sample of people with WHO Leprosy Grade 1 disability, and WHO LF Grades 1 and 2 disability.

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Conclusion: Our intervention-focused QoL tool for NTD disability translates the scores into the parameters of 'acceptable' and 'unacceptable', thereby placing high emphasis on interventions to improve unacceptable quality of life.

Keywords: Quality of life, Tool, Leprosy and other NTDs, NTD disability

#0732/ ILCABS614

ART AS A STRATEGY TO SENSITISE THE COMMUNITY ABOUT LEPROSY AND CARE FOR SKIN DISEASES

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Introduction: The prejudice surrounding hansen's disease requires intelligent strategies capable of reaching people, and attractively alerting them about the disease.

Objectives: Exhibit paintings made by people affected by hansen's disease, as a strategy to raise awareness among the population.

Case Description: In Piauí's State, Northeast Brazil, MORHAN and partners, created the project: Take care of your skin, don't forget hansen's disease! They brought awareness campaigns about hansen's disease and skin diseases. Among the mobilization activities, we highlighted the exhibition of paintings made by people affected by hansen's disease, in which they expressed their feelings through art: their life stories, childhood, hopes, and pain brought by hansen's disease. The exhibition lasted 05 days and took place in a Shopping Center, pictures were painted (11 pictures) by 13 artists affected by hansen's disease, accompanied by the Reference Center Maria Imaculada.Conclusion: Most people who visited the exhibition were able to reflect on the paintings and interact with the artists, enabling a dialogue where hansen's disease could be addressed as a disease that has prevention and cure but is still surrounded by prejudice and affected people still suffer from stigma and exclusion.

Keywords: Stigma, Hansen's disease, Social Inclusion, Art

#0733/ ILCABS619

A SURVEY ON THE IMPACT OF THE CORONAVIRUS PANDEMIC ON PERSON AFFECTED BY LEPROSY AND THEIR FAMILIES

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Objectives: Impact of the covid 19 and long-time lockdown affected millions of people. Many organizations supported for short period. Although, many unmet needed of persons affected by leprosy are hinder. This study focuses on the impact of covid 19 among person affected by leprosy and their families.

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1. This survey will examine current challenges of SHG members to access the right of food, shelter, access to health care and essential medicine

2. Receive feedback from our targeted communities on COVID 19 responses (effectiveness/ impact)

3. Receive inputs from our targeted communities on needs not addressed and their priorities, and map overall sector-specific humanitarian needs emerging at this stage

4. This survey will examine the situation of stigma and discrimination that SHG members have experienced.

Methods: A cross-sectional survey will be conducted in the SHGs in Dhanusha, Mahottari and Sarlahi districts of Province 2 and Sindhuli district of Bagmati province. The methodology to be used will be both qualitative and quantitative data collection. The data will be obtained from a sample of 15 existing SHGs including 100 members - leprosy affected disabled and marginalized - using interview and observation methods. The sample size will be determined by the number of personnel available for data collection.

The maximum percentage of participants in the survey belong to the Dalit and Janajati ethnic groups, the most backward and oppressed sections of the society. Men and women are eligible to participate in this survey.

Keywords: Leprosy, Person affected by Leprosy, Covid-19, Lockdown, Stigma, Discrimination

#0734/ ILCABS629

LEPROSY AWARENESS AMONG FAMILIES OF PERSONS AFFECTED BY LEPROSY; A CURRENT STATUS IN RURAL COMMUNITIES IN 2 HIGH LEPROSY ENDEMIC DISTRICTS.

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Introduction: Leprosy for ages is known for its impact on the affected and their family members due to social stigma. However, last decade or two has seen noticeable reduction in social stigma and discrimination towards people affected and their family members. On the contrary, the family which is expected to be the support system is seems to have been posing challenges to the affected. In this context, the Organisation of Persons Affected by Leprosy (non-colony) decided to study leprosy awareness in the families of leprosy affected.

Objectives: To understand the level of leprosy awareness in families of persons affected by leprosy in rural communities in leprosy endemic geographies.

Material and methods: The study was conducted among 605 families of persons affected by leprosy selected on the basis of Random Stratified Sampling Method. Trained field investigators including persons affected by leprosy collected data with help of MCQ based interview schedule against informed written consent.

MCQ pertaining to knowledge and perception about leprosy were of opinion seeking nature. Data analysis was done in MS Excel.

Results: Respondents comprised 57% female, 64% in age group of 25 to 55yrs and 47% educated; high school to undergraduate and 81% married.

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· 32% to 62% respondents have either wrong or inadequate knowledge pertaining to various basic scientific aspects of leprosy.

· On average one in two has wrong knowledge about transmission of leprosy.

· 60% believe that leprosy is curable with treatment.

Limitations: Multiple choice opinion seeking questions may influence response differently.

Conclusion: The study reveals low to moderate level of leprosy awareness in the families of persons affected by leprosy in rural community. Such inadequate leprosy awareness in the families may attribute to unfavourable behaviour towards affected. Authors recommend NLEP to design a sustainable family oriented leprosy educational programme for families of affected.

Keywords: Leprosy awareness, Leprosy education, Stigma and discrimination, Families of persons affected by leprosy

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#0735/ ILCABS632

PERCEIVED STIGMA TOWARDS LEPROSY AMONG COMMUNITY MEMBERS IN HYDERABAD, TELANGANA, INDIA

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Background: Leprosy , a disease of antiquity, remains one of the major stigmatizing conditions affecting multiple facets of a patient's life. Much of this burden is owed to patients' own family, the community, health care workers and even themselves. The objective of this study was to explore the prevalence of stigma against leprosy among community members in Hyderabad, Telangana, India.

Methods: Data will be collected over a period of 6 months. Participants will be administered two standardized questionnaires - STIGMA - EMIC (community version) - Explanatory Model Interview Catalogue - and the Social Distance Scale. Results will be analyzed using Chi-Square test to correlate.

Results: Of the 108 participants enrolled in the study so far, 58% felt that those with leprosy might conceal the condition, 47% said that a diagnosis would cause shame or embarrassment in their community, 42 % did not want a patient to be the caretaker of their children and an overwhelming 72 % felt it might cause difficulty in getting married and 66% felt it might cause problems in an ongoing marriage. An encouraging finding was that only 23% said Leprosy would cause difficulty in finding work and 35% said they'd dislike buying food from them.

Conclusion: Despite the advancements and availability of treatment, the various preventive and rehabilitative measures undertaken by the government, the prevalence of stigma was found to be still substantial. Its consequences are pervasive, affecting not just physical and mental health, but also having significant impact on health seeking behavior, social interactions, marriages and employment, with major economic implications to the individual, community and country. Hence, more rigorous awareness programmes and educational activitiesat all levels of health-care to create an inclusive space for those affected.

Limitations: This study may underestimate stigma at the grass-root level, being conducted in an urban setting.

Keywords: Stigma, Discrimination, Community, Leprosy, Hansen's

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#0736/ ILCABS633

CAN THE HEALTH OUTCOMES OF SELF-HELP PROGRAMMES BE SUSTAINED? A SCOPING REVIEW

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Introduction: Considerable resources are spent in LMICs on implementation of community-based programmes for health improvements, including establishment of self-help groups (SHGs). SHGs are also frequently employed in the empowerment of people affected by leprosy. However, sustainability of such programmes is often not taken into consideration when planning. An evaluation of the sustainability of these programmes is critical in determining how effective programmes are in achieving their goals over the longer term and whether activities continue once the funding ends.

Objectives: To i) explore/establish the evidence on sustainability of self-help programmes; ii) explore/understand the implications of our findings for leprosy self-help programmes.

Methods: We systematically searched PUBMED, Web of Science, EconLit and Google Scholar for peer reviewed studies published to January 2022. Studies were included if they evaluated a self-help group/programme, from LMICs, for people with a health issue, and/or health providers and program managers who have developed or managed self-help interventions.

Results: The initial search identified 6116 articles, of which 637 were duplicates. After screening titles, 71 article abstracts were screened. Seventeen articles met our inclusion criteria following full-text review. Studies were conducted in India (n=13), Africa (n=3) and Nepal (n=1). Ten studies were focused on SHGs for women. Overall, studies reported better outcomes for individuals that participated in SHGs compared to similar non-participants. Sustainability of SHGs was influenced by factors such as: trust, social environment, economic support and security, leadership capacity and socioeconomic status (moderately poor more likely continue in SHGs than poorest).

Discussion: Studies provided limited description of interventions; detailed descriptions will help understand full implications. Most SHG programmes focused on health outcomes resulting from implementation of SHGs rather than longer term sustainability. Also, majority of the studies reported results from programmes that had evolved from an initial SHG programme without discussing approaches to sustainability, if any.

Keywords: Self-help groups, Sustainability, Interventions, Programmes, LMIC, Micro-finance

#0737/ ILCABS634

SMOKING AND ALCOHOL USE AND THEIR ASSOCIATED FACTORS AMONG LEPROSY AFFECTED PATIENTS IN RURAL SOUTH INDIA – AN ANALYTICAL CROSS-SECTIONAL STUDY.

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Introduction: Smoking and alcohol consumption are known to cause serious health related issues. Studies focusing on the prevalence of alcohol use and tobacco consumption among the patients affected by leprosy are unavailable in India and very limited across the world.

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Objectives: To estimate the prevalence of smoking and alcohol use among leprosy affected population in the community service area of a tertiary care hospital for leprosy and to study the associated factors.

Materials and Methods: This cross-sectional study was conducted among leprosy affected patients in the community service area of the hospital. Convenient sampling method was used to recruit the subjects. The study participants were ≥25 years of age. Data on sociodemographic factors, tobacco and alcohol use of 41 male and 10 female leprosy affected subjects were collected. Standard screening tools were used to screen for problematic smoking and alcohol usage.

Results: The prevalence of smoking was 24.4% (n=10) and alcohol use was 46.3% (n=19) among men. None of the female subjects included in the study had reported tobacco or alcohol use. Among smokers, 60% were screened positive for problematic smoking and had moderate to high nicotine dependence. Among those who consumed alcohol, 52.6% were screened positive for problematic drinking, 47.4% had hazardous drinking patterns and 15.8% were found to have alcohol use disorder. It was also found that those who smoke had significantly higher odds of alcohol consumption (OR 7.27, 95% CI 1.3-40.4, $p<0.05$). There was no significant association between sociodemographic factors, number of years since diagnosis, compliance to treatment, presence of disability and smoking or alcohol use.

Limitations: Probability sampling is not used. This study is not powered to study the factors associated.

Conclusion: Higher prevalence of smoking and alcohol consumption among men affected with leprosy is of serious concern and therefore needs specific primordial prevention strategies.

Keywords: Problematic smoking, Alcohol use, Leprosy, Community

#0738/ ILCABS649

ENSURING REDUCTION OF LEPROSY STIGMA IN INDIA THROUGH INVOLVEMENT OF LEPROSY-CURED PERSONS IN COMMUNITY BASED PARTICIPATORY ACTIVITIES

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Introduction: Goffman defined stigma as 'an attribute that is deeply discrediting' and referred to this condition as a 'spoiled identity'. Weiss and Ramakrishna have defined stigma as "a social process or related personal experience characterized by exclusion, rejection, blame, or devaluation that results from experience or reasonable anticipation of an adverse social judgment about a person or group identified with a particular health problem" .Thus , removing stigma is a deep social condition. While there have been many educational and awareness building activities, the participation, not merely consultation, of affected persons in the development and implementation of stigma reduction interventions is grossly lacking.

Objective: To experiment active involvement of persons affected by leprosy and cured, some with disabilities and others without, in several stigma-reduction activities as part of a community-based action research, and assess the reactions of the patients and community.

Methods: and materials: Patient involved community activities were carried out in 3 endemic states of India, Uttar Pradesh, West Bengal and Chhattisgarh. Facilitation of the activities and assessing the reactions were done by community organizers.

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Findings: The patient involved activities as decided by the community members included inviting leprosy patients to village level meetings and the participation of the leprosy afflicted in local social, religious and cultural activities viz. chou dances, folk dances, prize distribution by the leprosy afflicted etc. The most fruitful outcome was the confidence developed by the affected person and the great respect from the community overcoming their earlier prejudices and misconceptions. Thus, both perceived and enacted stigma were significantly reduced by the involvement and participation.

Conclusions: Well-organized involvement of cured leprosy patients accelerates stigma reduction, is a powerful social antidote for removing fear and misconceptions on leprosy, its causation and prevention, and enforcing their belief that deformity is not inevitable and leprosy is curable.

Keywords: Leprosy Stigma, Community Action, Patient Involvement, India

#0739/ ILCABS650

METHODOLOGY AND FINDINGS FROM A PARTICIPATORY EVALUATION OF LEPROSY STIGMA REDUCTION PROGRAM IN INDIA

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Introduction: Comprehensive Program Evaluations of Public Health Programs can be expensive, time-consuming and ignores the decision-makers in a Community . A novel community-based program evaluation was carried out in 3 leprosy endemic states of India , viz., Uttar Pradesh, West Bengal and Chhattisgarh where participatory action programmes were designed and implemented by the community against leprosy stigma . In this paper, the evaluation methodology is briefly described along with salient features on the inputs and impacts

Objective: To describe the formation and methodology for program evaluation of leprosy stigma reduction activities through community volunteers based on inputs and outcomes

Methodology: After considerable discussion with community 2 evaluators for each block were chosen from outside the area of community action, mainly males, from the age group between 25-45, graduates and had some field experience in data collection and orientated in simple interviews. After suitable orientation to the evaluators, and consent of the public, a total of 494 individuals were interviewed using specially formatted interview schedules..

Results: About 97% said they are aware of the community action to reduce and eradicate leprosy stigma, and came to know about referral of leprosy patients to take proper treatment (90%), about 83% were aware of Community members visiting to patients' residence to reduce the participation restrictions, about 81% of the respondents mentioned that they realized the changing situation of the leprosy afflicted in their village.

Conclusions: Involvement of community leaders in formulating strategies, planning, implementation and evaluation of the activities achieves a greater response from the community in leprosy stigma reduction. Handling the psycho-social problems with cultural importance essentially needs the involvement of native leaders. Community Evaluation, based on the parameters determined by the community members, served as an effective inbuilt review of theprogramme with better communications within the community.

Keywords: Leprosy Stigma, Community Action Methodology, Community Evaluation Methodology

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#0740/ ILCABS678

"ACCEPTABILITY OF A PEER SUPPORT NETWORK FOR LEPROSY AFFECTED INDIVIDUALS IN A HOSPITAL IN THE UNITED KINGDOM "- PRELIMINARY RESULTS

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Background: Leprosy is a rare disease in the United Kingdom, approximately 10 new diagnoses in people who have migrated are made annually. Leprosy is a highly stigmatising disease. People who are diagnosed with leprosy may avoid disclosing their diagnosis and consequently may lack many of the support networks that are important in ensuring adherence to treatment and wellbeing. The cohort of service users of the leprosy clinic at our Hospital is diverse, with individuals from many countries.

Community groups and peer support groups are well established in leprosy endemic countries. We determine whether peer support would be acceptable to leprosy clinic service.

Methods: We are conducting individual semi-structured interviews with all leprosy clinic service users who give permission. The interviews are conducted in English with interpreter services when necessary.

We are collecting anonymised data of age, gender, language spoken at home, time since diagnosis, disability grade and experience of leprosy reactions.

Results: To date, we have interviewed 10 individuals. The median age was 45.5 years and median time since diagnosis was three years. Six were men. Nine had disclosed their diagnosis to family and/or friends. Countries of birth were Bhutan, Brazil, Dominican Republic, Egypt, Guyana, Nepal, Philippines, Sri Lanka, and Sudan. Four individuals were interested in a peer support group. However, eight would like a phone call. One had joined a support group in their country of birth.

Reasons for not wanting to participate in a group included fear of disclosure, discussing distressing issues, time, language skills.

Conclusions: Our early, interim results demonstrate a minority of service users were interested in peer support. Further data are being collected but exploration of the reasons for the apparent lack of popularity of a peer support group will be interesting to explore.

Keywords: Leprosy, Peer support group, Social aspects, Stigma

#0741/ ILCABS682

TO ASSESS STIGMA ASSOCIATED WITH LEPROSY USING SOCIAL DISTANCE SCALE: A CROSS-SECTIONAL STUDY IN NORTH INDIA.

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Introduction: Stigma for leprosy is still rampant in our society and has a direct impact on patient's self-confidence, lessens willingness of patients to have appropriate treatment, thereby delaying diagnosis and increases risk of deformities and can generate socio- economic problems.

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Aims & Objectives: 1. To assess social attitude of general population towards leprosy patients.

2. To correlate demographic profile of community with stigma associated with leprosy.

Materials and Methods: It is a cross-sectional study in which we quantified stigma associated with leprosy using a self- modified social distance scale. 100 randomly selected participants visiting OPD of a tertiary care hospital in North India were interviewed using our self-modified social distance scale (SDS), consisting of 12 questions. Each question had a set of four options with score from 0 to 3, which respondents would choose as per their choice. Cumulative score of all questions would be used as a marker of stigma associated with leprosy.

Results: Males comprised 56% of the participants (n=56). Mean value of the score was 23.53 and 26.5 in males and females respectively. Mean score of urban and rural participants was 26.16 and 28.64 respectively. Participants associated with health care department had least value of mean score (17.34) amongst all occupational groups. Mean score of businessmen and housewives was 27.18 and 28.8 respectively.

Conclusion: The mean score of males being less than females signifies more stigmatisation by females than men. It was found that individuals associated with health care sector were more considerate towards affected individuals than those belonging to any other sector, which signifies importance of educating masses about leprosy to decrease stigma associated with it.

Keywords: Leprosy, Stigma, Social distance scale

#0742/ ILCABS708

MEDIA COMMUNICATION USED TO MOBILIZE THE COMMUNITY TO TALK ABOUT HANSEN'S DISEASE

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Introduction: The mass media, such as TV, radio, blogs, reach an important part of society, but it is not common to include Hansen's disease in their agenda.

Objectives: To use the mass media as part of the "Don't forget Hansen's disease" campaign strategy.

Experience report: To not forget leprosy it is necessary to communicate, this is the phrase that was adopted in the global campaign that was created by the Sasakawa Foundation (Don't forget Hansen's disease). In December 2021, before the World Leprosy Day, the members of MORHAN in Piauí along with different partnerscarried out a strong mobilization on TV channels, radio, and blogs. This mobilization extended until March, besides World Day of Combat to Hansen's disease. As result we conducted a total of 15 interviews, granted to different media channels, radio, TVs, and blogs of state and national scope. The interviews were done with members of MORHAN, people affected by Hansen's disease, talking about diagnosis, treatment, prejudice, and rights of people affected by leprosyonce they played a leading role in overcoming the challenges of the disease.

Conclusions: There was full access to the media to agree to talk about Hansen's disease. We believe that this mobilization on mass media channels made it possible to reach different places in the country and raise awareness about the issue and the global campaign. The testimonies of people affected by Hansen's disease

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also enabled people facing the same problem to empower themselves and seek support to overcome prejudice against the disease.

Keywords: Hansen's disease, Social Inclusion, Communication

#0743/ ILCABS709

RESULTS IN BRAZIL ON THE CAMPAIGN, DON'T FORGET HANSEN'S DISEASE

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Introduction: The global campaign "Don't Forget Leprosy Disease!" was initiated by the World Health Organization's Goodwill Ambassador for the Elimination of Leprosy, Mr. Yohei Sasakawa, to remind people about the disease, forgotten in the pandemic

Objectives: To present the results of the Don't forget Hansen's disease campaign in Brazil and reflect on the impact of this mobilization.

Case Description: In Brazil, there was an average drop of 50% in the detection of new cases of Hansen's disease between 2019 and 2021, due to the pandemic and the increase in neglect. MORHAN in 2021 started in August 2021, as the main articulator of the campaign (don't forget Hansen's disease), raising awareness of other organizations, society, and governments. We signed terms of commitment with municipalities, states, and social organizations. We produced educational materials, pamphlets, and banners; highlighting a song, chosen as the campaign theme, recorded as a clip in Portuguese and English, with the participation of Mr. Yohei Sasakawa. We produced stickers, T-shirts, and banners with the campaign slogan, which are in circulation in all regions of the country. We held the First Latin American and Caribbean Meetings of Young People Affected by Hansen's Disease online, with the participation of family members and activists and from this meeting we produced a special edition for Morhan's Newspaper. We held "rounds of conversation" with community health agents in different cities and a workshop on Hansen's Disease for journalists and communicators that resulted in the publication of a booklet. We also held marathons, bike rides and cultural activities in different cities.

Conclusion: The dissemination of the worldwide campaign brought about the involvement of affected people, students, health professionals and government people, who mobilised the whole country and invited the whole population not to forget Hansen's disease.

Keywords: Hansen's disease, Social Inclusion, Communication

#0744/ ILCABS735

COVID RELIEF FOR RURAL COMMUNITIES IN GUNTUR DISTRICT, ANDHRA PRADESH STATE

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Introduction: COVID-19 has rapidly affected our day to day life, businesses, disrupted movement of people & goods. People affected by leprosy, the poor, marginalised communities are significantly affected. Many

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homeless were left with empty stomachs. FAIRMED with it's supported partner GRETNALTES extended COVID relief measures to the poor and vulnerable people living in rural areas especially people affected by leprosy living in colonies.

Objectives: 1. To facilitate uninterrupted leprosy care services for people affected by leprosy.

2. To support the district health department to combat COVID-19 in rural community of the district.

3. To provide with food to the homeless and starving.

Methodology:

a. Situational analysis of the district and prioritizing the need,

b. Collaboration with the district health functionaries, panchayat raj institutions and people's organisation

c. Resource mobilization and delivery of services

Result:

· 2,215 COVID Care Home Isolation kits were distributed

· 1,628 deprived people provided with cooked food

· 363 families of people affected by leprosy were provided with groceries.

· 150 mosquito nets /blankets and the like were provided to families.

· 827 ulcer care kits to the needy people affected by leprosy

· 85 reconstructive surgeries were carried out

· Ensuring continuation of MDT for the ongoing patients on treatment.

Limitations:

• Limited resources hindered our operations and reach.

• Fear and stigma related to Covid was a challenge

Conclusion: The term COVID had struck widely to the human races, and it is undeniable that it came with a huge learning for all of us in the medical domain. FAIRMED and GRETNALTES were

Keywords: Covid pandemic, People, Ulcer care, Home isolation kit, Immediate need of people during lockdown

#0745/ ILCABS748

OPPORTUNITIES AND CHALLENGES FOR INTEGRATING TRADITIONAL HEALERS IN LEPROSY CARE: A NARRATIVE REVIEW

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Introduction: Leprosy affected people in low and middle-income countries often rely on traditional healers for care. This practice often contributes to a delay in seeking appropriate care at formal health institutions

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and ultimately poor outcomes. Over the last 30 years, there has been academic and practice discourse on the need to incorporate traditional healers into the diagnosis, treatment, and referral practices.

Objective: To evaluate existing programs and interventions which aim to improve traditional health workers ability to diagnose, refer and treat patients.

Methods: In April 2022 searches were conducted on PubMed, Web of Science and Google scholar. Studies were included in the review if they reported on i) traditional healers and health workers perceptions, attitudes, and approaches to collaboration between health ii) a primary intervention aimed at improving traditional healers' ability to diagnose, refer or treat patients.

Results: Initial searches resulted in 483 articles of which 36 articles met our inclusion criteria and were included in the study. All but four articles reported on studies conducted in sub-Saharan Africa and the three most frequently addressed health conditions were: mental health (n=5), HIV/AIDS (n=7) and Tuberculosis (n=4).

Attitudes and perceptions on the value of collaborating and cooperation between traditional healers and formal health systems were mixed. Overall traditional healers seemed to have a greater appreciation of western medicine and collaboration compared to formal health workers. Programs which provided training to improve traditional healer's referral or collaboration with formal health systems reported positive outcomes.

Limitations: Heterogeneity of study designs and outcomes meant that we could only conduct a narrative synthesis.

Conclusions: Leprosy programs attempting to improve co-operation and integration of traditional healers into formal health system need to focus on two key areas i) addressing attitudes and perceptions of traditional healers and health professionals ii) provide contextual and

Keywords: Traditional healers, Leprosy, Care integration, Review

#0746/ ILCABS763

CONDUCTING PEER COUNSELING FOR PERSONS AFFECTED BY LEPROSY: EXPERIENCE FROM INDONESIA

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Introduction: Persons affected by leprosy often develop mental health disorders due to disability, chronic wounds and reactions as well as stigma and socioeconomic problems. In turn, depression and anxiety may also worsen disabilities and chronic reactions. However, the capacity of the health services to provide mental health care to persons affected with leprosy is still limited. Peer-counseling approach has been shown effective in reducing stigma towards leprosy, however, its use in reducing mental health problems has not been evaluated.

Description of the case: We conducted a peer counselling project in one district with high number of cases and reported cases of stigma towards persons affected by leprosy. A five-day training was conducted to peer counsellors who were recruited from the local organization for persons affected by leprosy who met the following requirements: 1) aged between 25-45 years old, 2) had ever been diagnosed by leprosy, 3) had a minimum of secondary education,

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4) good communication skills and 5) willing to be counselor during the project. They provided 5-6 one-hour counseling sessions to clients who were referred by leprosy health workers with the following criteria: 1) age 18-65 years, 2) diagnosed with leprosy in the last 3 years, 3) showed signs of mental disorders, reaction and chronic wounds, being stigmatized or experience of discrimination, patients with denial etc, 4) no severe medical and psychological problems and willing to participate in the counseling sessions. The counseling approach combined rights-based counseling model and behavioral activation approach. After one year, a total of 29 clients have completed six counseling sessions with positive outcomes such as reduced reaction and improved participation.

Conclusion: Peer-counselling intervention is feasible to be conducted and well-accepted by persons affected with leprosy. Its effectiveness in reducing stigma and risks of mental health should be further explored.

Keywords: Leprosy, Mental Health, Stigma, Anxiety, Depression, Peer Counselling

#0747/ ILCABS774

UNDERSTANDING CLIMATE CHANGE AS ONE OF THE BARRIERS TO ACHIEVING ZERO LEPROSY

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Introduction: Socio-economic risk markers for leprosy—poverty, food insecurity, crowded living conditions, lack of proper sanitary conditions—need to be seen in the context of climate change, which threatens to push more people into poverty, elevate risk of frequent pandemics, and disrupt health systems. Worryingly, most of the endemic states (Bihar, Chhattisgarh, Odisha) are highly vulnerable to climate change, more so because the existing health systems are not resilient to address competing health priorities. COVID-19 is an example. In the given situation, India is wedged between two pressing needs: addressing social determinants of health and strengthening and integrating health systems to serve people affected by leprosy effectively.

Objective: The WHO Global Leprosy Strategy 2021-2030 considers 'zero infection and disease' as one of the long-term goals, for which barriers have been identified largely through the lens of clinical and service delivery aspects. Another dimension that is not explored much is the layered challenges that climate change poses before us. The findings of the study, which will draw from stakeholders from diverse disciplines, will feed into the national and sub-national strategies that organisations are developing to support the National Leprosy Eradication Program.

Methodology: During the study, the team will look through peer-reviewed research papers, government reports, reports from health and policy think tanks, and media reports. They will also have one-on-one interviews (both offline and online) with doctors, researchers, leprosy-focused organisations (to understand their interventions) and duty bearers in different tiers of governance.

Conclusion: With reports flagging concerns over climate anomalies reversing the gains in health systems, this study will help in building systems and policies that are resilient, inclusive, and effective in achieving zero leprosy.

Keywords: Leprosy service delivery, Climate change, Health systems strengthening, Global Leprosy Strategy

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#0748/ ILCABS789

PSYCHOLOGICAL BURDEN AND STIGMA OF LEPROSY PATIENTS

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Introduction: Leprosy is a chronic infectious disease caused by mycobacterium leprae . If inadequately treated , it may cause permanent disability. As a result may cause complex problems in many aspects of patients with leprosy . Leprosy stigma is a type of social stigma , a strong negative feeling towards a person with leprosy relating to their moral status in society .The stigma of leprosy is a real phenomenon in many peoples life that affects their physical , psychological, social and economic well being . This study helps us to determine how stigmatisation affect the psychological aspect in patients life and identify the coping mechanism employed by the patients in managing the stigma .

Objective/s: To investigate the stigma and psychological burden from perspective of leprosy patients .

Patients and methods: A cross sectional study was conducted among leprosy patients visiting a tertiary care hospital in south India . The psychological burden and the stigma of leprosy patients was assessed using The EMIC STIGMA SCALE .

Results: 120 patients were interviewed . Among them 8 were excluded from the study .Most of the responders were Males (70%) with average of 37 years ; majority (50%) belonging to upper lower class of modified Kuppuswamy socioeconomic scale . Everyone in the study faced stigma in some or the other form . Score ranged from 3-39 with the Median score at 20. 42 (38%) ,32 (29%), 38 (34%) patients had their scores 0 -15,16-30,31-45 respectively .

Limitations: Small sample size

Conclusion: Our study has therefore demonstrated that stigmatisation of leprosy patients is still prevalent in our community and so we have to focus on health education and counselling programmes

Keywords: Stigma, EMIC stigma scale, Rehabilitation, Psychological burden, Leprosy patients

#0749/ ILCABS790

EFFECTIVENESS OF LIFE SKILLS EDUCATION FOR ADOLESCENT STUDENTS IN LEPROSY COLONIES OF WEST BARDHAMAN, WEST BENGAL

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Introduction: Adolescents often face a number of crisis, dilemmas and challenges as the child moves from dependency to autonomy, while they undergo physiological and physiological changes. An immediate and effective response from a responsible system of education is required for adolescents to tackle these challenges.

Objective: To assess the effectiveness of life skill education (LSE) for adolescent students from leprosy colonies of West Bardhaman, West Bengal

Material and methods: Total 100 adolescent of both genders aged 14 to 20 years were randomly selected from five leprosy colonies for assessing their knowledge on adolescence and LSE related concepts and issues

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etc. and for imparting LSE. Total 10 LSE sessions were imparted to them using ice-breaking, brain storming activities and discussions sessions. Pre and post tests were conducted using semi- structured questionnaire.

Results: Pre-test revealed that 5 adolescents had some knowledge on LSE, 75 had no knowledge on life skills and 25 were unsure of their responses. After imparting LSE sessions, there was significant changes as the post-test result showed that 71 adolescents had gained the knowledge, 12 had no knowledge on life-skills, and 17 were unsure of their responses. Pre -test showing that 95 adolescents did not have any knowledge on life skills was a matter of serious concern, revealing that knowledge gained on LSE in schools were not optimal and adequate. It was found that few adolescents are very inquisitive to learn about life skills and they could relate the skills imparted to their daily life experiences.

Limitation: There is a need to impart LSE to a greater number of adolescents, however few of them could be covered.

Conclusion: LSE was effective in enhancing relevant knowledge and skills of adolescents. It is a good solution for empowering and equipping them with life skills to become a productive member of society.

Keywords: LSE- Life Skills Education,

#0750/ ILCABS817

QUALITY OF LIFE AND HAPPINESS OF PERSONS AFFECTED BY LEPROSY AND RELATED FACTORS DURING COVID-19 EPIDEMIC IN THE UPPER SOUTHERN REGION OF THAILAND

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Introduction: Leprosy is a chronic infectious disease caused by Mycobacterium leprae. Delayed treatment may contribute to disability leading to stigma against persons affected.

Objective: To study quality of life and happiness of persons affected and related factors.

Material and Methods: This cross-sectional study was conducted among 125 persons affected who benefit from financial assistance living in the 7 upper southern provinces. Data was collected between April 1 – 31 May 2021. Collecting tools were WHOQOL-BREF-THAI 26 standard tool and interview form developed by the researchers during the April epidemic of COVID-19 in Thailand.

Results: The results showed that the overall quality of life was at moderate level (86.40%), the same level as each of its 4 components: physical (82.40%), mental (71.21%), social relationship (64.00%) and environment (82.40%). The overall level of happiness and social support were at moderate levels, 64.80% and 80.00% respectively. Factors related to quality of life were age < 60 years (aOR 3.23, 95% CI 1.15-9.04) and income > 6,000 baht (aOR 4.22, 95% CI 1.09-16.38). Most of them requested increased food allowance, health check-up in the community once a year, convenience during hospitalized period, health information and other information in a thorough and accurate manner.

Conclusion: To increase the quality of life of persons affected, their requests should be taken into consideration. Increasing food allowance would be a burden to organization concerned. Socio-economic rehabilitation service for persons affected and their families would be a sustainable solution.

Keywords: Quality of life, Happiness, Social support, Factor related to quality of life.

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#0751/ ILCABS821

SOCIAL ORGANIZATIONS AND GOVERNMENT SECTORS COLLABORATION AS A STRATEGY TO STRENGTHEN SELF-CARE GROUPS OF PEOPLE AFFECTED BY LEPROSY IN ENDEMIC TERRITORIES IN BRAZIL

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Introduction: Leprosy, when not diagnosed and treated early, can cause physical disability, intensifying suffering and exclusion. Self-Care Groups (SCGs) have become important for promotion of autonomy aiming at a better quality of life and social inclusion. However, SCGs have not yet been implemented in all leprosy endemic areas in Brazil.

Description: NHR Brasil has developed and integrated partnerhsips between government institutions, the movement of people affected by leprosy and universities, for the implementation and strengthening of SCGs since 2014. Currently, there are 13 SCGs supported by the partnership, in endemic areas in the North and the Northeast regions, reaching about 160 people affected by the disease. Ensuring the quality and sustainability of the SCGs, NHR Brasil and partners provide technical-scientific, political and financial support, consisting of: the research promotion and financial support on this topic; the development of teaching materials for SCGs; training of SCGs coordinators; the training of professionals for the clinical management of wounds and prevention of physical disability; the use of a kit of validated scales aimed at monitoring psychosocial effects of participating in SCGs; holding, along with federal, state, municipal governments and universities, regional meetings with SCGs participants; planning and monitoring of activities; and the inclusion of SCGs participants in leadership training courses.

Conclusion: The establishment of partnerships between NHR Brazil and governmental and non-governmental institutions in Brazil has been a powerful strategy to strengthen SCGs as an intervention capable of promoting self-care for people affected by leprosy. The SCGs have become powerful spaces for promoting autonomy and empowerment and to stimulate positive change. It has been a successful experience to work on the priority strategies as stated by the World Health Organization aimed at 'zero disabilities' and 'zero exclusion'.

Keywords: Self care group, Leprosy, Brazil

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#0752/ ILCABS827

SOCIOECONOMIC REHABILITATION AS EMPOWERMENT AND INCLUSION STRATEGY FOR PEOPLE AFFECTED BY LEPROSY IN THE STATE OF RONDÔNIA, BRAZIL

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Introduction: Physical disabilities and the stigma associated with leprosy are factors that cause social exclusion, unemployment and limited engagement in daily activities. Promotion of socioeconomic rehabilitation for individuals affected by leprosy is important to rupture the context of social vulnerability.

Description: This socioeconomic rehabilitation project started in 2017 aiming to generate income for people affected by leprosy, members of Self-Care Groups (SCGs) in the State of Rondônia. The project was implemented by NHR Brasil in collaboration with the government of the State of Rondônia. From the start, 12 training workshops have been held, with 110 participants; people affected by leprosy and their families. The workshops taught the production of typical foods and biojewels (jewels made with seeds, plants and wood from the region). During these meetings, and the monitoring of productions, the promotion of self-care and empowerment were priority activities. People affected by leprosy and their families received an artisan certificate and were encouraged to participate in regional exhibitions and on the virtual market. The monitoring and evaluation process, based on the Theory of Change, disclosed greater self-esteem, engagement, social participation, better living conditions and empowerment to claim social rights. In 2020, the project was awarded as one of the 10 best innovative solutions for Sustainable Development Goals in Brazil. One of the dissemination strategies in 2021 was the launch of a fashion show with bio-jewels with the direct participation of project members along with health professionals in the state capital.

Conclusion: The socioeconomic rehabilitation project has contributed to the empowerment and social inclusion of people affected by leprosy in Rondônia. The project led to reintegration of these people into the labor market with greater social participation and overcoming stigma.

Keywords: Socioeconomic rehabilitation, Leprosy, Brazil

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#0753/ ILCABS834

STRENGTHENING LEADERSHIP OF PERSONS AFFECTED BY LEPROSY AND OTHER NEGLECTED DISEASES TO OVERCOME SOCIAL EXCLUSION: AN EXPERIENCE IN BRAZIL

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Introduction: Social participation in the context of leprosy and other Neglected Tropical Diseases (NTDs) is a continuous challenge. In addition to stigmatization and discrimination, the social vulnerability and fragility of public policies have limited access to health. The social empowerment of affected people characterizes is a key strategy for inclusion, thus, innovative strategies need to be developed in order to strengthen advocacy and favor spaces for training and the engagement in the fight for rights.

Description: In 2018, NHR Brazil launched a workshop to train and strengthen leaders representing persons affected by leprosy or other NTDs, addressing health, citizenship, and human rights issues. Over the years, two groups have been formed, with the participation of 48 leaders, being 20 people affected by leprosy, representing 11 Brazilian states in the North, Northeast and Midwest regions. Structured in 3 modules, the 80-hour course has adopted Paulo Freire's pedagogy, prioritizing dialogue, people's contexts, diverse knowledge, and active participation. The second edition of the course was funded by UNESCO and took place in 2021, virtually due to the COVID-19 pandemic. A course guide was produced enabling replication in other areas. The course also includes practical activities that stimulate leadership, including effective participation in debates, mainly in the Brazilian Social Forum to Combat Infectious and Neglected Diseases.

Conclusion: This is an innovative strategic approach that has favored the exchange of experiences, engagement, and mobilization of leaders in NTD endemic areas, with greater participation. The development of the course throughout the process and the production of materials have stood out, contributing to the empowerment and awareness of the role of these actors as agents of social transformation. We believe that the course can contribute to effective public policies and health rights of people affected by leprosy and other NTDs.

Keywords: Social rehabilitation, Leprosy, Brazil

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#0754/ ILCABS935

PSYCHOLOGICAL BURDEN AND QUALITY OF LIFE AMONG LEPROSY PATIENTS- A QUESTIONNAIRE BASED STUDY

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Introduction: Leprosy is a Neglected Tropical Diseases (NTDs) known to cause stigma and discrimination in low-and middle-income countries. As a mutilating, disfiguring, contagious, and incurable disease, leprosy has caused widespread fear in society. The stigma associated with leprosy can be a substantial burden, affecting many aspects of a person's quality of life and mental health.

Objectives: The main objective is to assess levels of psychological problems and quality of life among leprosy affected patients.

Materials and Methods: Cross sectional questionnaire based study was conducted among 85 patients affected by leprosy in tertiary health care in east-coast of Andhra Pradesh, India. The aim of this study was achieved by using World Health Organization Quality of Life (WHOQOL)-BREF Questionnaire, and Depression Anxiety Stress Scales (DASS) as questionnaire tools.

Results: Majority of the patients had a low quality of life, and two-thirds(59%) of them had a moderate level of depression, and almost one-thirds(27%) of them had a severe level of anxiety, while the majority had a moderate level of stress; additionally, more than half of them had a moderate level of total DASS.

Limitations: Few respondents had difficulty understanding certain psychological concepts, there few leading questions were sometimes asked, potentially leading to interviewer bias.

Conclusion: According to the study, more than 50% of leprosy patients have mental health issues, emphasising the necessity of mental health care services in leprosy. Interventions are needed to develop coping mechanisms of persons affected by leprosy, to treat mental health disorders such as depression in this population, and to prevent and alleviate the mental health impact of leprosy.

Keywords: Leprosy, Quality of life, Depression, Anxiety

#0755/ ILCABS973

ANALYSIS OF PSYCHOLOGICAL STATUS AND COPING STRATEGIES OF LEPROSY PATIENTS

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Leprosy patients have anxiety, depression and low self-esteem due to disease and social factors, resulting in poor treatment and rehabilitation compliance, rebellious psychology and even extreme behavior. Therefore, leprosy patients are far away from society and the rate of deformity and disability increases. How to make

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patients recover better and avoid adverse psychological factors, The skin quality of life index (DLQI) and the depression scale of the epidemiological research center were used to analyze the mental health of leprosy patients. According to the survey results, the self-management ability and fine nursing measures were implemented for the patients. Through a series of intervention measures for 3 months, the scores of mental status, emotional function and quality of life of leprosy patients were significantly better than those before implementation ($P < 0.05$), It shows that self-management ability and fine nursing can significantly improve the anxiety and depression of leprosy inpatients, improve the quality of life and reduce the occurrence of leprosy deformity. It is conducive to patients' rehabilitation and integration into society.

Keywords: Leprosy, Psychological status, Coping strategies

#0756/ ILCABS1045

ENHANCED WATER SANITATION AND HYGIENE (WASH) INFRASTRUCTURE FACILITIES IN LEPROSY COLONIES OF VIZIANAGARAM DISTRICT, STATE OF ANDHRA PRADESH

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Introduction: People affected by leprosy who reside in colonies are old with a disability of the eyes, hands, and feet. Lack of adequate water, no customized toilets, and improper drainage facilities are the issues identified. To strengthen the work on equity and inclusion and ensure WASH rights to all, the project introduced the development of disability-friendly toilets and safe water. The "Samruddhi" Project was implemented in three leprosy colonies in Vizianagaram District, Andhra Pradesh. It enhanced the dignity of life among the targeted populations through access to basic water, sanitation amenities.

Advocacy efforts were taken with the support of leprosy Forums at the State and District level for the WASH needs of this population. Engaged the Rural Water and Sanitation Department, to conduct water quality tests. Simultaneously, the family members have engaged in the promotion of self-care practices among the leprosy-affected persons.

Objectives: Increase demand for better access to WASH services among Leprosy disabled persons.

Materials & Methods: Promotion of WASH among Leprosy colonies in terms of WASH infrastructure development and WASH Education. The Intervention is implemented for 4 months period.

Results: · Increased access to improved WASH facilities for 76 Households covering 260 members

· promoted self-care practices among 51/96 Leprosy affected persons

· Provided WASH Education to 112 colony inmates promoting recommended WASH behavior in leprosy colonies for good health and for self-care of leprosy disabilities.

· Constructed 11 new toilets; Repaired 20 toilets; 2 Borewell platforms repaired

· Water safety ensured

Conclusion: The WASH needs of persons affected with leprosy have to be addressed as a priority. Educating and engaging the family members for support is crucial. Community partnership will increase the support for leprosy-affected families thus reducing stigma and discrimination.

Keywords: WASH, Leprosy colonies, Infrastructure development, Advocacy, WASH Education

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LABORATORY ASPECTS

#0757/ ILCABS148

UCP-LATERAL FLOW ASSAY IN LONGITUDINAL SAMPLES OF LEPROSY PATIENTS DEVELOPING REACTION

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Background: Reactions in leprosy are immune exacerbations in the human host in response to either circulating *M. leprae* antigens or mimicking host epitopes. About 30-40% of the leprosy cases experience a Type – 1 (reversal) reaction (T1R) or a Type-II (Erythema Nodosum Leprosum) (T2R) reaction. Host immune gene expression signatures that demonstrate a plausible association with reactional outcomes in leprosy prove useful as predictive biomarkers that aid in early diagnosis of reactional states and in designing early treatment interventions that prevent nerve damage and consequent demyelinating neuropathy in leprosy. The aim of the study was to identify host-associated gene-expression signatures that act as predictive biomarkers for reactional states in leprosy.

Methods: Peripheral venous blood was collected from the participants in the longitudinal arm. Samples were collected before reactions (at the time of recruitment), in reaction if some of the participants develop reactions during the course of treatment and post-reaction. Serological and gene expression markers were tested at three-time points. Upconverting phosphor lateral flow assay (UCP-LFA) was used to detect levels of specific cytokines in serum samples.

Results: LL/BL/BB patients were compared to BT/TT patients and showed significantly higher CRP and anti-PGL-I antibody levels . The positive bacterial index also showed higher CRP and anti-PGL-I antibody levels than patients with a BI of 0. At the timepoints that patients suffered from a reaction, higher CRP levels were observed compared to patients without a reaction. Further dividing the reactional patients based on the type of reaction, regardless of treatment showed that the increased levels of anti-PGL-I and CRP are associated with patients experiencing type 2 reactions in this cohort

Conclusion: Serum levels of CXCL10, IFN-γ, and anti-PGL-1 IgM antibodies can be used as serological markers to correlate with reactional states in leprosy.

Keywords: UCP-FLA, Reactions, Leprosy, Serological Markers

#0758/ ILCABS179

UTILITY OF MULTIPLEX POLYMERASE CHAIN REACTION IN EARLY DIAGNOSIS OF PURE NEURITIC LEPROSY IN SKIN BIOPSIES AND NASAL SWABS: EXPERIENCE IN 21 PATIENTS AT A TERTIARY CARE CENTRE.

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Introduction: The diagnosis of pure neuritic leprosy (PNL) is challenging and its true incidence often remains underestimated due to absence of skin lesions, limitations in using standard bacteriological and histopathological

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methods, and lack of simple, reliable diagnostic tools to detect Mycobacterium leprae. This study was aimed to investigate utility of multiplex polymerase chain reaction (MPCR) for early diagnosis of PNL in easily accessible and less invasive extra-neural biopsy sites, including skin biopsies (SB) and nasal swabs (NS).

Objectives: To detect Mycobacterium leprae in SB and NS of PNL cases using MPCR.

Material and Methods: A total of 21 PNL cases were recruited. NS and SB from innervation territory of an 'enlarged or tender' nerve were collected. DNA was extracted and subjected to MPCR (targeting RLEP, 16SrRNA and SodA genes) and individual gene PCR (targeting RLEP gene). The PCR products were analysed on 3% agarose gel electrophoresis.

Results: 47.6% (n=10) SB and 38% (n=8) NS were positive for *M. leprae* on MPCR; only 14.28% (n=3) SB and no NS were positive with PCR targeting RLEP gene, indicating higher sensitivity of MPCR for detection of *M. leprae* (38% vs 0% in NS and 47.6% vs 14.28% in SB) in PNL.

Limitation: Records of nerve conduction studies, ultrasonography, and histopathology were unavailable for all patients for better correlation of findings.

Conclusion: MPCR is a sensitive tool for detection of *M. leprae* and is valuable in diagnosis of PNL in less invasive biopsy samples at this crucial juncture of post leprosy elimination era.

Keywords: Multiplex, PNL, Skin biopsy, Nasal swab, PCR

#0759/ ILCABS195

FOLLOW UP STUDY OF MB LEPROSY PATIENTS' BACTERIOLOGICAL INDEX AS SEEN ON SLIT SKIN SMEAR TEST IN A TERTIARY CARE HOSPITAL FOR LEPROSY

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Introduction: Even as the dread of deformity & functional limitation in leprosy perturb human minds Hansen's disease lingers on among the most marginalized communities in the world. The slit skin smear test is a quick and invasive lab technique to identify *M. leprae*. This study aims at analyzing a decreasing trend of the bacteriological grade of MB leprosy patients, at the time of diagnosis and RFT (released from treatment).

Materials & Methods: Patients visiting the outpatient department of Dermatology at Schieffelin Institute were recruited for the study. The focus was on patients who showed a high bacteriological index of 5+ or 6+. Patient details such as age, sex, clinical classification, and the skin smear test data were collected. Statistical analysis was done using SPSS version 16.

Results: Overall 60 patients were studied out of which 68.3% were males and the remaining 31.7% were females. Their ages ranged from around 20 to 71. As per the clinical spectrum of our study, 95% were LL and 5% were BL who visited our hospital yearly for a period of 3 to 5 years. Out of the 60 patients, a decline in BI with the yearly visits from a high BI was looking for. 95% showed a gradual decline in BI of 4+ to 1+, while 5% showed a 2+ rise after an initial fall in BI.

Conclusion: We conclude that most of the patients responded well to the MDT and showed a gradual decrease in their BI, revealing no Drug resistance. A minority whose BI again hiked brings the suspicion of relapse, however further study needs to be done to confirm this.

Keywords: Slit skin smear, Bacteriological Index, Leprosy, Multi Drug Therapy

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#0760/ ILCABS256

ABSENCE OF PRESENCE MIGHT NOT EXACTLY MEAN THE PRESENCE OF ABSENCE- DO WE NEED BETTER TOOLS FOR BACTERIOLOGICAL DIAGNOSIS OF PB LEPROSY?

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Introduction: Early detection of leprosy is one of the high priority needs for leprosy control. Paucibacillary leprosy (PB) poses a diagnostic challenge owing to few lesions, few bacteria and at times mimicking other skin conditions. Microscopy which is only 50% sensitive might not really pick *M leprae* in skin lesions. Hence, there should be tools for specific bacteriological diagnosis of leprosy especially when it presents with fewer lesions.

Objective: To investigate the usefulness of PCR for specific bacteriological (confirmatory) diagnosis in PB leprosy

Methodology: It is cross sectional study conducted on leprosy patients newly diagnosed in an active case finding survey during the in 2019, at Kushanpally, a tribal hamlet in Telangana, India with a population of 1600 inhabitants, were studied. All the participants were investigated as per the standard NLEP guidelines with medical examination and slit skin smear examination. Additionally slit skin PCR and nasal swab PCR for leprosy were conducted. Slit skin smear microscopy and PCR results were correlated with number of skin lesions.

Results: 33 (8 MB and 25 PB) new cases were diagnosed and registered for MDT. Out of 25 PB cases, one presented with pure neuritis form, 19 consented to give slit skin samples, whereas all the 25 consented for nasal swabs. All the slit skins were negative for AFB, while 11/19(58%) were positive for PCR (single lesion-7, 2-5 lesions-3, pure neuritic-1). 13/25(52%) nasal swabs were PCR positive (in participants with single lesion-9, 2-5 lesions-3, pure neuritic-1).

Limitation: Small sample size

Conclusion: PCR is a useful tool for confirmatory diagnosis of leprosy especially in paucibacillary cases with single lesions. This helps in better therapeutic decisions in bacteriologically positive leprosy. Further improvement of such tests as point of care PCR tests would help in early and specific detection of leprosy.

Keywords: Paucibacillary, Skin lesions, PCR

#0761/ ILCABS260

TRANSMISSION OF RESISTANT STRAIN OF *M. LEPRAE* IN THE CONTACTS OF LEPROSY CASES: A REPORT

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Introduction: Implementation of multi drug therapy (MDT) has significantly reduced the global prevalence of leprosy. Rifampicin, dapsone and ofloxacin resistance has been reported by many countries. This is a

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major concern especially at the stage of elimination. Drug resistance (DR) could be primary and secondary. Secondary DR develops while patient is on treatment however, primary DR is noted in new patients. Primary DR could develop either because of contact with an already drug resistant patient or earlier treated with same medicine for other than leprosy disease. Development of primary resistance is a major threat to achieve zero leprosy target by 2030.

Objective: To understand the reason for development of primary drug resistance and to understand the transmission dynamics of drug resistant strain of *M. leprae* in endemic community.

Patients / methods: Total of 11 resistant cases for any of the three drugs rifampicin (n = 6), dapsone (n = 2) and ofloxacin (n = 6) were ear marked for family visit. All the HHCs (n = 27) were screened for the presence of disease and slit skin smear of all the contacts were collected. RLEP-PCR was done to find out presence of *M. leprae* DNA. All the positive samples were further evaluated for the presence of drug resistant strain by PCR followed by Sanger sequencing. Sequence data was analysed by blast and MEGA 5.1

Result: Out of 27 HHCs we observed RLEP-PCR positivity in 18 HHCs. Out of 18 RLEP-PCR positive we observed presence of rifampicin resistant strains in 3 HHCs of rifampicin resistant cases, ofloxacin resistant strains in 2 HHCs of ofloxacin resistant cases and no resistant HHC for dapsone.

Limitation: Small sample size.

Conclusion: Contact tracing of HHCs of drug resistant cases for their immediate treatment is needed and to stop further transmission of drug resistant strain.

Keywords: Drug resistance, Transmission, Primary drug resistance, Secondary drug resistance, Household contacts, Leprosy

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#0762/ ILCABS274

UTILITY OF MIMICKING B CELL EPITOPES BETWEEN MYCOBACTERIUM LEPRAE AND HOST AS PROGNOSTIC BIOMARKERS IN TYPE 1 REACTION IN LEPROSY

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Introduction: Several Mycobacterial infections including leprosy and tuberculosis are known to evoke autoimmune responses by modulating the homeostatic mechanism of the host. Recently, we have reported eight mimicking B cell epitopes (BCEs) between Mycobacterium leprae and host proteins, against which significantly higher levels of antibodies were observed in Type 1 Reaction (T1R) leprosy patients in comparison to non-reaction (NR) leprosy patients.

Aim: The aim of the present study was to evaluate a longitudinal immune response against BCE in T1R.

Material and Methods: A total of 100 clinically diagnosed cases consisting of 50 T1R and 50 NR were recruited and followed up for subsidence and onset of reaction, respectively. A total of eight BCEs between HSP65 of *M. leprae* and keratin, 50S ribosomal protein and lysyl tRNA synthetase of *M. leprae* and myelin basic protein (MBP) were used to evaluate the autoimmune response. The level of autoantibodies against BCE was estimated across each subject group before, during and after T1R.

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Results: The mean level of antibodies against BCEs of HSP65 i.e., HSP4, HSP5 and HSP6 were higher in T1R when compared to NR ($p < 0.0001$, $p < 0.001$, $p < 0.001$, respectively). Similarly, antibodies' level against BCEs of keratin i.e., KER1, KER2 and KER4 ($p < 0.0001$, $p < 0.05$, and $p < 0.0001$, respectively) and of MBP i.e., MBP50SB1 and MBPLMB2 (ns, $p < 0.01$, respectively) were higher in T1R. The longitudinal autoimmune responses against BCEs are being examined.

Conclusion: The present study indicated the association of BCEs with T1R. The validation of the association in a longitudinal study could be utilized for the development of a serological test for the diagnosis of T1R. Early diagnosis of the cases of leprosy with T1R may facilitate the treatment before the onset of deformity consequent to nerve damage in T1R

Keywords: Molecular mimicry, Reactions, B cell epitopes, Biomarkers, Autoimmunity

#0763/ ILCABS298

A CROSS SECTIONAL STUDY OF X - RAY CHANGES IN HANDS AND FEET OF LEPROSY PATIENTS WITH DEFORMITIES.

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Introduction: Leprosy is a chronic disease caused by Mycobacterium leprae, infectious in some cases and affecting the peripheral nervous system, the skin, and certain other tissues. It is unique among bacterial infections in that it affects the peripheral nerves and damage them. The disease is feared for the deformities and disabilities it produces in its host. Leprosy is associated with social stigma, and patients suffer social discrimination because it often leads to visible physical deformities. Bone changes are common in leprosy.

Aims and objectives:

1. To assess the x ray changes in hands and feet of leprosy patients with deformities.

Materials and methods: In our 18 months study 100 leprosy patients were included after taking informed consent. In each case detailed history, thorough general physical, local and systemic examination were done with reference to clinical features of leprosy. X ray of hands and feet both anteroposterior and oblique view was done.

Results: Lepromatous leprosy (LL) was the most common spectrum comprising 63 % of patients. Deformities were most commonly observed in LL patients. Grade 2 (62 %) disability was higher than grade 1. Most common deformities of hands, feet and face were claw hand (53%), ulceration of feet (54%) and madarosis (41%) respectively. Most common x ray changes in hand and feet of leprosy was osteoporosis (60%). X – ray changes in hands of leprosy patients in descending order as follows osteoporosis (60%), contracted fingers (53%), absorption of Terminal phalanges (37%). X – ray changes in feet of leprosy patients in descending order as follows osteoporosis (60 %), absorption of Terminal phalanges (52%), contracted toes (35%).

Limitations: Relatively small sample size.

Conclusion: Leprosy is a disease of great antiquity. It is considered to be important mainly because of its potential to cause permanent and progressive physical disability.

Keywords: Leprosy, Bone, X-ray.

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#0764/ ILCABS340

MYCOBACTERIUM LEPRAE AND NON-TUBERCULOUS MYCOBACTERIAL ASSOCIATION IN THE ENVIRONMENT OF LEPROSY ENDEMIC REGIONS IN INDIA

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Introduction: Several scientific reports show that viable *M. leprae* are found in the environment. However, what are the NTM species present along with *M. leprae* in environment of leprosy patients in the inhabitant areas has not been explored.

Objectives: The aim of present study was to find out the different NTM species those are associated with viable *M. leprae* in soil samples.

Materials & Methods: Total 390 soil samples were collected from different areas such as bathing, washing, sitting and entrance of the house of leprosy patients. The environmental samples were processed and culture on the Lowenstein Jensen media. NTM were confirmed by PCR sequencing method. Real time PCR was used detection of viable *M. leprae* from environmental samples.

Results & Discussion: Ninety-seven NTM isolates were recovered from 359 soil samples and presence of viable *M. leprae* could be detected in 12% of these samples. First time new NTM species such as M. timomense, M. holsaticum, M. yongonense, M. szulgai, M. europaeum, M. simiae and M. chimaera were isolated from Indian soil environment. Highest recovery of NTM (35%) and presence of viable *M. leprae* (19%) were observed in soil samples from bathing area followed by soil samples from washing area (30% NTM i and 15% viable *M. leprae*). Soil samples from sitting area and entrance area had comparable number of NTM isolates (19% and 20% respectively) and viable *M. leprae* (5%). Phylogenetic tree was showing a close association between these NTMs and *M. leprae* in these samples.

Conclusion: Several NTM species of pathogenic and non-pathogenic in nature along with *M. leprae* were isolated from soil samples and these might be playing a role in helping *M. leprae* survival in environment and causing disease and maintaining leprosy endemicity in India.

Keywords: NTM, *M. leprae*, LJ medium, Phylogenetic tree, Environmental samples

#0765/ ILCABS364

A COHORT STUDY : ROLE OF HELMINTHIC PARASITE INFECTION IN THE DEVELOPMENT OF LEPROSY

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Introduction: India alone contributes nearly 25% to the total global helminthic parasitic infection cases. Studies have suggested that the helminth infection can regulate the host's immune response and make them

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susceptible to chronic infections. The role of helminthic infection in susceptibility to leprosy has not been explored.

Objectives: The aim of the present study was to find out the role of helminthic parasite infection in susceptibility to leprosy.

Materials & Methods: A total of 369 stool samples were collected from 96 patients and 273 household contacts (HHC) from endemic villages of Purulia and Champa. The samples were screened for the presence of intestinal parasites using the microscopic method. Further, cytokine profiling (Th1 and Th2) of helminth positive and negative leprosy patients was carried out to study their correlation with leprosy.

Results: & Discussion: Intestinal parasites were detected in 35 (37%) leprosy patients and 72 (26%) HHCs and were not found to be statistically significant (Two-tailed P = 0.13). Further, HHCs were followed up at 6 months intervals for the development of signs and symptoms of leprosy for up to 4 years. It was noted that 30 contacts developed leprosy disease and only 3 of these had parasite infection earlier. Cytokine profiling results show that in spite of having high levels of IFN-γ (Th1 immunity) the patients were suffering from leprosy. IL-12 and IL-10 cytokines did not statistically correlate with either helminth positive or helminth negative leprosy patients.

Conclusion: The study indicates that intestinal parasite infection has no role to play in the development of leprosy.

Keywords: Helminthic Infections, Stool samples, Leprosy, Cytokine, ELISA.

#0766/ ILCABS372

CLINICO-DERMOSCOPIC AND HISTOPATHOLOGICAL FEATURES CORRELATION IN HISTOID HANSEN'S DISEASE

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Clinico-dermoscopic and histopathological features correlation in histoid Hansen's disease

Introduction: Histoid Leprosy(HL) is highly bacilliferous form of leprosy and known for unusual presentations that pose diagnostic challenge. Dermoscopy, being noninvasive diagnostic aid helps in the diagnosis of various infections and inflammatory conditions by demonstrating a characteristic pattern. It can expand the armamentarium of diagnostic methods in HL.

Objective: we have evaluated clinical, dermoscopic findings of HL and correlated them with histopathological features.

Patients/material and methods: We conducted an observational study of HL patients who were vistied to our out patient department. we have evaluated clinical, dermoscopic and histopathological features of a series of HL patients fulfilling inclusion criteria. (inclusion criteria- clinical, histological findings and slip skin smear positive cases)

Results: A total of four patients (Male) were included.

3 patients had family history Hansen disease. All 4 patients were having papules is a most common finding, while one patient had umbilicated papules. We noted dermoscopically whitish-yellow stuctureless areas , peripheral rim of pigmentation and additionally we observed focal vascular structures such as branching,

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linear , and crown vessels that result from the pressure of granuloma pushing the dilated vessels upwards. A whitish-yellow structureless areas corresponds to granuloma and whitish color is probably due to whorled arrangement of spindle-shaped histiocytes in the granuloma in HL. Histopathology showing epidermal atrophy, grenz zone. Dermis is replaced by spindle shaped histiocytes in an interlacing pattern.The relative absence of skin appendages aided in differentiating leprosy from other granulomatous disorders.

Limitation: Smaller sample size is limitation factor in our study.

Conclusion: Dermoscopy, as a non invasive modality, may aid in the diagnosis of histoid leprosy and should be used as a handy tool for diagnosis this disease.

We have no conflict of interest to declare.

Keywords: Histoid leprosy, Dermoscopy

#0767/ ILCABS376

FOCAL TRANSMISSION OF MYCOBACTERIUM LEPRAE INFECTION IN LEPROSY FAMILIES OF ENDEMIC REGION IN INDIA

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Introduction: Various mechanisms of transmission have been suggested for leprosy. The transmission of leprosy occurs by contact between leprosy cases and healthy persons especially in the household situations. Presence of *M. leprae* in nose indicating its nasal carriage and environmental sources have been proposed for disease transmission by several workers.

Objectives: The objective of the present study was to find out the focal transmission of viable *M. leprae* from clinical and environmental sources to healthy individuals in household environment.

Patients / Materials & Methods: A Total of 100 leprosy patients and their 293 household contacts (HCs) were enrolled in this study. The clinical and environmental samples were collected from these subjects and their inhabited surrounding areas. PGL-1 antibody levels in saliva from cases and HCs were determined by ND-O-HSA ELISA. PCR and Real time (RT) PCR were performed in slit-skin-smears (SSSs), nasal swabs and environmental samples followed by genotyping of *M. leprae* to trace the transmission link in leprosy.

Results: RT-PCR positivity for *M. leprae* was noted in 7viability4% SSSs of leprosy patients and 10% of HCs. It was further noted that RT-PCR positivity was 19% in soil as compared to 12% of water samples. Follow-up of the HCs in leprosy families in these endemic regions showed development of disease in HCs within a duration of 3 months to 5 years. Further, genotyping of *M. leprae* showed that SNP type 1 of *M. leprae* is circulating in the endemic region with majority being SNP subtype 1D. ELISA using antibody responses to ND-O-BSA showed high levels of antibody in cases, HCs, and non-contacts of endemic region indicating that all subjects were exposed to *M. leprae* infection.

Conclusion: This strongly indicates that viable *M. leprae* from patients and environmental sources might be playing as a source of infection to HCs

Keywords: Transmission, Genotyping, ELISA, Viable *M. leprae*, Environmental samples

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#0768/ ILCABS383

ANALYSIS OF MYCOBACTERIUM LEPRAE GENE TRANSCRIPTS IN CLINICAL AND ENVIRONMENTAL SAMPLES

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Introduction: Leprosy is a chronic infectious disease caused by an intracellular bacillus, Mycobacterium leprae, an uncultivable bacillus in vitro. Recently, it was noted that viable *M. leprae* are found in the environment, especially around the inhabitant areas of leprosy patients. Transcriptome analysis is important for the investigation of viable bacilli and unique gene targets of *M. leprae* and their expression in environmental conditions.

Objectives: The aim of this study was to isolate the RNA and compare the gene expression profile of *M. leprae* from human and environmental sources.

Materials & Methods: RNA was extracted from biopsies of lepromatous cases and 50 environmental soil samples. Transcriptome data extraction was performed in the samples from Genotyping Pvt. Ltd India. Quantitative real-time PCR was performed for the validation of gene expression.

Results: Transcriptional analysis of the *M. leprae* genome using the *M. leprae* RNA microarray demonstrated that those 1,604 transcripts had a mean signal to noise ratio (SNR) cut-off value ≥ 2. The data have been deposited in NCBI through GEO Series accession GSE68192".

The numbers of differentially expressed genes obtained by comparing the environmental samples (treated) vs. leprosy patient samples (controls) were 1056 (upregulated) and 580 (downregulated). Interestingly, the functional category of transcript upregulation was observed in Respiration (109 out of 198), cell wall (577 out of 1075), and downregulation of transcript was observed in virulence (23 out of 45), translation (1324 out of 2931), detoxification (62 out of 92), metabolism (1942 out of 3504), regulatory protein (610 out of 1175), lipid function (917 out of 1700) in environmental soil samples as compared to clinical samples.

Conclusion: The different level of gene expression of *M. leprae* transcript in environmental samples, thus indicate their role in survival in the natural environment and provides an insight into the function of *M. leprae* genes outside

Keywords: Viable *M. leprae*, Environmental and clinical samples, Gene expression, Upregulation, And down regulation, Transcriptome analysis

#0769/ ILCABS416

CLINICOPATHOLOGICAL CORRELATION OF SINGLE PATCH LEPROSY

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Introduction: Cardinal feature of leprosy is hypoanesthetic patch – either single or multiple. Evolution of single lesions depends on host immunity. Histopathology may not always correlate with clinical diagnosis.

Objective: To correlate the histopathological findings with clinical findings in single patch leprosy and its utility in management

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Results: Among 25 patients,12are females and 13 are males.On examination:

Hypopigmented patch was seen in 13 patients, xerotic patch in 8 and erythematous plaques in 4.

Temperature sensations are decreased in 21 out of 25.

Nerve trunks were enlarged in 7 patients and regional cutaneous nerve in 2 patient.

Slit skin smear is negative in all patients.

Clinical classification: BT in 15,TT in 7, Indeterminate in 3.

Histological examination: 14 as BT, 7 as TT,2 as Indeterminate,2 as BT with type 1 reaction.

Clinicopathological correlation with skin biopsy: more correlation is seen with TT(7 of 25 cases).

Limitations: Pilot study in view of sample size

Conclusion: Most of the single lesions are diagnosed as Indeterminate, TT and BT leprosy.

Single lesions are still commonly seen and may evolve into other end of spectrum.

Early diagnosis of disease and addition of MB-MDT probably helps to prevent progression of spectrum and have an impact on epidemiological control of leprosy.

Keywords: Clinicopathological correlation of Single patch Leprosy

#0770/ ILCABS424

CORRELATION OF DERMATOSCOPIC FINDINGS IN LEPROSY WITH CLINICAL SPECTRUM AND HISTOPATHOLOGY:A PROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Leprosy, also known as Hansen's disease, is a chronic granulomatous infection with varied clinical presentations spanning from the tuberculoid spectrum to the multibacillary lepromatous spectrum. The variety of clinical presentations makes leprosy a diagnostic challenge and thus has to be differentiated from other granulomatous dermatoses.

Objectives: To evaluate the dermoscopic findings in different spectrum of leprosy and to correlate it with the clinical and histopathological findings

Material and methods: This was a prospective observational study of treatment naïve leprosy patients over a period of 6 months. The study patients were categorized as per Ridley-Jopling classification and dermoscopy,slit skin smear and biopsy of every patient were carried out

Results: A total of 55 patients were recruited in this study.Of 55 patients, two cases were of indeterminate Hansens,one case of TT Hansens,ten cases of BT Hansens ,four cases of BB Hansens, seventeen cases of BL Hansens,twenty one cases of LL Hansens ,nine cases were in type 1 reaction and thirteen cases were in type 2 reaction.Brown-orangish and white coloured structureless areas were noticed throughout the spectrum,indicating the presence of dermal granuloma.A relative absence of skin appendages and diminished pigment network were

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seen in the tuberculoid spectrum .We noticed sparing of skin appendages,chrysalis like areas,scaling,accentuated pigment network in the lepromatous spectrum.Follicular plugging was observed in lesions of type 1 reaction meanwhile erythema,dilated blood vessels were steadily seen in lesions of both type 1 and type 2 reaction

Limitations: Our study is limited by a small sample size

Conclusion: The variable presentations of leprosy have always posed a diagnostic dilemma.In many cases,invasive procedures such as biopsy are often required to confirm the diagnosis and categorization. Dermoscopy is a non invasive tool that can complement histopathological and SSS tests

Keywords: Leprosy, Dermoscopy, Histopathology, Clinical spectrum

#0771/ ILCABS448

IN POST ELIMINATION ERA: ONYCHOSCOPY AS A NEWER MODALITY TO STUDY IN HANSEN`S DISEASE!

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Introduction: Hansen`s is a chronic infectious disease that is caused by mycobacterium leprae which affects the skin, nerves and nails, directly or indirectly. Several nail changes occur frequently but are often overlooked.

Onychoscopy is a valuable diagnostic modality that allows better visualization of the alterations of the nail changes which are missed on naked eye examination.

Objective: To study the onychoscopic features of nails in Hansen`s disease, and to identify characteristic findings amongst the various types of Hansen`s disease.

Patients / material and methods: A prospective open labeled study was conducted in a tertiary care centre comprising of 33 patients with Hansen`s disease. Along with cutaneous and nerve examination, nails were studied. Further the patients were classified according to Ridley-Jopling classification and nail changes were visualized by using Dermlite DL4 after which they were compared and summarized.

Results: In our study nail changes were observed among 85% of the patients, with 18.1% in BT , 24.4% in BL, 18.1% in LL, 15.6% in ENL, 9% in Pure neuritic Hansen`s. Among all the nail changes nail pallor was seen to be more common (69.6 %), followed by longitudinal ridging (54.5%) which was seen more towards the LL spectrum of the disease, then followed by Longitudinal melanonychia (42.4%) which was seen towards BT spectrum of the disease.

Limitations: Low sample size

Conclusion: Nails are known to be the windows to one's systemic health. These changes can occur in Hansen`s due to neuropathy, repeated trauma involving the extremities, poor vascularity, infections or adverse effects of drugs used in the treatment. Hence, along with cutaneous and nerve examination, it is a good practice to examine nails in every case of Hansen`s disease. Onychoscopy aids in providing better visualisation of the nail changes.

Keywords: Onychoscopy, Nail changes, Hansens disease, Nail pallor, Longitudinal ridging, Longitudinal melanonychia

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#0772/ ILCABS467

OPTIMIZED DETECTION OF MYCOBACTERIUM LEPRAE DNA FROM SOIL SAMPLES IN FRENCH GUIANA

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Introduction: *M. leprae* (ML) was previously but irregularly detected in soil samples around houses of leprosy patients and in armadillo burrows, suggesting that soil could act as ML reservoir and play a role in its transmission. However, soil is one of the most difficult environmental matrices for DNA extraction, and mycobacteria have a cell wall difficult to break and can be internalized by amoebas, making extraction of ML DNA from soil samples challenging.

Objectives: We aimed to optimize mycobacterial DNA extraction using a commercial kit and evaluate the ML detection limit in soil samples in French Guiana, where armadillos are putative ML reservoirs.

Material and methods: First, we used commercial DNA extraction kits capable of processing 10g of soil. M. kansasii (easier to manipulate and culture) was used for optimization and was inoculated into sterilized soil samples collected in French Guiana. Additional mechanical lysis steps or DNA purification or recovery steps were compared: liquid nitrogen (30s and 90s), sonication, lysis beads, phenol, and magnetic beads. The optimized protocol was based on 16S rDNA qPCR highest positivity.

Second, we determined the ML detection threshold with RLEP qPCR in soil samples inoculated with inactivated ML bacilli, ranging from 1 to 10^8 bacilli/g of soil.

Soil amoebic communities were sequenced through nanopore technology, and its physicochemical parameters were described.

Results: Adding phenol was the best method to improve mycobacterial DNA extraction from soil samples (standardized mean Ct=25.3±0.7, vs. 28.1±0.2; 28.8±0.4; 31.0±0.2, 31.5±0.3 and 32.4±0.4 respectively for 30s liquid nitrogen, sonication, magnetic beads, 90s liquid nitrogen and lysis beads, and 30.8±0.4 without modification). The other analyses are still in progress.

Limitations: Phenol, although being the most efficient, require adequate lab security process.

Conclusion: Developing and validating these techniques could facilitate the investigation of the presence of ML in soil, especially in tropical areas.

Keywords: Mycobacterium leprae, Mycobacterium kansasii, Soil, DNA extraction

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#0773/ ILCABS492

CLINICOHISTOPATHOLOGICAL AND MICROBIOLOGICAL CORRELATION IN CASES OF LEPROSY

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Introduction: Leprosy is a chronic granulomatous infectious disease caused by Mycobacterium leprae affecting the skin and peripheral nerves. Clinical and pathological findings depend on the immunity of the patient. In view of rising cases of resistance and recurrence in leprosy, clinicohistopathological (CPC) and microbiological correlation is extremely important.

Objectives: To study the CPC and microbiological correlation of clinically diagnosed cases of leprosy.

Material and Methods: A prospective study was conducted on 68 patients clinically diagnosed as leprosy in the Department of Dermatology from Jan 2020 to April 2022. After taking consent from the patient, history was taken in a predesigned format and examination was done. Slit Skin Smear (SSS) and skin biopsy were performed. ZN stain, H&E and Fite–Faraco(FF) stained sections were evaluated and categorized as per Ridley–Jopling system. CPC and microbiological correlation was done.

Results: The maximum of 20 patients(29.41%) in the age group of 31-40 years with male preponderance(M:F=2.24:1). Maximum patients presented with LL(32, 47%) and minimum TT(1, 1.47%). Out of total 68 patients, type 1 and type 2 reaction were noted in 3(4.41%) and 23(33.8%) patients respectively. CPC was noted in 53(77.94%) patients, with a maximum in BT(8), HL(3), TT(1), ENL(1), 100% each followed by LL(32, 78.1 %), BB(3, 75%) and BL(12, 63.15%). SSS and FF stain in skin biopsy was done in all patients, where 14(20.58%) and 19(27.94%) were positive respectively. A positive correlation(p value=0) was seen between clinical and histopathological diagnosis. Negative correlation was seen between clinical diagnosis and SSS(p value=0.375) and positive between FF stain and SSS(p value=0.003).

Limitations: Pure neuritic leprosy patients are excluded.

Conclusion: Clinical diagnosis along with SSS, histopathology and Fite–Faraco staining are confirmatory in diagnosis of leprosy. As nerve damage is irreversible, early detection and treatment is important to prevent deformity.

Keywords: SSS, Histopathology, Fite-Faraco stain, Ridley–Jopling system, Clinicohistopathological correlation

#0774/ ILCABS501

A RETROSPECTIVE ANALYSIS OF CLINICAL, HISTOPATHOLOGICAL AND MICROBIOLOGICAL DATA OF 152 PATIENTS OF HANSEN'S DISEASE ATTENDING A DERMATOLOGY CLINIC IN A TIER-2 CITY

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Introduction: Leprosy continues to be a clinical challenge and new cases continue to be reported across the Indian subcontinent. This is in-spite of the robust National Programme in place. In this study we

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are presenting clinical, bacteriological and histopathological data of 152 patients clinically diagnosed as Leprosy.

Objective: The objective of study is to look at the clinical correlation with histopathological and microbiological data and to observe the demographic trends.

Material and Methods: This is a retrospective study of 152 clinically diagnosed leprosy patients attending a specialty Dermatology clinic (2008-2021). Clinical typing was done using Ridley-Jopling classification. The data of histopathology specimens, bacteriological index(BI) and slit skin smears(SSS) were correlated.

Results: The histopathology/SSS was available for all 152 patients (Male-110, Female-42). Majority patients were aged 20-40 years (46.7%). Most common clinical type was BT-54(35.5%), LL-53(34.8%), BL-23(15.1%). Out of 152, 132 patients were confirmed as leprosy by histopathology. Remaining 20 were either equivocal or had different histopathological diagnosis (Sarcoidosis, Granuloma Annulare, Tuberculid etc.,). Two patients with Sweet's syndrome as close clinical differential diagnosis, were found to be Bullous ENL and ENL in histopathology. Maximum correlation between clinical diagnosis and histopathology was seen in LL(86%), BT(70.3%), BL(68.1%). Fite staining was positive in 76 patients, SSS was positive in 59 patients.

Limitations: This is a retrospective study.

Conclusion: The clinicohistopathological correlation was 86.8%. The Fite staining positivity was 57.5%, SSS positivity was 44.7%. Histopathology remains the gold standard for accurate diagnosis of Leprosy. Smear positivity helps in assessing infectivity. Across 14 years, case load hasn't decreased drastically except 2020-21 which accounts for low patient load during covid years. High proportion of Multibacillary patients (54.5%) make us aware of the need to screen patient's contacts and vulnerable groups more robustly.

Keywords: Leprosy, Clinicohistopathological correlation, Ridley-Jopling Classification, Slit-Skin smear, Fite Staining, Multi Bacillary Leprosy

#0775/ ILCABS575

SEVERE TYPE 2 LEPRA REACTION RESPONDING TO COLCHICINE AND DEMONSTRATING A RARE HISTOPATHOLOGICAL FINDING OF SUBCUTANEOUS NEUTROPHILIC MICROABSCESSES

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Introduction: Type 2 lepra reaction(T2R) is characterized by neutrophilic infiltrates superimposed on pre-existing macrophage granulomas, with or without vasculitis, as the diagnostic feature on histopathology. However, the presence of neutrophilic microabscesses in subcutaneous tissue has not been reported so far.

Case report: A 52-year old male, known case of BL leprosy with ENL, presented with multiple crops of ENL lesions for the past 6 months. Slit skin smears revealed a BI of 3+ from nodule on right arm and 2+ from ear lobe, with a MI of 0. Histopathology of a nodule over right thigh demonstrated mild hyperkeratosis, dense dermal periadnexal, perineural and perivascular mixed inflammatory infiltrate and focal vasculitis along with focal neutrophilic microabscess in the subcutis. The ENLIST severity scoring was 10 suggestive of severe ENL. The patient was managed with colchicine 0.5 mg TDS along with NSAIDS, with good response.

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Repeat biopsy from the same site after 4 weeks showed an absence of any subcutaneous abscess and a milder inflammatory infiltrate.

Discussion and Conclusion: Classical changes that are seen in histopathology of acute ENL include neutrophilic infiltrate deeper in the dermis, that can be scanty or abundant; that can form dermal abscess with associated ulceration. Necrotizing vasculitis that involves arterioles, venules and capillaries, can be associated with superficial ulceration. In addition to the above findings, subcutaneous neutrophilic microabscesses were found in our case; which is the first ever case reported in literature so far. Neutrophilis microabscesses have been reported in the epidermis and in the dermis, but not in the subcutaneous tissue. Subcutaneous neutrophilic microabscesses, present in our case; could be explained by the occurrence of low grade persistent inflammation, manifesting as a chronic panniculitis. This a novel and interesting finding, which disappeared after successful treatment, correlating with the clinical recovery of the patient.

Keywords: Lepra reaction, Erythema nodosum leprosum, Panniculitis

#0776/ ILCABS603

TRENDS OF SMEAR POSITIVE LEPROSY AMONG NEW CASES DURING POST-ELIMINATION PERIOD

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Introduction: Project area comprises urban population of 2 million mainly slums including Dharavi one of the biggest in Asia. We have reported in 2008, how leprosy case detection and treatment managed in the post integration scenario in Mumbai, specially pertaining to observations on occurrence of new smear positive patients. We now present our findings from 2004 till 2021.

Methods: In Mumbai, leprosy programme was integrated with Health Posts (HP) of General Health Care System (GHC) in 2005 (population: 14 million in 2020).Health delivery in city of Mumbai is highly complex, primarily comprising HP, Public Health Hospitals, medical colleges besides non-teaching hospitals. Private sector comprising General Practitioners, Practicing dermatologists besides several specialists, corporate and private hospitals. We have been offering services after reorganization post integration through Referral Centre, satellite clinics and extension units in public hospitals. These clinics are being strengthened and retained at ward level and services sustained.

Results: From July 2004 till December 2021, a total of 268 smear positive cases were detected out of 1273 total new cases, registered for treatment in project area in a population of 2 million giving a trend of an average of 15 (21%) new smear positive, every year. Most of these cases were referred directly to the satellite clinics while some to Referral Centre by Public & private sector. Cases were confirmed by senior supervisory staff.

Conclusion: It is observed that there is a continued static, trend in occurrence of new smear positive cases in project area during above period indicating a constant pool of reservoir of infection in community. Though the practise of taking skin smear is done away with in routine programme, we have been continuing the practice of taking smears to identify the quantum of reservoir of infection, responsible for chain of transmission of infection in slums

Keywords: Leprosy, Slit Skin Smears, MB, Smear positive, Post-elimination, Transmission

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A CASE OF CUTANEOUS SARCOIDOSIS MISTAKEN AS LEPROSY, TALE OF TWO GREAT MIMICKERS

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Introduction: Non-caseating granulomatous inflammatory condition has two important differentials leprosy and sarcoidosis. India has been saddled with leprosy for a long time and new leprosy cases are still detected every year, hence it is often the first diagnosis considered when the pathology of non-caseating granulomas is detected.

Case report: 40-year-old army personnel came with complaint of asymptomatic gradually enlarging lesion over chin associated with lip swelling since last 6 months. On examination, a single well-defined, erythematous, infiltrated plaque of size 7.5*5cm was seen with few satellite erythematous nodules having superficial scaling and erosion. A 4mm punch biopsy and slit skin smear (SSS) were performed with the clinical impression of borderline tuberculoid leprosy. His SSS was negative and the biopsy revealed multiple non-caseating epithelioid granulomas surrounded by lymphocytes, presence of langhans giant cell, and the epithelioid granulomas reached up to subcutaneous tissue. Fite Faraco stain was negative. The patient was started on adult multi-drug therapy (MDT) and was given blister combi-packs for 3 months since he was posted for his duty. On follow-up, his facial lesion did not show improvement, and additionally few erythematous, infiltrated nodules were noted over his bilateral forearms. Baseline investigations (hemogram, blood chemistry profile, urine microscopy, chest x-ray) were normal. Serum ACE (acetylcholinesterase enzyme) levels were also within normal limits. Biopsy was reviewed again, and reticulin stain was advised, which was positive. A diagnosis of cutaneous sarcoidosis was made and the patient was started on systemic corticosteroids and methotrexate after which he showed continual improvement.

Discussion: Leprosy and sarcoidosis can mimic each other; hence clinicians need to be aware of the varied presentations. This is a cautionary case report where the pathological evidence alone should not dictate the entire picture and a clinicopathological correlation should be made.

Keywords: Cutaneous sarcoidosis, Leprosy, Epithelioid granulomas, Clinicopathological correlation

#0778/ ILCABS685

DERMATOSCOPIC FEATURES IN LEPROSY

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Introduction: Leprosy is a chronic infectious granulomatous disease caused by Mycobacterium leprae. It is often diagnosed clinically in combination with slit skin smears and histopathology. Leprosy has array of cutaneous morphologies, thus making clinical diagnosis difficult in a busy setup. To overcome such difficulties, dermatoscope proves to be a valuable, easy to handle, rapid and non-invasive diagnostic tool.

Objectives: To observe dermatoscopic features in leprosy and correlate them with histopathological findings.

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Materials and methods: This was a case series of selected leprosy patients who were newly diagnosed or under treatment for less than 6 months. The most classical lesion was evaluated dermatoscopically and biopsy was done for histopathological examination.

Results: A total of six adult patients were studied. The characteristic dermatoscopic findings were observed and correlated with dermatopathology. The yellow and white structureless areas, loss of hair follicles, decreased eccrine ostia (white dots), loss of pigment network and telangiectatic blood vessels were the main findings in borderline tuberculoid leprosy. Focal areas of hyperpigmentation with sparing of epidermal appendages were commonly found in borderline lepromatous leprosy. In lepromatous leprosy yellow structureless areas, yellow globules, and relative sparing of eccrine ostia were mostly observed. Yellow and white structureless areas corresponded to granulomas in histology. Reduced appendages signified peri-appendageal granuloma. Loss of pigment network showed involvement of grenz zone and basal layer with damged melanocytes. Few interesting dermatoscopic traits of lepra reactions were also noted.

Limitations: This was a case series with limited patients. Although dermatoscopy aided in quick diagnosis of leprosy but it is not a confirmatory method. Exclusion of other differential diagnoses is not possible solely on the basis of dermatoscopy.

Conclusions: The dermatoscopic visualization of leprosy lesions coincided with dermatopathology in the current case series. Dermatoscopy along with slit skin smear and histopathology could aid in identifying atypical cases.

Keywords: Dermatoscopy in leprosy, Dermoscope use in Hansen's disease

#0779/ ILCABS715

LEPROSY-SCHISTOSOMIASIS CO-INFECTIONS ARE ASSOCIATED WITH HIGHER IL-10, TNF-□, AND CXCL8 THAN LEPROSY MONO-INFECTIONS

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Introduction: Chronic helminth infections and select nutritional deficiencies can be associated with suppression of the immune response. We previously reported positive associations with leprosy and both active schistosomiasis and vitamin D deficiency.

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Objective: Explore the immunologic basis of these associations by measuring cytokines and chemokines in co-infected individuals.

Methods: Between 2016/2018, 3 groups were recruited: cases (multibacillary (MB) and paucibacillary (PB), contacts and negative controls in MG, Brazil. Questionnaires were administered and blood/feces collected, tests were carried out to assess micronutrient levels and serological reactivity to schistosomiasis (IgG4-Swap) and eggs on stool exam. Cytokines and chemokines were measured with stimulation by *M. leprae* (ML) antigens. Cytokine levels were first log-transformed, analyzed by linear regression and then grouped into two categories (high and low). Logistic regression was then used to calculate adjusted odds ratios for each cytokine.

Results: 79 cases of leprosy, 97 household contacts, and 81 non-contact controls were enrolled. Higher S. mansoni IgG4 levels were associated with higher IL10 (p=0.06) and TNF-a responses (p=0.02) in ML-stimulated PBMC of coinfected compared to leprosy mono-infected, controlling for age, sex, and positive ML bacillary index. On logistic regression, high IL10 (aOR 4.19; 95% CI 1.11, 15.75) and high TNF-a (aOR 3.78; 95% CI 1.00, 14.2) were associated with acute schistosomiasis when controlled for leprosy, age, sex. No statistically significant findings were found for IL2, IL4, IL6, IFN-γ. Vitamin D deficiency was not found to be associated with any cytokine levels. Lastly, co-infected individuals expressed higher levels of CXCL8 (IL-8) than those with leprosy alone (p=0.009). Limitation: Small number of cases with positive BI and participants with active schistosomiasis/low parasitic burden.

Conclusion: Higher IL-10 expression, demonstrate alteration of the host response by schistosomiasis that may influence the course of leprosy, providing evidence of potential increased susceptibility to clinical leprosy in those with schistosomiasis.

Keywords: Leprosy, Schistosomiasis, Nutrients, Cytokines, Chemokines, Co-infection

#0780/ ILCABS716

ROLE OF DERMOSCOPY IN THE DIAGNOSIS OF LEPROSY

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Introduction: Leprosy is a chronic granulomatous infection caused by Mycobacterium leprae. Current diagnostic tests for confirmation and treatment are slit skin smear and biopsy that are invasive and require time for processing, reading, and interpretation. Dermoscopy is a technique that allows the visualization of structures not readily seen by the naked eye. It can be performed at the point of care, providing a non-invasive link between clinical and histopathologic examination. This study aimed to determine the dermoscopic findings and associated clinicopathologic findings of the different forms of leprosy

Objectives: We evaluated the dermoscopic findings of various manifestations of leprosy and correlated them with clinical and histopathological features.

Methods: This observational study was conducted in our skin outpatient department for a period of 6months. Patients newly diagnosed as having leprosy or those undergoing leprosy treatment were included. The most representative lesion was dermoscopically evaluated and later biopsied.

Results: We included 10 patients in the study. Results indicated an obvious correlation between dermoscopic findings and histopathology. We noted orangish yellow and white structureless areas, steadily throughout

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the spectrum, depicting dermal granuloma. Additionally observation of focal vascular structures such as branching, linear, and crown vessels that result from the pressure of granuloma pushing the dilated vessels upwards was also noted. The relative absence of skin appendages aided in differentiating leprosy from other granulomatous disorders. Other unique findings included violaceous structureless areas, characteristic large telangiectatic vessels, follicular plugging, star-shaped silvery-white scaling, and white globules in type 1 reaction; white shiny steaks were observed in patients with borderline lepromatous leprosy, and central white dots and keratotic plugs were observed in patients with histoid leprosy.

Conclusions: Dermoscopy, as a noninvasive modality, could aid in the quick diagnosis of leprosy and should be used as a handy tool to complement other investigative tools for this disease.

Keywords: Dermoscopy in hansesns, Non invasive techniques, Rapid diagnosis

#0781/ ILCABS717

IDENTIFICATION OF IMMUNE BIOMARKERS AND GENOTYPING POLYMORPHISM OF SUSCEPTIBILITY TO LEPROSY DISEASE IN PATIENTS AND HOUSE HOLD CONTACTS.

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Introduction: Leprosy is an infectious disease characterized by heterogeneity of clinical manifestations from the tuberculoid pole (TT) to the lepromatous (LL) - which are correlated with the host cell-mediated immune response against *M. leprae*. The role of host genetic factors in the development of leprosy has been well established through epidemiological indicators and genetic studies of the host in susceptibility to leprosy. **Objective:** To evaluate the immune biomarkers and to genotype polymorphism of susceptibility to leprosy disease in patients and household contacts.

Methods: The cytokines (IL-2, IL-4, IL-6, IL-10, TNF-α, IFN-γ e IL-17) and chemokines (CXCL8/IL-8, CCL5/RANTES, CXCL9/MIG, CCL2/MCP-1 e CXCL10/IP-10) were measured by CBA Human Kit in supernatant from PBMC in vitro culture not stimulated and stimulated by *M. leprae* (ML). Also, genotyping of single nucleotide polymorphisms (SNP) of the TLR4 genes (rs4986790, rs2149356, rs1927914, and rs2737190) using qPCR assay for DNA amplification was done. These parameters were associated with clinical data on leprosy using Multivariate analysis.

Results: A model based on textit Random Forest was implemented, which allowed us, with about 97% accuracy, to predict the clinical evolution of household contacts by recognizing the pattern of their clinical and immunological variables. A pattern of chemokines (especially IL-8 and RANTES) was found in stimulated cell culture (ML). A 2.3 times greater chance of illness was verified in the carriers of the G allele in the rs1927914 or rs2737190 SNP of the TLR4 gene.

Limitation: the size of the sample.

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Conclusion: Innate immunity via TLR4 may help early diagnosis of leprosy, especially regarding the SNPs rs1927914 and rs2737190.

Keywords: Leprosy, Diagnosis, Immunology, Genetic, Artificial intelligence

#0782/ ILCABS720

PARASITES AND MICRONUTRIENT DEFICIENCIES COEXISTING WITH LEPROSY IN ENDEMIC AREAS IN BRAZIL - IMMUNOLOGY ASPECTS.

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Introduction: Infections caused by parasites and micronutrient deficiencies can coexist with leprosy in endemic areas in Brazil. Objective: To determine risk factors associated with leprosy considering socio-demographic, immunological, parasitological, and nutritional variables. Methods: Three groups were included, cases (with leprosy PB, MB, n = 79), contacts (asymptomatic, history of living with the patient, n = 97), and negative control (asymptomatic without a history of leprosy, n = 81), attended at ESF in MG/Brazil. Structured questionnaires and blood and feces were collected to assess reactivity for S. mansoni (IgG4-Swap). Cytokines and chemokines in the supernatant of PBMC culture and micronutrients were measured. Results: 75% of the co-infected individuals had a basic level of education, and only 7.9% of the control group (contacts and negative control) had higher education. 70% of the contact group lived with the patient, and 68% of the co-infected group were not in the habit of treating drinking water. There is a strong correlation between leprosy and infection by S. mansoni with an aOR of 3.37. Comparing cases and controls, aOR was even more potent (8.33). IL-10 was associated with infection (S. mansoni). IL-4 was also associated with the co-infected x contact and mono-infected group. A positive correlation between proinflammatory cytokines and the control group and an association of IL-8 and IP-10 with the mono-infected group were observed. Co-infected had inadequate vitamin D, and adequate vitamin A concentration was observed in the negative control and contact groups. Iron deficiency associated with a poorly diversified diet, co-infection, and anemia were seen in 55% of individuals (co-infected group). Limitation: The number of cases with positive BI and a small number of participants with active schistosomiasis/low parasitic burden. Conclusion: Th2 cytokines in the co-infected group are relevant for the continuity and the monitoring of contacts to delineate risk factors better.

Keywords: Leprosy, Schistosomiasis, Co-infection, Cytokines, Chemokines, Nutrients

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SIGNATURE OF BIOMARKERS FOR THE EARLY DIAGNOSIS OF LEPROSY ASYMPTOMATIC HOUSE HOLD CONTACTS

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Introduction: The annual number of new leprosy cases has remained stable over the last decade, indicating that transmission is ongoing despite the availability of treatment. Currently, infected but asymptomatic individuals are not detected by available diagnostic methods.

Objective: Our study aimed to establish a signature of biomarkers that can be used for the early diagnosis of asymptomatic contacts with subclinical infection.

Methods: We enrolled household contacts of patients with leprosy and divided them into two groups: contacts of paucibacillary patients (CPB) and contacts of multibacillary (CMB). We measured immunological and genetic (TLR4) parameters at time 0 (T0) and two years after (T2). CBA was used to measure cytokines and chemokines in culture supernatants of PBMC without and with *M. leprae* (ML) stimulation in vitro.

Results: The results showed that in ML culture, there was a more outstanding production of the chemokines CXCL8, CCL2, CXCL9, and CXCL10 by the CPB group. On the other hand, there was a significant increase in cytokines IL-6, TNF, IFN-g, and IL-17 in the CMB group. Converting into categorical data, the results pointed out differences between CMB and CPB. In the ML culture, there was an increase in CPB frequency of higher producers of CXCL9, CXCL10, CCL2, CXCL8, and IL-10. CMB had higher secretion only of CCL5 and more excellent production of pro-inflammatory TNF-α, IFN-g, IL-6, and IL-17. The association between the TLR4 rs1927914 polymorphism and the response in different profiles (A vs. G and AA vs. AG vs. GG), the A allele, and the AA genotype were associated with increased secretion of chemokines/cytokines. Higher production of CXCL8 and TNF was found in individuals of genotype AA. **Limitation:** the size of the sample and time for follow-up.

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Conclusion: CMB group highlighted the higher production of IL-17 and IL-6, indicating an inflammatory profile at T0

Keywords: Leprosy, TRL-4, Cytokines, Chemokines, Household contacts, Follow up

#0784/ ILCABS728

HIGH FREQUENCY OF IL10 PRODUCING REGULATORY B CELLS (CD19+IL10+) AS A POTENTIAL BIOMARKER OF LEPROSY CONTACT MONITORING

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Introduction: Leprosy is a chronic infectious disease, caused by *M. leprae* which transmission is still persistent, nowadays. To reduce transmission it is essential early diagnose to identify infected individuals lacking clinical symptoms. In this context, it is noteworthy to look for immunological biomarkers applicable as complementary diagnostic tools to follow-up leprosy contacts. Regulatory B cells (Bregs) are known to exhibit their regulatory functions through interleukin-10 (IL-10). There are few studies of these cells in host immunity in leprosy.

Objective: To evaluate the role of Bregs in the pathogenesis of leprosy and their applicability as a biomarker.

Methods: The study comprised a cross-sectional investigation that enrolled 16 participants, including 01 leprosy patients and 15 healthy contacts. Heparinized whole blood samples were collected from the patient before/ 5 days after treatment, from healthy contacts, and used to surface (CD19+) and intracytoplasmic cytokine (IL-10) staining of lymphocytes upon short-term in vitro culture.

Results: We evaluated the frequency of Breg cells index (CD19+IL10+) and the total B cell index (CD19+), in an MB leprosy patient and his contacts. Notably, our strategy allows identifying household and social contacts with a profile of the total B cell (CD19+) and regulatory B cell (CD19+IL10+) index similar to the patient before treatment, suggesting that they could be latently infected with *M. leprae*.

Limitation: Sample size.

Conclusions: This approach showed that it is possible to use the Breg cells index as a biomarker for monitoring contacts, and understanding the involvement of B cells in the pathogenesis of leprosy.

Keywords: Bregs, Leprosy, Early Diagnostic, Contacts, CD19+IL10+

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CLINICAL, SOCIO-DEMOGRAHIC AND LABORATORIAL CHARACTERISTICS OF LEPROSY SUSPECTED INDIVIDUALS DIAGNOSED IN CREDENPES.

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Introduction: Early diagnosis of leprosy is a vital strategy to interrupt the chain of transmission of *M. leprae* and prevent physical disability.

Objective: Characterise clinical, sociodemographic, and laboratory profiles of leprosy suspected individuals diagnosed in Credenpes.

Methods: Ear dermal scraping samples from study participants were collected and preserved in 70% alcohol, and DNA was extracted and quantified. Then, the qPCR assay was performed targeting the RLEP gene (Repetitive Elements) to identify the presence of *M. leprae* DNA.

Results: Samples from 411 individuals were analyzed. Of this total, 158 samples were classified as cases and 253 as individuals with suspected leprosy. A significant number of patients aged between 40 and 69 years (n=85), with 58.86% male and 83.87% presenting positive qPCR, indicating the presence of *M. leprae* DNA in the dermal scraping samples collected. As for education, among those who had incomplete 1st to 4th grade, the qPCR reaction was positive at 89.66%. Most of the reported cases were classified as multibacillary (63.92%). However, the qPCR test was positive in 75.44% of the patients classified as paucibacillary and 86.14% of the multibacillary cases.

Regarding individuals with suspected leprosy, of the 253 samples collected, 100% had a negative bacillary index (BI=0. However, the results of the qPCR test indicated that 120 samples (47.43%) were positive for the RLEP gene.

Limitation: sample size and follow-up of them.

Conclusion: The detection of *M. leprae* DNA, especially in contact with possible subclinical infection, will contribute to more significant and better disease control.

Keywords: Leprosy, QPCR, Georeferencing, Early diagnosis, RLEP.

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IL-6 PROFILE AS A MARKER OF NERVE INVOLVEMENT IN LEPROSY

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Introduction: Clinical manifestations of leprosy are highly influenced by host immune response. Th2 cytokines IL-4, IL-5, IL-6 and IL-10 are associated with LL patients, while Th1 cytokines IL-2, IFN-γ and TNF-α are associated with TT leprosy.

Objective: To assess the serum IL-6 levels and correlate the patterns with nerve involvement in different leprosy spectra.

Materials and Methods: A cross-sectional study was conducted on leprosy patients (confirmed by clinical, bacteriological and histopathological evaluation); attending the Dermatology department for over 6 months. After informed consent, blood samples were collected by venipuncture and the serum was separated for IL-6 estimation.

Results: The study included 15 patients with- mean age of 37.5 years and male: female ratio of 2:1. There were 6(40%) LL, 3(20%) BL, 2(13.3%) BB, 3(20%) BT and 1(6.7%) TT leprosy patients. No statistically significant difference in IL-6 levels concerning the spectrum of leprosy was noted; tuberculoid(243.63 214) and lepromatous(123.82 150); however some notable observations were made. TT leprosy with single cutaneous nerve enlargement had the highest IL-6 levels. Out of 6 LL patients, the one with >1 nerve enlargement had IL-6 values > 44 times the upper normal limit (UNL). Values were higher for both Type 1 (6.7%) and Type 2 (13.3%); type 1 > type 2 reaction. 66.67% of patients had ulnar nerve enlargement, of which 70% of patients had IL-6 levels 3 times UNL. Out of 3 patients with evidence of neuritis, 2 patients had levels 17 times UNL.

Limitations: The small sample size and lack of a control group are major limitations of our study.

Conclusion: IL-6 levels are significantly high in patients with nerve enlargement and neuritis, independent of the spectrum of leprosy. Thus, further studies would help establish the role of IL-6 as a marker of nerve involvement in leprosy.

Keywords: IL-6, Nerve enlargement, Neuritis

#0787/ ILCABS779

MULTIPLE MISDIAGNOSES JOURNEY TO LEPROSY AND NEUROPATHY

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Introduction: Although leprosy is suspect for peripheral neuropathy especially in endemic settings, differential diagnosis can be challenging within general health services; and subsequent diagnostic delays for leprosy can increase risks of negative clinical outcomes.

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Description of the case: Six years ago, a 46 year old female presented to a local clinician with a hypopigmented anesthetic patch on her left upper arm and was advised to use skin lotion. Later, she visited several dermatologists and neurologists and was treated for allergy, tineasis and eczema. Skin biopsy for histopathology was conducted but found non conclusive. Alongside various treatments, she developed hypertension, hyperglycemia and hyperthyroidism and was prescribed more medications. Upon development of neuropathy, a neurologist diagnosed diabetic neuropathy and started treatment.

In June 2022, the patient presented to leprosy referral services with hypopigmented itchy vesicular lesion on left arm, annular erythematous lesions on face and multiple hypopigmented patches on legs. Slit skin smear for Acid Fast Bacilli indicated a bacterial index of 2+; and skin biopsy for histopathology indicated borderline tuberculoid leprosy. Disability grade 1 was assigned as both feet were anesthetic. She has currently started MB-MDT. Health education was provided for care of anesthetic hand and feet.

Conclusion: In order to improve early diagnosis of leprosy, continued efforts are needed to train and network leprosy care across general health services. Early diagnosis is an imperative to reduce risks of permanent neuropathy as well as deformity and disability development.

Keywords: Diabetes, Diagnosis, Leprosy, Neuropathy, Differential diagnosis, Delay in diagnosis.

#0788/ ILCABS812

PREDICTED FUNCTIONAL PARTNERS OF *M. LEPRAE* PROTEINS FOR ANTI-INFLAMMATORY & ANTI-LEPROSY DRUGS: STITCH ANALYSIS

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Introduction: Non-steroidal anti-inflammatory drugs (NSAIDs) is a therapeutic drug class which reduce inflammation, pain, fever and are anti thrombotic. The common ones include Paracetamol, Aspirin, Diclofenac and Ibuprofen. Anti-leprosy drugs are the agents used in the treatment of leprosy Rifampicin, Clofazimine, Dapsone Ofloxacin, Minocycline and Clarithromycin. This study is a bioinformatic comparison of anti-inflammatory and anti-leprosy drugs and their Predicted Functional Partners (PFPs) in Mycobacterium leprae and host to understand the molecular mechanism of drug action

Methods: STITCH (search tool for interactions of chemicals) is a database which provides information on interactions between proteins and small molecules. STITCH is available at http://stitch.embl.de/. The STITCH database was used to understand the molecular and cellular interactions and functions (PFPs) of Anti-inflammatory and Anti-leprosy drugs.

Results and Discussion: Paracetamol, Diclofenac, Ibuprofen (NSAIDs) and Rifampicin, Dapsone, Clarithromycin (Anti-leprosy drugs) have a common interaction with Cytochrome P450 - ML2088 and Hypothetical protein - ML0447. The studies show that cytochromes are involved in specific physiological functions in bacterial virulence and persistence in the host. ML1114, ML1113 are ABC transporter ATP-binding proteins which are also common PFPs for Aspirin, Diclofenac (NSAIDs) and Rifampicin, Clofazimine, Ofloxacin, Clarithromycin (Anti-leprosy drugs). The clinical application of these specific PFPs metabolic role needs to be evaluated to know whether these PFP in host and bacteria impact bacillary

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clearance and are involved in reactions in leprosy. As much as host metabolic PFP are important in drug metabolism studies the pathogen PFPs need further exploration

Keywords: STITCH, Bioinformatics, *M. LEPRAE*

#0789/ ILCABS859

RECOMBINASE POLYMERASE AMPLIFICATION ASSAY AS A POINT-OF-CARE DIAGNOSTIC FOR MYCOBACTERIUM LEPRAE INFECTION

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Introduction: About 60% of the new cases of leprosy are reported from India annually. Early and rapid diagnosis of leprosy is therefore important for controlling a transmission but remains a significant challenge. Recently, several studies have described the utilization of isothermal amplification assays for the detection of the pathogen in clinical samples. Isothermal amplification techniques such as Replication polymerase assay (RPA) have been used to develop field-friendly diagnostics tests for many diseases which provide the target amplification in less than 30 minutes.

Objective: To develop an isothermal RPA assay for the detection of *M. leprae* in the clinical samples.

Patients / material and methods: RPA specific primers were designed manually to detect 450 bp RLEP region of *M. leprae* at 39°; C for 30 minutes. DNA was isolated from human skin biopsy samples of suspected leprosy patients and RLEP (marker of *M. leprae* infection) RPA was done to detect the presence of *M. leprae*. The RPA amplicons were analysed using agarose gel electrophoresis and SYBR Green I assay after full amplification for the visual detection of the RPA products. The sensitivity and specificity of this assay was analysed using 10-fold serially diluted *M. leprae* Thai-53 genomic DNA.

Results: In a relatively short amount of time and at a consistent temperature, the RPA assay proved to be an effective way to amplify the RLEP sequence. The limits of detection (LODs) was found to be 0.09ng/ul of DNA. SYBR Green I detection of RPA amplified products showed orange colour for no amplification in negative controls and green colour for positive controls indicating successful amplification.

Limitations: This diagnostic assay has to be tested in the field conditions.

Conclusion: This quick, sensitive RPA test for *M. leprae* detection can be incorporated into point of care diagnostics, particularly in field settings where laboratory resources are limited.

Keywords: Isothermal amplification, Replication polymerase assay, Point of care, RLEP, *M. leprae*, SYBR green I

#0790/ ILCABS868

SINGLE NUCLEOTIDE POLYMORPHISMS IN DNA REPAIR GENES IN *M. LEPRAE* STRAINS

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Introduction: It is known that the genomic polymorphisms in DNA repair, replication and recombination (3R) genes contribute to genetic diversity and help in acquiring polymorphisms that favour survival in

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different stress conditions such as drug selection pressure. However, there is very little understanding about how the genetic diversity in the 3R genes is associated with the types of polymorphisms in the drug resistance associated loci of the drug resistant strains of *M. leprae*.

Objective: The objective of this study is to identify the polymorphisms in 3R genes and explore the association between mono as well as multidrug resistant (MDR) strains of *M. leprae*.

Patients / material and methods: We have compared the genomes of drug resistance (DR) and drug susceptible (DS) clinical isolates of *M. leprae* generated by whole genome sequence (WGS) in this study and previous studies. The reference strain *M. leprae* TN was used for identifying the SNPs in the 3R genes.

Results: In our study, the comparative genomic analysis of currently known *M. leprae* genomes (n=289) identified several SNPs in the 3R genes such as recX (ML0988), mfd (ML0252), dnaA (ML0001), recG (ML1671), helY (ML1333), dnaE (ML1207), ndk (ML1469), uvrD1 (ML0153), mutT4 (ML2698). We identified 23 *M. leprae* strains (belonging to five different SNP subtypes exhibiting >10 SNPs each within the 3R genes, including the strains with hypermutator phenotype as well. Zensho-9, a dapsone- and rifampicin-resistant hypermutator strain possessed 19 SNPs in the 3R genes.

Limitations: More focus on whole genome sequencing studies is required for discovering phylogeographically informative genomic markers in 3R genes.

Conclusion: SNPs in 3R genes related to different strains of *M. leprae* may be used to build phylogenies. These SNPs are novel genetic markers that might help researchers better understand the emergence of drug resistance in *M. leprae*.

Keywords: SNP, DNA repair genes, Drug resistance, *M. leprae*, Comparative genomics, Leprosy

#0791/ ILCABS908

IMMUNOMODULATORY EFFECTS OF THALIDOMIDE TREATMENT ON ERYTHEMA NODOSUM LEPROSUM (ENL) SKIN LESIONS

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Leprosy, a chronic infectious disease caused by Mycobacterium leprae, predominantly affects the skin and peripheral nerves, and cause progressive serious disabilities. Although the infection is curable, patients often experience inflammatory complications that do not resolve with antimicrobial treatment. To control inflammation, thalidomide was used as an alternative to corticosteroid therapy, which is associated with immunosuppression. In this pilot study, we evaluated the immune-modulatory effect of thalidomide in the skin lesions of patients with ENL (Erythema Nodosum Leprosum). All patients were recruited from the leprosy clinic of Anandaban Hospital (Anandaban, Nepal). Formalin-fixed skin biopsy samples form 11 ENL study subjects treated with thalidomide at 300mg/day (0-6 days of treatment initiation) or 200mg/day (>7days of treatment initiation) were procured, sectioned and processed for immunohistologic imaging using antibodies specific to CD68, TNF-α, IL-1β, IL-12α, CD4, IFN-γ and Foxp3. Approximately 5 to 10 images were acquired randomly from each section using EVOS FL microscope at 63x magnification. The fluorescent intensity from the target protein was quantified using Image J software and unpaired Student's t-test was used to analyze the data between groups. Our study results show that the frequency of CD68+ cells in the skin lesions decreased followed by thalidomide treatment. These patients also had significantly reduced expression of TNF-α and IL-1β, while production IL12α was significantly upregulated. Thalidomide treatment also

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enhanced the production of IFN-γ at site of infection and did not change the frequency of CD4 and FoxP3 expressing cells as compared to baseline levels. Our study results suggest that thalidomide therapy dampens inflammation and modulates the immune response at site of infection and improves the clinical outcome of ENL treatment. Further studies are warranted to understand the mechanistic link between the expression pattern of immune markers and the host cell response in the skin lesions of ENL patients treated with thalidomide.

Keywords: Leprosy, Thalidomide, Inflammation, Host-directed therapy, Immunomodulation

#0792/ ILCABS931

SPECTRUM OF HISTOLOGICAL CHANGES IN THE NERVES OF PRIMARY NEURITIC LEPROSY(PNL) AND ITS IMPACT ON THERAPY

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Introduction: Primary neuritic leprosy (PNL) is characterised by sensorimotor changes, absence of skin patches, enlarged nerves and negative skin smears, and is a diagnostic challenge. Although other technique like ENMG, USG and FNAC are being used as diagnostic tools, nerve biopsy remains the gold standard for diagnosis.

Objective: To study the histological changes in the nerve in patients suspected of PNL and to explore the value of a skin biopsy.

Methodology: Patients suspected of PNL between July 2019 and February 2022 were subjected to cutaneous nerve biopsy and H&E and Fite-Faraco stained sections were evaluated.

Results: There were 12 patients who were suspected as PNL (7 male; 5 female). The nerves biopsied were sural in 9 patients; ulnar cutaneous (UCN) in 2; and radial cutaneous (RCN) in 1 patient. The histological features included BT neuritis in 5 patients (41.6%); BL neuritis in 2 (16.6%); and TT neuritis in 1 with features of Segmental Necrotizing Granulomatous Neuritis (SNGN) of leprosy (8.3%). 4 patients (33.3%) revealed no significant lesions. Although the skin smear was negative in all the patients, the bacillary index of granuloma (BIG) was 4+ in one and 3+ in 2 biopsies. 4 of these patients had a skin biopsy from an area of sensory change, 1 of them showed features of BT leprosy and the other 3 showed no significant lesion in the skin.

Conclusion: Although PNL is a distinct clinical entity the histological features in the nerves exhibit a spectrum which includes TT, BT and BL leprosy, affecting the choice of MDT. Nerve biopsy is a valuable tool in the diagnosis/classification of PNL and to know the type and extent of nerve involvement. The study also underscores the value of a skin biopsy from an area of sensory change.

Keywords: Primary neuritic leprosy (PNL); Nerve biopsy; Skin biopsy.

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CLINICAL PROFILE OF CASES PRESENTING WITH HIGH BACILLARY INDEX IN LEPROSY

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Introduction: Leprosy is a chronic granulomatous infection caused by Mycobacterium leprae. As leprosy affects mainly skin and peripheral nerves, the bacilli are demonstrated through Slit Skin Smear (SSS). Diagnosis of leprosy is mainly clinical but at times to confirm the diagnosis and monitor treatment histopathology and SSS are necessary.

Aims and Objectives: To study the clinical profile of cases presenting with high bacillary index in leprosy in a tertiary care hospital.

Materials and Methods: A retrospective study at DVL OP conducted from January 2022 to June 2022 in a tertiary care hospital. All cases diagnosed as leprosy with bacillary index (BI) of 3+ and more irrespective of age and sex were included in the study.

Results and Discussion: Among the 31 highly bacillated patients, i.e., with BI of ≥ 3+, males outnumbered females. Maximum cases (67.7%) belonged to the age group of 21 – 40 years. Most common clinical type was Borderline Lepromatous 19 (61.2%) followed by Lepromatous Leprosy 7 (22.5%). Majority of the cases (16) had 3+BI followed by 4+BI in 9 and 5+BI in 6. Seven cases showed disparity between clinical and bacterial index.

Limitations: Short duration of study.

Conclusion: Slit skin smear is an important tool which helps in the diagnosis of leprosy and our study reconfirms that SSS is quite sensitive in diagnosing patients with high BI. The disparity can be due to varied clinical presentation or the patient could be downgrading from one spectrum to another. Hence, clinical features along with BI is useful in making accurate diagnosis and classification so that appropriate treatment could be started and hence deformity and disability can be prevented.

Keywords: Slit Skin Smear, High bacterial index

#0794/ ILCABS944

EVALUATION OF A SYNTHETIC ANTIGEN IN THE DIAGNOSIS OF LEPROSY

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Introduction: Although leprosy is at a low epidemic level in China,the number of new cases has not declined significantly in recent years. Early detection of leprosy infection is still an urgent task for leprosy prevention in China and the world. Semisynthetic diglycoprotein antigen (ND-O-BSA) is considered to have high sensitivity and specificity in serological detection of leprosy .Here,we evaluate the use of the antigen in early diagnosis of leprosy by ELISA.

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Objective: To evaluate the sensitivity and specificity of ND-ELISA,and explore the relationship between the seral OD values of sera tested and the bacterial index.

Methods: ELISA was applied to detect the antibodies IgG and IgM against ND, and the relationship between the serological activity and bacterial index was displayed by plotting method.

Results: 1) In ND -IgM-ELISA, the negative rate of the normal control was 97.5%, and the total positive rate of the leprosy patients was 96.2%. There were no positive reactions with sera from pregnancy individuals and patients with connective tissue disease, psoriasis, syphilis, pulmonary tuberculosis. 2) In ND -IgG-ELISA, the negative rate of normal control was 83.8%, and the total positive rate of the leprosy patients was 82.5%.There were positive reactions with sera from pregnancy individuals, and patients with connective tissue disease, psoriasis, syphilis, pulmonary tuberculosis. 3) The OD values of leprosy sera were positively correlated with the bacterial index.

Limination: Larger samples were needed.

Conclusion: ND -IgM-ELISA had no cross-reactivity with the diseases mentioned above. Its sensitivity and specificity were both very high.This ELISA was potential to replace the method of bacteriological index to early detect the infection with *M. leprae* as well as to conduct such as evaluation of chemotherapy, predicting relapse of leprosy, detecting subclinical infection of *M. leprae* and so on.

Keywords: Synthetic antigen, ND-O-BSA, ELISA

#0795/ ILCABS945

RE-EVALUATION AND APPLICATION OF TWO SYNTHETIC ANTIGENS IN THE DIAGNOSIS OF LEPROSY

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Introduction: Serodiagnosis is generally accepted as the easiest way of diagnosing a disease. ND-O-BSA and NT-P-BSA are immunodominant disaccharide and trisaccharide epitopes of PGL-I(a characteristic surface glycolipid of leprosy) linked to bovine serum albumin.We revalued the two antigens in diagnosis and monitoring of recurrent leprosy.

Objective: To evaluate the serological activity of antigens ND and NT against IgM and IgG in the serums of the following subjects, and to explore the relationship between the seral OD values and the bacterial indexs. Then using the methods to monitor the serum antibody levels in patients who had been cured.

Methods: ELISA was applied to detect the antibodies IgG and IgM against ND and NT.The relationship between the serological activity and bacterial index was displayed by plotting method.

Results: 1) The two antigens show high serological activity. The OD value of ND-ELISA was slightly greater than that of NT-ELISA,and the antibodies in MB was more than PB. 2) For the normal ones,the antibodies detected with NT was more than ND ,and IgG was more than IgM. 3) The two antibodies against ND detected were the same with the connective tissue disease, the psoriasis,,and the pulmonary tuberculosis patients.But in NT -ELISA,their levels of antibodies were all higher than the normal ones except

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the connective tissue disease group. 4) The mean OD value of leprosy serum positively correlated with the bacterial index. 5)There were 6 leprosy patients whose antibodies increased for two consecutive years.

Liminations: The time for monitoring the recurrence of leprosy was short.

Conclusion: There was no cross-reactivity with the diseases mentioned in ND -ELISA,whose sensitivity and specificity were better. To a certain extent,it could replace the method of bacteriological index to early diagnose leprosy. The sensitivity of NT-ELISA was great,but its specificity was lower than ND -ELISA.It could be used as preliminary screening for leprosy.

Keywords: Re-evaluation, ND-O-BSA, NT-P-BSA

#0796/ ILCABS947

EVALUATION OF A SEMISYNTHETIC ANTIGEN IN SEROLOGICAL DETECTION OF LEPROSY

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Introduction: NT-P-BSA is the immunodominant disaccharide epitopes of PGL-I(a characteristic surface glycolipid of leprosy) linked to bovine serum albumin. This study was designed to compare the sensitivity and specificity of the two methods NT-P-BSA-IgM-ELISA and NT-P-BSA-IgG-ELISA, and to establish more optimized method.

Objective: To evaluate the sensitivities and specifies of the NT-P-BSA-IgM-ELISA and NT-P-BSA-IgG-ELISA

Methods: Serum antibodies IgG and IgM against NT-P-BSA were detected in 80 lepers, 80 normal persons, and the pregnancy individuals, the connective tissue disease, the psoriasis, the pulmonary tuberculosis patients 30 cases for each.

Results: 1) When serum concention was 1:200,more antibodies could be detected than it was 1:100. 2) The two antibodys in multibacillary leprosy patients were all more than them in paucibacillary ones. Also the serum level of the antibodies detected was apparently higher in the serums of pregnancy individuals and the psoriasis, the pulmonary tuberculosis patients than it in the normal people. 3) When the bacterial index was 0, the serum OD value was between 0.08 and 0.26. With the increase of bacterial index, the BI value of different patients was the same, but the OD value of serum had changed greatly.

Limination: Larger samples were needed.

Conclusion: There were IgM and IgG antibodies in leprosy patients against NT-P-BSA, and the levels of them were high in multibacillary leprosy patients and low in paucibacillary ones. There was cross reactions between the leprosy patients and the pregnancy individuals , the psoriasis, the pulmonary tuberculosis patients. ELISA was more sensitive than bacterial examination.

Keywords: NT-P-BSA, ELISA, Leprosy

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#0797/ ILCABS959

EVALUATION OF VARIOUS CYTOKINES RESPONSE AGAINST MYCOBACTERIUM LEPRAE AS NEW BIOMARKERS FOR LEPROSY

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Objectives: We investigated the accuracy of host markers detected in Mycobacterium leprae (*M. leprae*) antigen-stimulated peripheral blood mononuclear cells (PBMCs) culture supernatant in the diagnosis of leprosy.

Methods: A total of 76 subjects including patients with paucibacillary (PB) leprosy (n=17), multibacillary (MB) leprosy (n=19), healthy household contacts (HHC) (n=20)and endemic healthy controls (EC) (n=20) were enrolled to investigate the cytokine production profile by PBMCs after *M. leprae* stimulation evaluated by a beads-based multiplex assay system.

Results: In the 17 cytokines we evaluated, IL-4, IL-6, MCP-1, MIP-1β, G-CSF, GM-CSF, IFN-γ and TNF-α were identified as having significantly higher expression in MB patients compared to EC, and the level of TNF-α was significantly higher in MB patients compared to PB patients.The production of IL-6 and MCP-1 induced by *M. leprae* was significantly increased in PB patients compared to EC. The combination of IL-6 and MCP-1 accurately identified 88.2% of PB patients and 95.0% of healthy controls.The *M. leprae*-stimulated TNF-α was the strongest discriminator between MB patients and healthy controls with an AUC of 0.974. However, none of these biomarkers tested could discriminate PB patients from HHC, which suggest that antigen-specific responses of HHC are similar to PB patients.

Conclusion: Multiple cytokines in response to *M. leprae* were found in PB and MB patients. MCP-1 combined IL-6 has the potential to discriminate PB patients from EC, while TNF-α may serve as an indicator to distinguish MB patients from EC. Our findings may help to develop a diagnostic test for the early detection of leprosy.

Keywords: Leprosy, Cytokine, Luminex, Biomarker

#0798/ ILCABS965

PRELIMINARY STUDY ON THE PROTEOME OF MYCOBACTERIUM MARINUM-INFECTED MACROPHAGES

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Introduction: Mycobacterium marinum (Mm) is being used increasingly as a biological model for understanding pathogenic mycobacteria. The infection of Mm in humans presents as a nodular granulomatous disease. However, understanding the molecular mechanisms underlying granuloma formation is incomplete. Macrophages are key cells in granulomatous formation, and the study of macrophages after Mycobacterium marinum infection will benefit to understand general issues of host-pathogen interactions.

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Methods: We performed a comprehensive proteomic analysis of Mm-stimulated macrophages and controlled via label free quantification method. To further understand the proteomic profiles in macrophages treated with Mm, GO annotation and KEGG pathway enrichment were performed.

Results: A total of 6886 proteins are identified in macrophages with the data-dependent acquisition method, of which 303 proteins were evaluated as statistically significant. Bioinformatic analyses reveal discrete modules and the underlying molecular mechanisms, as well as the signaling network that modulates host-pathogen interactions. GO enrichment analysis demonstrated that the signal transduction process and positive regulation of transcription by RNA polymerase II process play a pivotal role in the infection of Mm. Beyond that, we found that the most enriched KEGG pathways were mainly composed of metabolic pathways, such as lipid and atherosclerosis, glycolysis.

Conclusion: We have identified a number of cellular proteins whose levels were significantly altered upon infection of macrophages. The changes in protein expression by the stimuli of Mm reflect the intrinsic functional differences. These results not only support the hypothesis that proteins of metabolic pathways, especially lipid metabolism, play a key role in regulating the macrophage response to Mm but also provide a proteomic resource for further studies."

Keywords: Mycobacterium Marinum, Proteome, Macrophage

#0799/ ILCABS970

EXPRESSION OF NLRP3 INFLAMMASOME IN ERYTHEMA NODOSUM LEPROSUM SKIN LESIONS: AN IMMUNOHISTOCHEMICAL EVALUATION

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Introduction: Leprosy is a chronic infectious disease caused by mycobacterium leprae infection, which is still prevalent in many poor areas and developing countries in the world. Erythema nodosum leprosum is an acute inflammatory episode that complicates the process of mycobacterium leprae infection and is the main cause of lepra-related pathology. More recently, More recently, NLRP3 inflammasome has played a role in the inflammatory response to microbial infections and autoimmune diseases. However, the role of the inflammasome in leprosy, especially in the Erythema nodosum leprosum, is still poorly understood.

Objectives: The aim is to associate biomarkers of NLRP3 inflammasome with Erythema nodosum leprosum and lepromatous leprosy.

Material and methods: We performed an observational, cross-sectional, and comparative study of the immunophenotypic expression of NLRP3 inflammasome-associated proteins in Erythema nodosum leprosum of 9 skin lesion samples and lepromatous leprosy of 10 skin lesion samples by immunohistochemistry. The intensity and percentage of NLRP3, Caspase-1, interleukin-1β and Gasdermin D immunoreactivities in the inflammatory infiltrate of skin biopsies were evaluated.

Results: Strong expression of NLRP3, Caspase-1 and Gasdermin D were observed in erythema nodosum leprosum skin lesion than lepromatous leprosy (lepromatous pole) skin lesion. In addition, were observed a strong expression of NLRP3, Caspase-1, interleukin-1β and Gasdermin D in the epithelioid granuloma area of erythema nodosum leprosum skin lesion. The expressions of NLRP3, Caspase-1 and Gasdermin D in skin lesions of patients with t lepromatous leprosy were stronger than those in non-leprosy skin infiltration tissues.

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Limitations: Small sample size represents the limitations of this study.

Conclusions: Our results demonstrate that the NLRP3 inflammasome is involved in the progression of erythema nodosum leprosum.

Keywords: Leprosy, NLRP3 inflammasome, Erythema nodosum leprosum, Immunohistochemical

#0800/ ILCABS1011

A LABORATORY TESTING PATTERN FOR LEPROSY

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Early detection of lerosy cases is a strategy to stop the transmission of *M. leprae* and to prevent the occurrence of physical disability. Slit skin smear and histopathological examinations are currently the main laboratory tools used to aid the diagnosis of leprosy. However, their sensitivity is low, and many cases are not detected.

New methodologies have been studied to develop more accurate tests.The molecular (polymerase chain reaction) and serological (Leprosy Ab Rapid test) tests with high specificity and sensitivity applied to the diagnosis of leprosy.However, an integrated pattern study of these methodologies has been suggested for greater accuracy in diagnosis.

A way of improving laboratory diagnostic capacity was assessed by the integrated analysis of serological and molecular tests using the laboratory testing pattern, which showed greater sensitivity and specificity in identifying 10 early cases include MB and PB as well as much more subclinical infections in household contacts last year.

Molecular and serological assays are very promising for the diagnosis of leprosy.The integrated laboratory testing pattern of the methods could increase the sensitivity and specificity, contributing to early diagnosis or monitoring of household contacts, thus promoting greater control of the disease.

Keywords: Laboratory testing, Leprosy

#0801/ ILCABS1065

DERMOSCOPIC PATTERN ANALYSIS AND HISTOPATHOLOGICAL CORRELATION IN CASES OF LEPRA REACTIONS

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Introduction: Reactions in cases of Leprosy are immunological reactions developing in cases of Hanse's disease to the changes in a patient's immune status in response to Mycobacterium leprae that may occur before, during, or even after the completion of multidrug therapy.

Objectives: To identify and correlate Dermoscopy and hsitoapthologic patterns in cases of Lepra Reaction. The present case aims to describe dermoscopic patterns in Lepra Reaction according to the severity of lesions and the type of leprosy.

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Patients : 7 cases of Lepra reactions were identified and their detail history and examination was done. For confirmation and study purpose their Dermoscopy and Skin Biopsy was done from the same site.

Results: Diffuse yellowish brown structureless area, with diffuse erythema, Decreased no. of hair, Decreased white dots, Linear irregular vessels (Serpentine) (black arrow), Telangiectasia (blue arrow), Shiny white areas (green arrow), Follicular plugging (sky blue circle), Patchy areas of increased, pigmentary network (cream arrow), Peripilar scales (orange triangle) were commonly observed in the cases.

Limitations: Only a single case of Type 1 reaction was obtained during the study. One patient might have more than one lesions of leprosy, but we studied only one lesion from one patient as patients were not ready for multiple biopsies.

Conclusion: Sunflower like appearance, rosette like pattern and milky red background in histoid leprosy, target like pattern in type 2 lepra reaction and yellowish brown structureless area, out of focus vessels among various types of leprosy spectrum were the unique dermoscopic findings from our study which has yet not been described in prior literature as per our literature survey.

Keywords: Dermoscopy, Hanes's disease, Histoapthology

#0802/ ILCABS1080

TONGUE SWABS: A PROMISING NEW SAMPLING TECHNIQUE FOR MICROBIOLOGICAL CONFIRMATION OF LEPROSY DIAGNOSIS

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Introduction: Skin biopsies from patients who present with clinical signs of leprosy are the most reliable source to obtain Mycobacterium leprae bacilli for microbiological diagnosis. Tongue swabs are considerably less invasive and showed promising results for the qPCR-based detection of M. tuberculosis for the diagnosis of presumptive tuberculosis patients.

Methods: During the PEOPLE study, we are recruiting clinically diagnosed leprosy patients from the Comoros Islands via door-to-door screenings. In a set of 23 patients, we asked for a tongue swab sample, rubbing a swab over the first two thirds of the tongue for 15 seconds, in addition to the routine skin biopsy from the edge of a lesion. From those concurrent samples DNA was extracted and the amount of *M. leprae* DNA was quantified in triplicate with the RLEP qPCR assay for 45 cycles.

Results: We detected *M. leprae* DNA on 8/23 (34,8 %) swabs where all triplicates gave a positive result, on another swab (4,3 %) we detected traces of *M. leprae* DNA (1 triplicate positive). All environmental and extractions controls yielded expected results. When no *M. leprae* DNA was detectable in the skin biopsy, the concurrent tongue swab also had a negative result. The Cq-values of skin biopsies and tongue swabs correlated, although, extracts from skin biopsies contained more DNA.

Discussion: This is the first study to identify *M. leprae* bacilli on the tongue dorsum in a third of clinically diagnosed leprosy patients. Based on these results we will continue to optimise this minimally invasive sampling method to increase the DNA yield for microbiological diagnosis.

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THERAPEUTICS

#0803/ ILCABS55/ILCABS56

METHOTREXATE AS A CORTICOSTEROID-SPARING AGENT IN LEPROSY REACTIONS: A FRENCH MULTICENTER RETROSPECTIVE STUDY

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Introduction: First-line treatment of leprosy reaction (LR) is based on corticosteroids (GCs). GCs administration at high dose during extended periods is associated with morbidity and even death. Current challenge in leprosy is now to develop and evaluate new therapeutic alternatives to GCs. Methotrexate (MTX) is an immunosuppressant agent used in inflammatory diseases with a good tolerance profile and a worldwide availability.

Objective: Therefore we aim to study the efficacy, GCs-sparing and safety of MTX in LR.

Patients / material and methods: We conducted a French retrospective multicentric study including leprosy patients treated with MTX for a reversion reaction (RR) or an erythema nodosum leprae (ENL) since 2016. Primary endpoint was the rate of good responders defined as complete disappearance of inflammatory (cutaneous or neurological) symptoms without relapse under MTX. Secondary endpoints were safety, corticosteroid-sparing and clinical recurrences after MTX discontinuation.

Results: 13 patients were included. Leprosy reaction were ENL (n=6), RR (n=4) and both ENL and RR (n=3). All patients received at least one previous course of GCs. 61.5% were defined as good responders, allowing GCs sparing and GCs withdrawal in 54,5% of cases. No severe adverse effects were noticed. After stopping MTX, 42% undergo relapse within a median time of 5.5 months after discontinuation.

Conclusion: Our study is the largest cohort reporting the benefit of MTX in the treatment of LR allowing GCs sparing. 62% of patients were considered as good responders. However, its efficacy seems to be suspensive with a high recurrence rate of 42% after discontinuation. These data argue for prolonged MTX treatment in order to maintain clinical response, limit relapses upon discontinuation and avoid iterative courses of GCs.

MTX could also be a benchmark treatment not only in refractory or cortico-dependent LR but also in early stages in association with GCs, allowing early GCs withdrawal.

Keywords: Leprosy reactions, Erythema nodosum leprosum, Reverse reaction, Methotrexate

#0804/ ILCABS266

PURE RED CELL APLASIA IN A PATIENT WITH PURE NEURITIC LEPROSY -AN UNUSUAL TOXICITY OF DAPSONE THERAPY

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Introduction: Dapsone (4, 4'- diaminodiphenylsulfone) is the parent compound of the sulfones, and it has potent antiparasitic, anti-inflammatory, and immunomodulatory effects. Pure Red Cell Aplasia (PRCA) is an

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uncommon hematologic disorder characterized by anemia, reticulocytopenia, and erythroid aplasia in bone marrow. It can be categorized as congenital or acquired. The secondary acquired form is associated with viral infections, thymoma, tumors, hemolytic anemia, pregnancy, severe nutritional deficiencies, and collagen vascular disease. Drug induced PRCA is rare and has been rarely reported with dapsone in leprosy patients. Herein we report a case of pure neuritic Hansen on MDT who developed pure red cell aplasia secondary to dapsone.

Case description: A 20-year-old female presented with complaints of numbness and deformity of left little finger. She was diagnosed to have pure neuritic Hansen based on left ulnar axonopathy on electrophysiologic study and a positive PCR on nerve biopsy sample and was started on MB-MDT. After 6 weeks of treatment, she presented with fever and generalized myalgia. Her blood investigations revealed anemia (Hb: 8.9 g/dl) and neutropenia (2800 cells/cu.mm) with peripheral smear showing elliptocytes and tear drop cells. Bone marrow aspirate showed suppressed erythropoiesis with increased proerythroblast and reactive plasma cells. Considering a diagnosis of pure red cell aplasia secondary to dapsone, she was started on prednisolone and dapsone was stopped following which her general condition improved. She was continued on MBMDT without dapsone.

Conclusion: This case highlights an unusual and potentially fatal toxicity of dapsone therapy. Clinicians should be aware of dapsone induced pure red cell aplasia as one of the hematological manifestation of dapsone

Keywords: Pure red cell aplasia, Pure neuritic leprosy, Dapsone

#0805/ ILCABS389

INFLIXIMAB- A NEW HOPE IN TREATMENT OF CHRONIC RECALCITRANT ERYTHEMA NODOSUM LEPROSUM

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Introduction: Erythema nodosum leprosum (ENL) also known as type2 reaction is an immune complex mediated reaction occurring in BL and LL Hansen before, during or after completion of treatment. ENL is characterized by tender subcutaneous evanescent nodules with constitutional symptoms that heal with hyperpigmentation. Few patients are unresponsive to conventional therapies and develop chronic ENL.

Description: A 21year old unmarried female, completed the multidrug-therapy (Rifampicin, Dapsone, Clofazimine) for LL Hansen (bacteriological index 4+) 9months ago and started developing multiple, painful, red swellings over both legs, forearms, buttocks and face with fever, joint pain, weakness 3-4months after staring the therapy. Skin biopsy from one nodule was consistent with clinical diagnosis of ENL. The symptoms didn't respond adequately to oral Prednisolone, colchicine (0.5mg BD), pentoxifylline (400mg TDS), paracetamol (650mg SOS). New crops of lesion started appearing within 2-3weeks whenever Prednisolone was tapered to 10mg/day. The patient refused to take Thalidomide. She developed adverse reactions like facial puffiness, acne-form eruptions, bluish pigmentation over cheeks, gastritis, and candidiasis after prolonged corticosteroid therapy. Considering the adverse reactions and severity of her condition it was decided to start her on Infliximab. All the necessary investigations were done prior to administration of Infliximab therapy. All the immunosuppressive medications were discontinued and 3doses of Infliximab infusion (5mg/kg body-weight, total 250mg/dose) given after proper premedication on day-0, 2week and

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6week. The patient reported that the lesions of ENL disappeared within 1day of first dose. The patient was followed up for 6months; during this period, she had no new ENL lesions.

Discussion: TNF-α plays a pivotal role in immunopathogenesis of ENL. TNF-α inhibitors may be considered as an effective alternative in patients with chronic and recurrent ENL, not responding to conventional therapies. However, the physician should be vigilant about reactivation of tuberculosis while advising Infliximab.

Keywords: Infliximab, ENL, TNF-α inhibitor, Hansen

#0806/ ILCABS395

DAPSONE INDUCED PHOTOSENSITIVITY- A RARE ADVERSE EFFECT.

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Introduction: Dapsone (4,4'- diaminodiphenylsulfone, DDS) is a sulfonamide antibiotic used in both dermatological as well as nondermatological conditions. It remains as an important drug in the multidrug therapy and acts by inhibiting folate metabolism in Mycobacterium leprae. Photosensitivity is a rare adverse effect of dapsone and it can be phototoxic or photoallergic reaction.

The sulfone group present in the parent molecule as well as its metabolites are responsible for the dapsone induced photosensitivity.

We report a case of dapsone induced photosensitivity in a case of lepromatous leprosy.

Case Report: 46-year-old male, diagnosed case of lepromatous leprosy on second month of multidrug multibacillary therapy presented with complaints of redness and scaling over the face, nape and flexural aspect of the neck, bilateral upper limb and bilateral lower limb. The lesions progressed over a period of 2-3 days and was associated with fever and itching. There was no history of similar illness in the past and no history of any recent drug intake other than multibacillary multidrug therapy or any native medications. He is known alcoholic and smoker and had no other comorbidities.

On examination patient had pallor and clubbing of fingers. There was no jaundice, hepatosplenomegaly or lymphadenopathy. Erythematous plaques with crusting and fissuring noted over the neck, face, bilateral upper limbs and bilateral lower limbs.

Hematological investigation showed low hemoglobin and peripheral eosinophilia and biochemical investigations were within normal limits. Dapsone induced photosensitivity was diagnosed and dapsone was stopped immediately. Patient was started on 0.5mg/kg of prednisolone, antihistamines and sunscreen. Patient got symptomatically better and discharged and was continued on multidrug therapy without dapsone.

Conclusion: Clinicians should be aware of the risk of dapsone induced photosensitivity and if diagnosed dapsone should be immediately stopped.

Keywords: Dapsone, Lepromatous leprosy, Photosensitivity

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#0807/ ILCABS427

SHORTENING BURULI ULCER TREATMENT: WHO RECOMMENDED VS. A NOVEL BETALACTAM CONTAINING THERAPY – PHASE II AND PHASE III STUDIES IN WEST AFRICA (THE BLMS4BU CLINICAL TRIAL)

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Buruli ulcer (BU) is a neglected tropical skin disease, caused by Mycobacterium ulcerans (Mul), that affects mainly children under 15 years old in Africa. Current WHO-recommended treatment requires 8-weeks of daily rifampicin and clarithromycin, wound care and, sometimes, tissue grafting and surgery. Healing can take up to one year and may pose an unbearable financial burden to the household. Recent studies demonstrated that beta-lactams combined with rifampicin/clarithromycin are synergistic in vitro against Mul (PMID:30689630) leading to the hypothesis that the inclusion of amoxicillin/clavulanate may improve and shorten BU therapy. The aim of the BLMs4BU clinical trial is to evaluate whether co-administration of amoxicillin/clavulanate with rifampicin/clarithromycin can shorten BU treatment from 8 to 4 weeks. A randomized, controlled open label non-inferiority Phase II, multi-centre trial started in Benin in December 2021 (ClinicalTrials.gov Identifier: NCT05169554). A Phase III multi-centre trial in Ghana, Togo and Côte d'Ivoire is planned to start in December 2022. Patients are stratified according to BU category lesions and randomized to two regimens: (i) standard: rifampicin/clarithromycin for 8 weeks; and (ii) investigational: rifampicin/clarithromycin plus amoxicillin/clavulanate for 4 weeks. Patients will be followed-up for 12 months and managed according to standard clinical procedures. Decision for excision surgery will be made by an independent clinical panel at week 14 after treatment initiation. The primary efficacy outcome is cure (lesion healing without recurrence) without excision surgery 12 months after start of treatment. If successful, this study will create a new paradigm for BU treatment, which could lead to a change in WHO policy and practice for this disease. A shorter, highly effective, all-oral treatment will improve the care of BU patients, adherence to treatment and will decrease costs. This trial may also provide information on treatment shortening strategies for other mycobacterial infections (tuberculosis or leprosy), where rifampicin is the cornerstone drug.

Keywords: Buruli ulcer, Skin neglected tropical disease, Treatment shortening, Non-inferiority, Drug combination, Amoxicillin/clavulanate

#0808/ ILCABS436

NOVEL USE OF APREMILAST IN STEROID DEPENDANT ERYTHEMA NODOSUM LEPROSUM(ENL)

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Introduction: A chronic and recurrent erythema nodosum leprosum (ENL) is immune-mediated reaction in patients with multibacillary leprosy which causes significant distress in leprosy patients requiring long term

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treatment with current available drugs. Multiple drugs including corticosteroids and thalidomide had been tried for same causing serious side effects like steroid dependant ENL. Management of such cases is more difficult and no single drug regimen is proposed. Apremilast (phosphodiesterase-4 inhibitor with a potent immunomodulatory action) is a novel option in this scenario. It inhibits the proinflammatory cytokines which play a key role in the ENL pathogenesis. We present two female patients with poorly controlled chronic steroid dependant ENL who responded with significant clinical improvement with apremilast starting within 4 weeks of treatment, improvement in neuritis with no adverse effects and no recurrences of ENL.

Objective: Apremilast efficacy in steroid dependant erythema nodosum leprosum

Patients/Material and methods: We present 2 cases of chronic, recurrent steroid dependant ENL treated with oral apremilast. Our first case 19-year-old female who was on MBMDT for 1 year and on tapering doses of corticosteroids for 2 years while second patient 50-year female on corticosteroids for 4 years. Patients treated with long term oral aspirin and 1-3 years of oral clofazimine but land up in reddish brown pigmentation as side effect. Thus, patients were shifted on oral apremilast 20 mg BD as novel management and oral steroid was successfully tapered without any recurrences.

Results: Both patients reported improvement of cutaneous and extracutaneous symptom within 4 weeks and ongoing maintenance for 6 months without recurrence yet.

Limitations: Prospective study with larger sample size is required.

Conclusion: Apremilast can be considered as a very good option in steroid resistant or steroid dependant ENL with least side effects or in cases where steroids or immunosuppressants are contraindicated.

Keywords: Erythema nodosum leprosum, Steroid dependant ENL, Apremilast, Novel drugs

#0809/ ILCABS490

COMBINATION THERAPY OF CYCLOSPORINE AND METHYLPREDNISOLONE IN RECCURENT ERYTHEMA NODOSUM LEPROSUM

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Intorduction: As many as 30-50% of leprosy patients experience leprosy reactions that can occur before, during, or after the completion of treatment. Erythema Nodosum Leprosum (ENL) or type 2 leprosy reaction characterized by painful red nodules that can ulcerate in severe reactions. Administration of high doses of corticosteroids is the mainstay of therapy for controlling leprosy reactions, but due to the nature of recurrent reactions, long-term steroid use is often required. Long-term use of steroids can result in many side effects. Therefore, research continues to be developed to find alternative therapies for leprosy reactions.

Case: We report a case of relapsed multibacillary leprosy with recurrent ENL in a 50-years-old woman who received Multi Drug Therapy (MDT), methylprednisolone tapering off dose 8 mg/day and cyclosporine 5 mg/kg/day. Combination therapy of cyclosporine and methylprednisolone showed good results characterized by clinical improvement and decrease in ENLIST ENL Severity Scale from 10 to 3 in 2 weeks.

Conclusion: This case report suggests that cyclosporine may exert a beneficial effect on ENL. However, there is not much literature discussing the use of cyclosporine in ENL cases so that further evaluation of these cases is needed.

Keywords: Leprosy, Reaction, Cyclosporine, Methylprednisolone

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#0810/ ILCABS555

IMPLEMENTATION OF ACTIVE SCREENING FOR LEPROSY AND POST-EXPOSURE PROPHYLAXIS IN BOLIVIA

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Introduction: Bolivia reports an annual new case notification rate of 6 per million inhabitants, with the region of Santa Cruz holding more than 60% of the national leprosy burden. To tackle this issue, the regional leprosy programme decided to implement active detection and prevention activities in the most prevalent villages.

Objectives: In Santa Cruz to screen for leprosy in household contacts of new leprosy patients detected between 2019 and 2022 and to provide single-dose-rifampicin as post-exposure prophylaxis(SDR-PEP) for healthy contacts.

Methods: A-line listing of new leprosy patients diagnosed in 2019 to 2021 served to programme visits to their households. A team of medical doctors and leprologists screen for leprosy in contacts of new leprosy contacts who have both given their consent. New leprosy patients detected were put on treatment and healthy contacts eligible received SDR-PEP at 10mg/Kg.

Results: From September 2021 to March 2022, 30 new leprosy patients were visited, and the mean household size was 4, interquartile range(IQR): 2-5. There were 112 contacts listed and present during the visit, from which 83(74%) accepted to be examined. We found 2 new cases among 83 examined accounting for a prevalence of 24.1‰, both were multibacillary and over 30 years old and one had a grade two disability. Seventy-nine(97%) among 81 eligible accepted SDR-PEP and no side effects were reported.

Limitations: Refusals for examination accounted for 26% of the contacts.

Conclusion: The door-to-door screening unmasked leprosy cases although those had advanced clinical characteristics including mutilation. Acceptability of chemoprophylaxis was close to 100%. Sensitization needs to be reinforced to encourage people to be screened for leprosy. This study can be replicated in other Bolivian regions to curb transmission.

Keywords: SDR-PEP, Bolivia, Leprosy prevention, Active case finding, Feasibility PEP

#0811/ ILCABS561

EFFECTIVE AMELIORATION OF LUCIO PHENOMENON WITH ADJUVANT TOFACITINIB THERAPY IN A PATIENT WITH DUAL INFECTION OF *M. LEPRAE* AND M. LEPROMATOSIS

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Introduction: Lucio phenomenon (LP) is characteristic reaction pattern seen in patient of diffuse lepromatous leprosy(DLL). Dual infection of *M. Leprae* and M. Lepromatosis in case of DLL is confirmed

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from other endemic country but same is yet to be documented from India. Leprosy lymphadenitis in patient of DLL can be misleading in absence of skin lesion. Conventionally LP is treated with high dose of systemic glucocorticoid (GC) and anti-leprosy treatment (ALT). Here we are reporting an interesting case of leprosy lymphadenitis as initial presentation in case of LP and DLL due to dual infection with *M. Leprae* and M. Lepromatosis who responded favourably to tofacitinib as adjuvant to ALT and systemic GC therapy.

Description: A 24-year-old man from rural area of Madhya Pradesh state of India, presented with complaint of swelling over bilateral inguinal region, pus filled skin lesions with multiple ulcers, fever and joint pain. Post hospitalization investigations showed presence of anemia, leukocytosis and elevated acute and chronic inflammatory markers. Skin and lymph node biopsies were suggestive of LP and Leprosy lymphadenitis. Presence of *M. Leprae* and M. Lepromatosis was confirmed by PCR study of tissue. Despite of anti-leprosy treatment, oral GC and thalidomide therapy patient continue developing new lesions. In view of emerging role of Th17 cytokines in lepra reaction and persistent leucocytosis tofacitinib was added as adjuvant therapy. Post one-month commencement of adjuvant tofacitinib, patient experienced excellent clinical improvement as healing of all existing lesions and cessation of new lesion of LP.

Conclusion: Our case confirms the presence of dual infection with *M. Leprae* and lepromatosis in India. Lymph node involvement as initial presentation of DLL should be considered in endemic area. Tofacitinib can emerge as promising new adjuvant therapy for recalcitrant lepra reaction owing to its effect on intracellular signal transduction of multiple cytokines.

Keywords: Lucio phenomenon, Diffuse lepromatous leprosy, Leprosy lymphadenitis, Mycobacterium lepromatosis, Tofacitinib

#0812/ ILCABS570

CHARACTERIZATION OF CONTACTS OF PERSONS AFFECTED BY LEPROSY, APPROACHED WHILE ADMINISTERING ENHANCED POST-EXPOSURE PROPHYLAXIS - PEP++

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Introduction: Close Contacts (CC), household and social contacts of leprosy cases are recognized to be at higher risk of becoming ill. Therefore, an active search for CC is an important strategy for the interruption of leprosy transmission.

Objective: To characterize the CC approach in the Enhanced Post-Exposure Prophylaxis Programme, PEP++, considering sociodemographic and clinical aspects.

Methods: Cross-sectional study, conducted in Fortaleza and Sobral, Northeast region of Brazil, involving CC of leprosy cases diagnosed in the period from 2015 to 2021. Data were recorded using REDCap software.

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Results: CC listed by the index cases (IC) were approached. A structured instrument was applied, a dermato-neurological examination was performed and, for cases without signs or symptoms of leprosy, chemoprophylaxis was given, comprising single-dose rifampicin (SDR-PEP) in control areas and rifampicin with clarithromycin in three doses (PEP++) in intervention areas. We approached 660 CC, 424 (64.2%) from control area; 309 (46.8%) women, mean age 39.5 years; 390 (59.1%) are family contacts. 433 (65.6%) received chemoprophylaxis. Of these 296 (68.4%) took SDR-PEP and 137 (31.6%) PEP++. Of the total, 150 (22.7%) were excluded from the study, 91 (13.8%) temporarily; 42 (6.7%) with possible signs of leprosy. Of the latter, 24 (57.1%) were already examined by a dermatologist, with 3 cases diagnosed.

Limitation: It was difficult to find all contacts at home during the weekdays.

Conclusion: The CC approach to leprosy in the PEP ++ programme builds on a model used for SDR chemoprophylaxis, moving towards an an approach integrating research actions and regular contact screening in contact assessment, especially among family members. The integration of research actions to the health network enhances the services to expand and improve access.

Keywords: Leprosy, Chemoprophylaxis, Contact tracing

#0813/ ILCABS576

A RARELY EMPLOYED SPLIT-DOSE ORAL CORTICOSTEROID REGIMEN IN A CASE OF LEPROSY WITH SEVERE TYPE 2 REACTION IN CONJUNCTION WITH MDT AND ITS THERAPEUTIC RATIONALE.

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Introduction: Oral corticosteroids form the mainstay treatment of lepra reactions. However often the patient becomes steroid dependent. While the patient can be started on steroid sparing agents to help taper the dose of oral corticosteroids, this is often not achieved and multiple side effects occur. In such a scenario, a split dose regimen of the existing once daily oral steroids dose may help to manage the patient effectively, bypassing the need to increase the steroid dose. Case Report: A 35 year-old male, known case of LL with ENL presented with new ENL lesions for the past one week. His ENLIST score was 21, suggestive of severe ENL. Slit skin smear from an ENL nodule revealed fragmented bacilli with a BI of 3+. As the patient had severe ENL, oral methylprednisolone was started in a dose of 32 mg daily along with subcutaneous methotrexate 15 mg once weekly. Even after 4 weeks, he continued to develop new lesions. While the conventional norm is to increase the steroid dose, it has been our experience that this often leads to steroid dependence. Thereafter, the single dose of methylprednisolone was split into a dose of 16 mg in the morning and evening. Within 2 days, the patient stopped developing new lesions and in 7 days achieved an ENLIST score of 0, suggesting a rapid response. This dose regimen was maintained for 2 weeks following which the evening dose was tapered down by 4 mg every 7 days. Presently the patient is well controlled on oral 16 mg methylprednisolone once daily with methotrexate 10 mg weekly. Conclusion: The split dose regimen for administering oral steroids is an effective measure for severe ENL patients and can be extended to steroid dependent cases of chronic and recurrent/ recalcitrant ENL. We discuss the therapeutic rationale for the same.

Keywords: Erythema nodosum leprosum, Oral steroids, Lepra reaction

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#0814/ ILCABS645

TOPICAL INSULIN - SAFER, CHEAPER, EFFECTIVE TREATMENT OPTION FOR TROPHIC ULCER

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Introduction: Trophic ulcers are common complication of HANSEN disease. They are painless, slow to heal, quick to recur. Growth factors are newer mode of treatment with good wound closure and safety profile

Objectives: To determine the effectiveness of topical insulin therapy in Trophic ulcer patient.

Materials/Methods: A known case of old treated Hansen disease with Trophic ulcer over the sole of the Right leg for 5 months. Patient did not have any co morbidities. Patient was planned for Topical insulin therapy. Routine blood investigations were taken and pus culture was taken to rule out active infection at the site of the ulcer. X-ray foot was taken to rule out bone involvement. Photograph and depth of the ulcer was assessed before starting therapy. Capillary blood glucose is measured to ascertain normal blood glucose levels. After getting informed consent, topical insulin (Insulin Mixtrad) was applied over the Trophic ulcer at a dose of 1unit (0.1ml) per cm2 area of the wound. And the wound was closed with gauze piece after 15 minutes. Capillary blood glucose levels were recorded 15 minutes after the procedure. This method was repeated twice daily for 5 weeks. Regular assessment with photographs and depth measurement was done once a week and was tabulated.

Limitation: Number of case taken for the study.

Results: The patient showed good response to the treatment. Depth of the wound reduced in 1 week and complete wound closure occurred at the end of three weeks of Insulin therapy.

Conclusion : Topical insulin therapy is a safe, effective and cheaper alternative for Trophic ulcer management with limited to no systemic side effects.

Keywords: Trophic ulcer, Topical insulin, Growth factor, Safety

#0815/ ILCABS651

EFFICACY OF MACOZINONE AND SUTEZOLID AGAINST MYCOBACTERIUM LEPRAE

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Introduction: Mycobacterium leprae (*M. leprae*), the principal etiological agent of Hansen's disease, infects the peripheral nerves, mucous membranes, and skin. The present anti-leprosy multi-drug therapy (MDT) requires prolonged treatment duration (6 to 24 months) and has unpleasant side-effects: causing reduced compliance, increasing the risk of relapse, transmission opportunities, and drug resistance. Therefore, there is a clear need to explore new therapeutic interventions against leprosy, which can effectively shorten treatment duration without increasing adverse reactions.

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Objective: To test the efficacy of Macozinone and Sutezolid, having different modes of action, against *M. leprae* in vitro as well as in the mouse foot pad (MFP) model.

Methods: *M. leprae*, freshly harvested from nude mouse foot pads (FP), were incubated at 33oC with Macozinone and Sutezolid at different concentrations. Radiorespirometry (RR) assay was used to determine bacterial beta-oxidation rate as a measure of viability. Mouse bone marrow derived macrophages were infected with *M. leprae* and were treated with different drug concentrations. Macrophages were lysed and RR was performed on released *M. leprae* to measure bacterial viability. To evaluate the efficacy against *M. leprae* in vivo, athymic nude mice hind FP were inoculated with 3x10^7 *M. leprae* and infection was allowed to progress for 2 months. Then drugs were administered by gavage as either a single dose, 5 daily doses or 20 doses (5x4weeks). FPs were harvested one month post-treatment and *M. leprae* viability determined by measuring normalized expression of esxA transcripts.

Results: Macozinone and Sutezolid are effective against *M. leprae* both in vitro (axenic and intracellular) and in vivo (MFP).

Limitations: The study did not use intermittent dosing of the drugs or in combination with other drugs.

Conclusion: Macozinone and Sutezolid should be tested in combination with other first and second line drugs to explore new shorter treatment regimens for leprosy.

Keywords: Macozinone, Sutezolid, EsxA, Viability, *M. leprae*.

#0816/ ILCABS691

EFFECTIVENESS OF TOPICAL INSULIN DRESSING IN MANAGEMENT OF TROPHIC ULCER IN HANSEN'S DISEASE

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Introduction: Chronic trophic ulcers are commonly seen in patients with leprosy mostly situated overlying the bony prominences.They are the leading cause of morbidity,deformity and disability in patients with leprosy,also impacting economic burden to patients due to chronicity and prolonged hospital stay.

Trophic ulcers in leprosy are therapeutic challenge with various treatment modalities available but none found to be universally effective.

Topical use of human regular insulin has been intensively studied with success in management of ulcers due to diabetes,other neuropathic causes and burns which led us to evaluate its efficacy in treatment of chronic trophic ulcer in Hansen's disease.

Description of the case: We present a 76 years old male,a case of treated Lepramatous Hansen's disease with MB-MDT five years back for one year with chronic trophic ulcer over dorsum of left foot extending to medial aspect of left ankle joint for 10 years.The ulcer was persistant and non healing despite conventional regular oral and topical antibiotics for 4 years.Also daily topical phenytoin and timolol dressing were tried for upto 6months each,followed by 2 sittings of PRF with no significant improvement.Patient is not a case of diabetes mellitus or venous insufficiency.

New Intervention: Insulin dressing was done twice daily for 24 weeks by topically spraying 0.1ml of regular insulin in 0.9ml of normal saline over the ulcer.

Significant improvement of ulcer was seen within short period of time with remarkable decrease in wound size from initial length of 21cm to 15cm and width from 1.5cm to 1cm with good granulation tissue.

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Conclusion: Topical insulin therapy is a potentially safe,efficacious,easily available and cost-effective therapeutic option for chronic trophic ulcer among patients with Hansen's disease

Keywords: Trophic ulcer, Hansen's disease, Topical insulin

#0817/ ILCABS695

MINOCYCLINE-INDUCED LICHENOID DRUG ERUPTIONS IN A PATIENT OF LEPROMATOUS LEPROSY NON-RESPONSIVE TO CONVENTIONAL MULTI-DRUG THERAPY

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Introduction: Leprosy is a serious public health problem despite free distribution of multi-drug therapy (MDT) blister packs by World Health Organization (WHO) all over the world. The recommended MDT consists of rifampicin, clofazimine and dapsone for multi-bacillary (MB) leprosy. However, there is a surge in lepromatous leprosy cases non-responsive to this conventional MDT-MB, taken for recommended period. In such cases, compliance and drug resistance should be checked. Second-line treatment is usually considered in this scenario. Minocycline is an important part of second-line MDT. It is known to cause lichenoid drug eruptions. We report a similar case of non-responsive lepromatous leprosy with lichenoid eruptions after initiation of minocycline.

Case description: A 44-years-old woman diagnosed as lepromatous leprosy in 2017, presented with itchy lichenoid papules and plaques on face, palms and soles and asymptomatic multiple focal violaceous lesions in oral mucosa for last 7 months. Scarring of old infiltrated lesions of lepromatous leprosy was noted. Bilateral ulnar and left common peroneal nerve were found to be thickened with nonprogressive glove and stocking hypoesthesia of distal limbs. She also developed multiple episodes of type 2 lepra reaction between 2017 to 2021. The BI in 2017 was 6+. After two years of MDT-MB, BI in 2019 was still 6+ and patient also developed low hemoglobin. Hence, dapsone was replaced with ofloxacin. After 1 year in mid 2020, BI reduced only to 4.75. Considering this, clofazimine and ofloxacin were continued along with addition of minocycline. In the current year 2022, she developed lichenoid lesions, due to which all drugs were stopped including minocycline. BI was repeated and was found to be zero. Patient was treated for drug rash.

Conclusion: In order to evaluate clinical improvement and prevent drug reactions, patients with high initial BI non-responsive to first-line MDT-MB require regular follow-up.

Keywords: Minocycline-induced lichenoid drug eruptions in leprosy, Cutaneous drug reactions in Hansen's disease

#0818/ ILCABS698

RELAPSE, REACTION & RESISTANCE: THE DREADED R'S OF HANSEN'S DISEASE

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Introduction: Treating physicians face challenges in management of leprosy relapse, reactional states & resistance. Throwing light on these hurdles helps us overcome them & treat the patient efficiently.

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Objectives: To identify and manage recalcitrant reactional states.

-To manage leprosy with underlying comorbidities

-Identification of resistance & use of varied therapeutic options in management.

Patients: 28-year-old male- with erythematous plaques over body. History of leprosy at 14 years of age- received complete course of treatment. Examination: left inguinal lymph node 3x4cm, tender. Bilateral ulnar, radial, common peroneal, nerves thickened. Slit skin smear: BI 4+ MI 60%. Diagnosis: relapse of lepromatous leprosy in type 2 reaction. Multi-drug therapy initiated. Since reaction did not respond to steroids, cyclosporine 2.5mg/kg and thalidomide 300mg/day given.

26-year-old male, K/C/O alcoholic hepatitis, with hypopigmented patches over face- 6 months; dusky red nodules over body- 1 week. Examination: infiltration of pinna; Right infraorbital, radial & left ulnar nerve- grade 2 thickening. Slit skin smear BI: 1.4+ MI: 70%. Diagnosis: Lepromatous leprosy in type 2 reaction. Due to deranged LFT, alternate regime: Clofazamine 100mg, Ofloxacin 400mg, Clarithromycin 500mg given.

34-year-old male- impaired sensation over feet & left hand. Examination: claw hand, guttering; ichthyotic patches- trunk and right foot. Slit skin smear- BI 5+ MI 70%. Diagnosis: Lepromatous leprosy in type 2 reaction with grade 2 deformity. MB-MDT initiated. Resistance to therapy -increase in BI & MI noted. Patient switched to second line therapy: Clofazamine 100mg, Minocycline 100mg, Ofloxacin 400mg. Due to poor response, immunization with BCG vaccine added to above regime; patient is receiving immunochemotherapy.

Results: The above patients responded to treatment & are currently under follow up.

Limitations: None

Conclusion: Managing different scenarios complicating the course of Hansen's disease requires careful history taking, investigations & a tailored regime catered to each case.

Keywords: Reaction, Resistance, Immunochemotherapy

#0819/ ILCABS738

REPURPOSING TENOFOVIR, EMTRICITABINE AND LAMIVUDINE FOR POSSIBLE ANTILEPROTIC ACTIVITIES.

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Introduction: Antimicrobial resistance testing against *M. leprae* or the evaluation of the anti-leprosy activity of new drugs remains a challenge as leprosy bacilli do not grow in vitro. Besides, developing a new drug against leprosy through the conventional drug development process is not economically attractive or viable for pharma companies. It is an efficient method to identify novel medicinal and therapeutic properties of approved drug molecules. Any combinatorial chemotherapy that combines these repurposed drugs with the existing first-line [MDT] and second-line drugs could improve the bactericidal and synergistic effects against these notorious bacteria and can help in achieving the much-cherished goal of "leprosy-free world".

Descriptions Aim: Repurposing of existing drugs/approved medications or their derivatives for assessing their anti-leprosy potential.Research question: What are the possible available anti viral medications that

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could be used as a target for various proteins of lepra bacilli by in silico molecular studies?Primary objective: Exploring certain anti-viral drugs Tenofovir, Emtricitabine and Lamivudine drug against the mycobacterium lepraeMethodology: The Crystal Structure of a phosphoglycerate mutase gpm1 from Mycobacterium leprae (PDB ID: 4EO9) Will be loaded to the graphical window of the BIOVIA DS2017. The energy of the protein will be minimized using the smart minimizer algorithm to bring the stable local minima conformation. Further, binding pocked to dock the molecules will be defined based on the PDB site record. The energy of the PubChem downloaded micro molecules Emtricitabine, Lamivudine, and Tenofovir will be minimized using the above-said algorithm and will be submitted to the CDOCKER protocol.

Conclusion: The finding of the docking studies will definitely guide us the next possible utilization of these drugs in alternate treatment for resistance or delayed clearance cases. Since the planned compound were already in markets for manydecades we know the toxicity profiles and its efficacy in their approved indication.

Keywords: Molecular docking, Repurposed, Viral drugs, Resistance

#0820/ ILCABS837

PLATLET RICH FIBRIN IN NON-HEALING TROPHIC ULCER

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Introduction: Chronic non-healing ulcers are one of the significant cause of disability and morbidity in borderline lepromatous leprosy patient. It is an important public health problem can cause economic and social burdens, may influence the patient's quality of life. Injectable Platelet-Rich Fibrin (I-PRF) is a second generation fully autologous blood - derived biomaterial having three-dimensional fibrin meshwork like that of a PRF clot, while retaining the fluid nature, just like platelet-rich plasma (PRP). Preparation of injectable PRF is simple and requires minimal instrumentation and materials, making it a cost-effective product. I-PRF has ability to release higher concentrations of various growth factors and induced higher fibroblast migration and expression of PDGF, TGF-beta and collagen 1.

We report a non-healing ulcer in a leprosy patient treated with IPRF.

Case report: A 67 year old male presented with non- healing ulcer since eight months. He was borderline lepromatous leprosy patient with already finished MB MDT medication since one year. There was no history of diabetes and hypertension. He was treated with multiple oral and topical antibiotics for ulcer without any improvement. The general status was in normal condition. Cutaneous examination showed single well-defined ulcer measuring 2x4 cm in diameter over the left medial malleolus. The routine investigation like blood-glucose, liver function test, renal function test showed no abnormality. Gram's staining of smear taken from base of ulcer showed no bacteria. We diagnosed as chronic non healing trophic ulcer and treated with IPRP every week. Clinical result showed that the ulcer greater then eighty percentage heal in four week of IPRP treatment and no side effect appeared during treatment.

Conclusion: The IPRP could be promising in the management of chronic non-healing ulcer in borderline lepromatous leprosy patient. It is simple, safe and cost effective in office procedure and can improve quality of life.

Keywords: Platelet rich fibrin, Non healing ulcer

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#0821/ ILCABS853

DOWNSIDE OF DOUBLE EDGE SWORD END LIFE THREATENING ADVERSE OF SYSTEMIC CORTICOSTEROID IN ERYTHEMA NODOSUM LEPROSUM

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Introduction: Leprosy is a chronic granulomatous disease caused by Mycobacterium leprae. While leprosy reactions are acute inflammatory episodes due to an adverse immune response to bacterial antigens which can occur in patients before treatment, during treatment and even after treatment. This reaction can last from 3 months to 6 years perhaps long term corticosteroids are required to suppress it thus associate with frequent adverse effects as well as likeliness of self medication

Objective: To observe serious adverse effects in patients of ENL(erythema nodosum leprosum) on long term systemic corticosteroids.

Material and Method: A retrospective analyses of data on lepromatous leprosy patients with recurrent erythema nodusum leprosum who were on long term corticosteroids treatment were done. 3 patients had a serious adverse effects who were on irregular follow up. All 3 patients presented to dermatology opd with chief complain of high grade fever, abdominal pain, nausea , fatigue with red tender painful lesion all over body. On general examination, pateints were hypotensive with tachycardic and tachypneic. All routine investigation ,Chest Xray ,USG Abdomen & pelvis, Mountox test were done. Based on clinical symptoms and history and investigation Patients diagnosed with adrenal crisis due long term on and off corticosteroids treatment and 1 patient also had an activation of pulmonary tuberculosis.

Conclusion: Concluding our observations, one should be vigilant while giving corticosteroid to ENL patient as they need long term treatment. A lapse from physician and/or patient side may prove fatal to the patients. There's need for alternative drug which can be effective, with less adverse effect and can be given safely to patients of all age group.

Keywords: Adrenal Crisis, Pulmonary Tuberculosis, Lepromatous Leprosy,Erythema Nodusum Leprosum, Corticosteroids

#0822/ ILCABS875

A NOVEL TREATMENT MODALITY FOR NON HEALING ULCERS – A CASE SERIES OF TROPHIC ULCERS TREATED WITH PRF

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Introduction: Autologous platelet rich fibrin matrix (PRFM) is a novel biological material that accelerates wound healing. PRFM is a fibrin matrix that contains entrapped concentrated platelets, which slowly release various growth factors over time.

The growth factors released are platelet-derived growth-factor (PDGF), vascular endothelial growth-factor (VEGF), epidermal growth-factor (EGF), fibroblast growth-factor (FGF), transforming growth-factor

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(TGF), and insulin growth-factor (IGF)1. These help in regeneration of tissues and faster wound healing compared to conventional dressings.

Objectives: to assess the efficacy of PRFM dressings in the manangement of trophic ulcers.

Patients / material and methods: 2 patients with lepromatous leprosy presenting with chronic non-healing leg ulcers were treated, in the dermatology outpatient department of a tertiary care hospital.

Procedure: Local examination of the ulcer in terms of site, size, edges, margin, floor, base and surrounding skin were noted. 10ml of venous blood was drawn and centrifuged (without adding anticoagulant), at 3000 rpm for ten minutes. Three seperate layers obtained were : upper straw-coloured platelet poor plasma (PPP), middle layer of PRFM and the lowest layer containing RBCs. The upper layer was discarded. PRFM was taken out of the tube using sterile forceps, and transferred onto a sterile gauze; cut into smaller pieces and placed evenly over the ulcer bed after cleaning it, and the wound was closed using sterile pads. Systemic antibiotics and analgesics were prescribed. The procedure was repeated every week for 6 weeks.

Results: closure of the wound bed was seen in both the patients within 6 weeks.

Limitations: the dressing is changed only after a week, and if soaked, leads to malodor and secondary infection.

Conclusion: PRFM is an efficacious and cost-effective modality in the treatment of trophic ulcers.

Keywords: PRFM, Trophic ulcers, Growth factors

#0823/ ILCABS936

FULMINANT HEPATIC FAILURE IN A 15 YEAR OLD BOY WITH BORDERLINE LEPROMATOUS LEPROSY AND TYPE 2 REACTION

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Introduction: We report fatal, fulminant hepatic failure in an Indian adolescent boy who had borderline lepromatous (BL) leprosy with severe erythema nodosum leprosum (ENL). Our case exhibits necrotic ENL which is rarely encountered in children, and severe unremitting hepatic involvement which culminated in hepatic failure and death.

Case Report: A 15 year boy having BL leprosy with recurrent ENL on multibacillary multi-drug therapy (MB-MDT) and oral prednisolone (10-30 mg/day) for 6 months, presented with papulo-pustular lesions, along with abdominal pain, vomiting and loss of appetite since 15 days. Motor or systemic involvement was absent. Alcoholism or previous liver disease was not present. He was mildly febrile (38.80C), icteric and lacked lymphadenopathy. Multiple papulo-pustular lesions with ulceration and necrosis were observed on both extremities and back (Figure 1). The right posterior tibial nerve, and the ulnar, radial cutaneous and common peroneal nerves on both sides were enlarged. Slit skin smear showed a bacteriological index of 5+ with solid and fragmented bacilli. Histopathological examination of papulo-pustular lesions confirmed ENL.

Hence, BL with Type 2 lepra reaction with infective hepatitis, ENL induced hepatitis or MDT induced hepatic damage were considered. MDT was withheld while oral prednisolone was increased to 40 mg/day.

He continued to develop fresh ENL lesions, along with high grade fever and worsening of abdominal pain and vomiting. Laboratory reports showed anaemia, hypoproteinaemia, hyperbilirubinaemia of 5.7 mg/dl,

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raised AST 677 IU/l, ALT 931 IU/l, ALP 122 IU/l, Total Leucocyte Count 19.7x103 cells/mm3, normal platelet count, deranged coagulation profile (PT- control 12.08s, test 26.6s; INR 2.27; PTTK- control 29s, test 33.8s) and electrolyte imbalance (Na+/K+117/4mmol/l; normal, 136-146/3.5-5mmol/l). Renal function tests, G-6PD, HIV and viral markers were normal. Peripheral smear for malarial parasite, Widal test, blood and urine culture, and abdominal ultrasound examination were normal. The patient developed altered sensorium (Glasgow coma scale 9/15) with hepatic encephalopathy which was managed medically. As the patient was showing improvement in his liver function, he succumbed to sudden cardiac arrest.

Keywords: Severe erythema nodosum leprosum, Fulminant hepatic failure, Borderline lepromatous leprosy, Hepatitis

#0824/ ILCABS1049

MANAGEMENT OF A DEFAULTER IN LEPROSY

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Defaulters are a significant hurdle to leprosy eradication programs not just because they can act as a constant source of infection in the community but also because they are more likely to end up with disabilities and deformities; thus adding to the morbidity resulting from leprosy.The multi-drug therapy (MDT) is very efficient in curing leprosy, subject to patient compliance and treatment completion. Unfortunately, a significant proportion of patients default in treatment due to a number of personal, psychological, social, logistic, adverse drug events and health service factors. The proportion of defaulters worldwide has been seen to be as high as 10% in case of paucibacillary leprosy and even higher (upto 30%) for multibacillary leprosy.1In the year 2016-17, about 5.5% of leprosy patients defaulted in India.3 Given the vast population of the country, even a small percentage of defaulters can have a significant negative impact on leprosy scenario. Non-compliance with treatment contributes to drug resistance, treatment failure and increased incidence of disabilities and deformities. A motivated and well informed patient is more likely to comply with treatment course; thus the importance of patient counselling cannot be over-emphasized. The aim of this chapter is to provide most relevant practical points in the management of defaulters in leprosy.Obstacles faced in accessing healthcare facilities due to lingual and regional barrier among migrants results in poor counselling and decreased motivation to completer treatment.The importance of preventing drop-outs and defaulters from treatment cannot be over-emphasized. Educating the patients, their family and the public in general about disease and its treatment and supporting and encouraging patients during treatment course will result in better compliance and less defaulting. The patient should be warned about side effects associated with treatment beforehand and counselled on the importance of continuing treatment. MDT should be made available to the patients/ at doorstep

Keywords: Leprosy, Treatment, Default, Counseling, Education, Drug availabilty

#0825/ ILCABS1068

PLATELET RICH FIBRIN IN TROPHIC ULCERS OF LEPROSY: A REPORT OF 2 CASES

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Introduction: Platelet Rich Fibrin (PRF) consists of a fibrin matrix polymerized in a tetra molecular structure, with incorporation of platelets, leucocytes, cytokines, and circulating stem cells. Several case reports have

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demonstrated the utility of PRF in wound healing. Herein we present two cases of non healing ulcers over the feet- Case 1, Borderline Lepromatous leprosy with grade 2 deformity, Case 2- non healing ulcer over bilateral great toes in a case of Lepromatous leprosy.

Description of the cases: Case 1- A 27 year old female patient, a case of Borderline Lepromatous leprosy on 2nd MDT pack, with non healing ulcer over right foot (grade 2 deformity) without reaction. Examination revealed glove and stocking anesthesia, large deep ragged non tender ulcer with irregular margins and sloping edges about 11cm*5cm over the right sole. Weekly PRF with collagen dressing was done. A marked improvement was noted after 3 sittings.

Case 2: A 39 year old male patient, diagnosed case of Borderline Lepromatous leprosy with downgrading type 1 reaction with neuritis on 8th MDT pack, presented with non healing ulcer over both great toes on plantar aspect. Examination revealed glove and stocking anesthesia. Two ulcers of sizes 2cm*2cm and 0.5cm*0.5cm respectively were seen on b/l great toes. Weekly PRF was done. A marked improvement was noted after 4 sittings.

Conclusion: PRF is versatile, easy to prepare with low cost It is a minimally invasive technique which provides new options for faster healing of non healing ulcers and should be considered as a modality of choice in refractory cases. Further studies are required to standardize PRF preparation.

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DISABILITY AND REHABILITATION

#0826/ ILCABS42

TACTILE SENSORY FEEDBACK SYSTEM TO PREDICT AND PREVENT PEAK PLANTAR PRESSURES

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Introduction: Though various tests are available to assess the effects of the peripheral neuropathies, there are very minimal applications that provide a real time feedback while preventing the impairments. The robust tactile sensory feedback system provided to individual patients with plantar anaesthesia caused by peripheral nerve damage, would help predict their individual pressure threshold in the plantar aspect while walking.

Objectives: The objective of the study was to develop a sensory fesedback system to predict and prevent plantar pressures on anaesthetic feet.

Materials & Methods: Data acquisition were done through mobile phone using blue tooth module. Threshold peak pressure limits were customized and individual handsets were provided for patients. The force sensitive resistor were round, 0.5" diameter of sensing area. The force sensing resistors (FSR) used helped vary its resistance depending on how much pressure is being applied to the sensing area. When no pressure is being applied to the FSR its resistance will be larger than 1MΩ. The FSR used could sense applied force anywhere in the range of 100g-10kg

Results: The static peak plantar pressures of the foot assessed using the tactile sensors were more than the established pressure threshold limits of 171 Kilopascals for n = 26 (52%) subjects. The dynamic peak plantar pressures of the foot assessed using the tactile sensors were more than the established pressure threshold limits of 400 kilopascals for n=32 (64%) subjects

Limitations: Few patients were worried the robustness of the sensors used in the data acquisition system.

Conclusion: Device robust and can acquire data while patient carry out their functional activities. There was considerable reduction in the cost of sensory feedback systems. It would help the patient learn slow walking through the bio feedback from the tactile sensory feedback system. It could also help to incorporate the data acquired through the feedback system in developing orthosis for leprosy affected patients.

Keywords: Leprosy, Plantar Pressures, Ulcers, Sensors

#0827/ ILCABS49

UNIVERSAL CLOUD BASED PLATFORM TO MONITOR AND PREVENT IMPAIRMENT IN LEPROSY

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Introduction: Patients live far away from leprosy referral centres, follow up and management at many instances are not uniform because of poor accessibility of the leprosy centre and its staff to the patient. At our centre, 60% of patients live far away from the centre, and visit once in 3-4 months, while consulting nearby

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health facilities if a problem occurs in the interim. A continual real time feedback and follow up mechanism is not available for patients with hands, feet and eye impairments.

Objectives: The objective of the study is to institute universal cloud based storage and retrieval of impairment data through unique identity for leprosy affected patients from any geographical location. Reduce and manage impairment through secure and continual access of patient progress records, both by the leprosy affected patients and health care workers.

Materials & Methods: User friendly mobile based modules would be developed for easy access for field health workers even with minimal medical knowledge to enter the data. Monthly monitoring of the treatment records would be carried out by the field staff till the patient is in the anti-leprosy treatment.

Results: About 9 modules have been developed for storing leprosy impairment records. Unique identity has been created and used to capture and retrieve significant details on the impairment status of patients without infringing their privacy.

Limitations: Sometimes the patients are not able to store and retrieve data through the cloud based system

Conclusion: The platform will enable healthcare workers in a leprosy referral centre and the national programme to monitor and improve adherence of their patients to the disability management. The platform will also aid a patient's access to uniform care, treatment and follow up from a healthcare facility anywhere within the country through shared access to their treatment data.

Keywords: Leprosy, Disability, Impairments, Cloud-based system

#0828/ ILCABS70

IMPACT ON THE ACTIVITIES OF DAILY LIVING AND HAND FUNCTIONS IN PATIENTS WITH LONG TERM ULNAR/ MEDIAN NERVE PARALYSIS

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Introduction: Reconstructive surgeries are intended to correct the deformities of hand in leprosy but some patients do not accept to experience the surgical procedure. There could be various reasons for the denial of the patients such as fear, anxiety and uncertainty of the return of the hand function. Another important reason is that their deformed hands have adapted over a period of time to perform their day to day activities and so they refuse to take up new modification occurring after surgery.

Objectives: This study intends to assess the ability of the hand with ulnar and/or median nerve paralysis to perform activities of daily living and other basic hand function.

Methods: A cross sectional study was conducted to identify the adaptations developed by the patients with ulnar and median paralysis and who have refused corrective surgery. Random sampling was done to recruit leprosy affected patients those coming to institute and refuse surgery. Patient's perspective of carrying out their key ADL functions using the Karigiri Activities of Daily Living Rating Scale (KADLRS) and Screening of Activity Limitation and Safety Awareness (SALSA) scores were evaluated.

Results: The preliminary analysis shows that the altered functions help patients adapt with ulnar/ median paralysis in carrying out their key ADL functions. The prehensile functions haven't been significantly established in carrying out the functional activities in these patients with long duration ulnar and median paralysis. The process and the techniques adapted by these patients over the years (average <3 years) has no significance in their SALSA and ADL scores.

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Limitations: The patients with long standing impairments adapt to their impairments and are worried about losing the gained functions with corrective surgeries.

Conclusion: The study results suggest that early interventions and motivation of the patients for surgery are very essential.

Keywords: Impairment, Ulnar/Median paralysis, Activities of Daily Living (ADL)

#0829/ ILCABS75

EFFICACY OF AUTOLOGOUS INTRALESIONAL PRP IN THE MANAGEMENT OF CHRONIC NEUROPATHIC ULCERS OF LEPROSY PATIENTS

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Introduction: Neuropathic ulcers in leprosy represent a challenge for dermatologists. Conventional treatments cannot provide satisfactory healing since these treatments lack necessary growth factors.

Objective: The aim of this case series was to determine the role and effectiveness of PRP in healing of chronic neuropathic ulcers of leprosy; and to study the rapidity of healing with respect to ulcer site, size, duration, systemic steroids and MDT.

Material and methods: In our study 17 patients with a total of 25 ulcers were given intralesional injections of PRP into the margins and bed of ulcer. Same procedure was repeated every 15 days until complete re-epithelisation or up to six sittings whichever occurred earlier. Patients were evaluated every fifteen days till 12 weeks.

Results: In our study, 9 ulcers (36 %) showed complete healing. Out of these one ulcer showed healing in 2 weeks, one healed in 3 weeks, five ulcers healed in 4 weeks, one healed in 6 wks and one in 12 wks. At the end of 12 weeks, in 16 patients (64 %), there was marked reduction (80-100%) in wound size with partial re-epithelisation. Average number of sessions which led to healing with partial reepithelisation was 2.7 sessions (5.4 weeks). In our study 3 patients completed MDT MB while the rest 14 were still on therapy. Our study showed that patients on treatment had a significantly higher healing rate. The mean healing duration increased in patients on steroids. The site of ulcer showed no relation to healing of ulcer.

Limitations: The limitations of this study include small number of patients and the short follow-up period

Conclusion: PRP is a cheap, painless; office based valuable procedure which leads to faster healing of chronic neuropathic ulcers. Further controlled, randomized prospective clinical trials on larger patient population are necessary to validate the results.

Keywords: Leprosy, Neuropathic ulcer, PRP, RE-EPITHILISATION

#0830/ ILCABS87

TRADITIONAL OFFLOADING DEVICES – ACCEPTANCE AMONG THE LEPROSY AFFECTED

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Introduction: Provision of appropriate offloading modalities like below knee total contact cast(TCC), moulded double rocker shoes (MDRS) for the patients to protect the ulcers has always been a vital component

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in any leprosy control programs. These offloading devices have helped in healing the ulcers by providing sufficient rest to ulcerated area. The disadvantages also with the existing devices are that they are heavy and cumbersome to wear

Objectives: To find out reason for the acceptance and non-acceptance of below knee off-loading devices in leprosy affected patients. And also to assess the comfort, functional and social-economic limitations faced by leprosy patients in using offloading devices

Materials &Methods: A follow up study was carried out on leprosy affected individuals who were prescribed to use either the TCC or the MDRS as offloading device at a tertiary leprosy referral centre in South India. Data collection were done on patients using both quantitative and qualitative tools on participants who refuse and use offloading devices prescribed.

Results: The results show that the ulcers have healed in (89.20%) of patients. The results establish that the offloading devicesmake the functional activities difficult for the patient. However, the pre and post Screening of Activity Limitation & Safety Awareness (SALSA), participation (P-Scale) and SARI stigma scale show no significant changes in the p-value.

Limitations: Few of the patients were finding it difficult to give us their feedback, as the devices were provided by the clinicians

Conclusion: The study results suggest that traditional offloading devices were effective in providing offloading and healing ulcers. Most of the patients use the devices, as offloading device is part of the ulcer treatment.

Keywords: Offloading devices, Plantar ulcers, Leprosy

#0831/ ILCABS91

NURSING INTERVENTION IN THE PREVENTION AND EARLY IDENTIFICATION OF PLANTAR ULCERS IN LEPROSY AFFECTED PATIENTS: A CASE REPORT

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Background: The leprosy is a chronic infectious disease. Plantar ulcers are one of the common reasons for ulcer admissions in any referral hospital. The formation of ulcer should be prevented to avoid serious secondary infections, sepsis, carcinomas, and amputations. Evidence shows that self-care practices by patients are vital in the prevention and management of plantar ulcers.

Case Presentation: We report case series of 5 leprosy affected patients who presented with plantar ulcers. 5 of them were with grade 2 ulcers by the time they sought medical help. Ulcer improved after debridement and daily dressings.

Methods: and Materials: Descriptive design was used and all 5 patients were randomly selected in the surgical ward, SIH- R & LC, Karigiri hospital. A self-structured teaching tool was used by nurses to improve the knowledge on prevention of ulcers and early recognition of signs of ulcer. The patients were assessed at the end of the teaching sessions.

Limitations: The bias that would have occurred in selecting limited patients, the improvement in the knowledge was not evaluated after education.

Results: All 5 patients reported that they gained in-depth knowledge in prevention, identification, and reporting on the signs of ulcers as early as possible to prevent further secondary complications.

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Conclusion: This study highlights the importance of early identification of ulcers in patients with leprosy. Also, the study highlights the significance of the nurse's role in improving patients' knowledge of the identification of early signs and causes of plantar ulcers. Thus can prevent further worsening of impairments.

Keywords: Leprosy, Plantar Ulcers, Knowledge, Prevention of Disability, Nursing Care

#0832/ ILCABS113

PREFERRED PRACTICES- A SUSTAINABLE LIVELIHOOD OF PEOPLE AFFECTED BY LEPROSY AND OTHER DISABILITIES THROUGH COLLECTIVES

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Background: Udaan- Community Based Inclusive Development Project at Kothara Leprosy Hospital of The Leprosy Mission Trust India, aims to promote Sustainable Livelihoods through Financial Linkages with State Rural Livelihood Mission (SRLM) in Amravati district Maharashtra. The Organisations of People with Disabilities (OPDs) and Inclusive Self Help Groups (ISHG) are formed by Udaan Project and linked with SRLM to access Livelihoods Loans. Total 650 People affected by leprosy and other disabilities are started their livelihoods.

Objective: To understand the major role of SRLM to promote sustainable livelihoods for person with leprosy and other disabilities

Methods: Referred data from Udaan Project Office and structured Interviews of members of Organisations of People affected by Leprosy and other disabilities as well as Govt. Officers of State Rural Livelihood Mission.

Results: A total 117 Organisations of People with Disabilities (601 Members- 389 Male and 212 Female) and 32 Inclusive Self Help Groups (350 Women including 35 Women with Disabilities) were formed by the Project and linked with SRLM. These Groups were trained by Govt as well as Project about Recording Keeping and scope for Livelihoods. These groups have availed around Rs. 1.5 Crore financial support and started their livelihoods.

Conclusions: This study will help to understand the importance of Community Based Organisation as a Preferred Practice to start Livelihoods and promote Inclusion and Participation of People Affected by Leprosy and other disabilities through Socio Economic Rehabilitation.

Keywords: Leprosy, Disability, Livelihoods, Loans, OPD, ISHG

#0833/ ILCABS114

PREFERRED PRACTICES- VERTICAL LIVELIHOOD MODEL FOR PEOPLE AFFECTED BY LEPROSY AND OTHER DISABILITIES

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Background: Udaan- Community Based Inclusive Development Project at Kothara Leprosy Hospital of The Leprosy Mission Trust India, aims to promote Sustainable Livelihoods through various models like

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Collective Livelihoods, Organic Farming and Vertical Livelihood Demonstration Centres etc. in Amravati district Maharashtra. The vertical Livelihood Model can be developed in a smaller space with good income generation through various livelihoods activities in vertical structure.

Objective: To promote income generation activities in smaller space with high income by cross disabilities.

Methods: A ready Vertical Livelihood Demonstration Centre was constructed at The Leprosy Mission Trust India's unit in Amravati Maharashtra. The actual success of this model will be used as a Study of this paper.

Results: A Vertical Livelihood Structure was developed with accessible features in a 20 x 20 Foot area. There are 3 layers which is doing 5 different livelihoods (Goatery, Poultry, Fishery, Organic Compost and Vegetable Garden) which earns minimum Rs. 10,000/- income per month by People with disabilities.

Conclusions: This study will help to understand How a low cost and minimum space occupying Vertical Livelihood Centre can be promoted for People with disabilities to win their bread with dignity.

Keywords: Leprosy, Disability, Vertical Livelihoods

#0834/ ILCABS117

A JOINT COLLABORATION OF NGO AND CORPORATE TOWARDS THE SUSTENANCE GOAL OF LEPROSY ELIMINATION

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Background: LEPRA, an NGO works with the aim of enabling children, women, and adults impacted by leprosy and other NTDs to alter their lives and overcome poverty and prejudice. TATA Steel, a corporate works in three domains of empowerment, income generation, health and hygiene. With the overall goal of improving the quality of life of people with disabilities caused by leprosy and lymphatic filariasis, TATA and LEPRA launched the SPARSH project in the Jharkhand district of Dhanbad in 2009.

Objective: To provide uniform diagnosis, treatment, and morbidity management of leprosy patients referred by primary health centres and private practitioners through collaboration between NGOs and corporations.

Methodology: The services include treatment of complications such as reactions, neuritis, and ulcers; provision of MCR footwear, assistive devices, physiotherapy and pre and post RCS management.

Result: Sparsh Centre delivered OPD services to 7907 patients over a five-year period. Of the new cases detected, 421 (5.3%) were leprosy and 58 (1.99%) were LF cases. 90 patients with leprosy received treatment for reactions, while 276 LF cases were treated for acute attacks and entry points. A total of 225 ulcer cases were treated, with 172 of them healing. Leprosy patients received 2547 pairs of MCR, while LF patients received 145. In addition, 102 RCS were done to restore the normal function.

Conclusion: Through partnerships between NGOs and Corporates; the specialized services for NTDs which are available at secondary health levels can be made available to communities who have low access to health services.

Keywords: Key words- RC- Referral Centre, RCS- Reconstructive Surgery, LF- Lymphatic Filariasis, IEC- Information Education and Communication, GHS- General Health Staff, MCR- Micro Cellular Rubber

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#0835/ ILCABS118

ASSESSMENT OF PHYSICAL, SOCIAL & ECONOMIC STATUS OF PERSONS WITH DISABILITY BY UPDATING THE DISABILITY LIST IN 28 DISTRICTS OF BIHAR, INDIA

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Introduction: Disabilities and deformities cause stigma and discrimination in society. Preventing the worsening of disabilities through medical rehabilitation can be achieved with home-based self-care and reconstructive surgery. One of the challenges is the availability of list of persons with disabilities, this data is not updated at the district and HF levels. It is important to identify them, assess their disability status, and provide them services such as training in self-care, self-care materials, MCR, RCS, social support, etc.

Objective: To update the list of persons with disabilities in 28 districts of Bihar and to provide medical and social services.

Materials and Methods: used Community social workers (CSWs) were selected and provided institutional training in DPMR. CSWs then visited all the villages in assigned areas, interacted with ASHA, AWW, PRI members & local RMPs, updated disability lists of persons affected, and assessed them for medical and social rehabilitation.

Results: About 18221 persons affected by leprosy were assessed in 401/403 blocks in 28 districts, they were trained along with one family member/ASHA in home-based self-care. 1542/18221 persons were identified as eligible for RCS of which 47% (719/1542) underwent RCS in the following years. 3202/18221 persons were facilitated for a disability certificate, 8317/18221 persons were provided MCR footwear, and 724/18221 persons were eligible for social support of which 365 were provided with support.

Limitations: Availability of Grade II disability patients during the home visit.

Hard to reach areas.

Conclusion: CSWs were able to update and conduct disability assessments of all the G2D patients in 28 districts of Bihar. This enabled to prevent the worsening of disability and provide services like home-based self-care, disability certificate, RCS, and Livelihood support. The collected lists of patients were shared with the NLEP, which enabled the government to continue the assessment.

Keywords: Disability, Community Social Worker, NLEP. DPMR, RCS,

#0836/ ILCABS119

PREVENTION OF DISABILITY BY CAPACITY BUILDING OF GENERAL HEALTH STAFFS IN 8 DISTRICTS OF BIHAR FROM 2017 TO 2021

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Introduction: Lepra reaction/neuritis in leprosy patients causes permanent disability and further leads to deformities. It is necessary to identify reactions on time and manage them effectively. By improving skills of general health staff, it was possible to identify and manage Lepra reaction/neuritis early to prevent disability.

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Objective: 1. Prevention of Nerve Function Impairment among persons affected with leprosy in 8 Districts of Bihar through capacity building of general health staff.

Methods and materials: Identified one MO and a paramedical worker at every HF in 8 districts and trained them for 3 days. Suspect registers & patient information cards were provided and follow up visits were done by supervisors to each health facility to assess the impact of training.

Results: Data was assessed from 2017 to 2021 in 147/147 HFs in 8 districts to assess the quality of diagnosis of leprosy and reaction management. It was observed that 64% of HFs in 2017, 85% in 2018, 80% in 2019, 82% in 2020 and 86% were able to diagnose leprosy cases correctly. Assessment for reaction management among new leprosy cases gradually improved from 2.7% in 2017; 5.6% in 2018; 6.7% in 2019; 7.8% in 2020 to 12% in 2021.

Limitations: 1) Retention of Nodal Medical Officers and Nodal Persons at the Health facilities.

2) Supervisors were able to visit HFs only once or twice during the period of intervention.

Conclusion: Reaction management is necessary to prevent occurrence of disabilities. The increase in identification and management of reaction cases with regular training of Nodal Mos and Nodal persons at 147 HFs in 8 Districts of Bihar from 2017-2021 has directly resulted in reduction of new disabilities among new cases of leprosy. , Bihar

Keywords: Reaction Management, Nerve function Impairment, Nodal Person, Nodal Medical Officer

#0837/ ILCABS120

SUSTAINABLE MMDP SERVICES THROUGH SELF SUPPORT GROUPS (SSGS) AT THE COMMUNITY LEVEL – AN INNOVATION

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Background: Leprosy and lymphatic filariasis (LF) are the most common potentially disabling and high morbidity NTDs in India, causes immense distress to those who are affected. People with leprosy and LF disability have to manage lifelong care for their disabilities, often in severely resource constrained settings. They experience deep seated stigma, prejudice, discrimination, and ostracism which often extends to their family members.

Objective: Through Self Support Groups, a community-based homogenous group of people affected by leprosy and LF; People affected by leprosy and LF in villages will be supported to manage their disease condition and access their social entitlements.

Methodology: 130 SSGs were formed in seven blocks of Bihar's Samastipur district. Each SSG was made up of 15 affected individuals and one member leader. All group members trained on basic of leprosy and LF five pillars of home based self-care techniques (Skin care, Wound care, Exercises, Protective footwear, Health counselling and mental health. The group members are also trained on recognition of complications and referrals, social schemes and peer support to link for access the services.

Results: A total of 4,083 persons with LF and 466 leprosy (2507 women, 2027 men, 15 children) were trained on home based self-care practices. Amongst 2679 (65.6%) treated for acute attacks, 1928 (72%)

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subsequently reported a reduction in the frequency of such attacks. In parallel 265 (56.9%) people with leprosy treated for ulcer and 177 (66.7%) reported healing in a follow up visit. A total of 592 (14.5%) persons underwent hydrocele surgery. Alongside this achievement 2954 (64.9%) people were linked to government social entitlements/ schemes.

Conclusion: SSG members are providing sustenance as well as in- service delivery. This helped develop ownership in the community and hassle free accessing services from the public health facility and pension schemes.

Keywords: Key words- SSG- Self Support Group, LF- Lymphatic Filariasis, MMDP- Morbidity Management and Disability Prevention, NTDs- Neglected Tropical Diseases

#0838/ ILCABS122

ESTABLISHING MORBIDITY MANAGEMENT AND DISABILITY PREVENTION (MMDP) CENTRES IN PUBLIC HEALTH CARE FACILITIES TO SUPPORT THE DELIVERY OF QUALITY DISABILITY CARE SERVICES TO NTDS (LEPROSY AND LYMPHATIC FILARIASIS) IN SAMASTIPUR DISTRICT OF BIHAR, INDIA

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Background: India contributes 60% of leprosy and 40% of Lymphatic Filariasis are NTDs and both produce irreversible disability and the people affected require lifelong care to prevent consequences. Leprosy and LF have several commonalities. An important aspect while dealing with consequences is to prevent worsening disability caused by both diseases. If diagnosed late or left untreated, it can cause severe disabilities. Both manifest immobility and impairment require skin care, wound-care, regular exercises, dressing and physiotherapy.

LEPRA implemented combined approaches, piloted seven MMDP Centre's, established at PHCs in Samastipur district with Support of DHS.

Objective: To provide training on simple foot hygiene to persons affected and motivate them for self-practice by establishing MMDP setup at PHCs.

Methodology: In 2018-20, a total of 434 (243-men, women-191) people affected by leprosy and 1166 people with LF (595-men, 560-women, 11-children) from 139 villages were selected from seven blocks in Samastipur. The key components were exploring self-care with five pillars comprising skin care, wound care, exercises, protective footwear and health counselling.

Results: After three years of training, 434 people (243-men, women-191), 109 leprosy affected reached Lepra reactions (77), neuritis (32) and were provided with steroid therapy, Aids and appliances to prevent further progression of disability. 325 people were treated for ulcers 289 (89%) were reported healing. Similarly, 1166 LF people 979 (84%) were regularly following self-care practices. Also, the entry point healed up-to 1063 (91.2%), acute attack reduced 982 (84.2%), swelling reduction took place 652 (56%) on average (All the site). 1086 (94%) people regularly wore protective footwear and there was absence of cracks, calluses on the feet.

Conclusion: The findings show that competent disability management at the local level, would help in better adherence to self-care practices. Therefore, proper training on the MMDP services can help in changing the lives of people with NTDs.

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Keywords: PHC - Primary Health Centre, MMDP- Morbidity Management and Disability Prevention, NTDs- Neglected Tropical Diseases, LF- Lymphatic Filariasis, Entry lesions between the toes may cause itching. The entry lesions allow bacteria to enter the body through the skin and this can cause acute attacks.

#0839/ ILCABS127

AUTOLOGOUS PLATELET RICH FIBRIN MATRIX IN CHRONIC NON-HEALING ULCERS

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Introduction: Chronic nonhealing leg ulcer is defined as the "loss of skin and subcutaneous tissue on the leg or foot, which takes more than 6 weeks to heal. Chronic non-healing leg ulcers are a major health problem worldwide and have great impact on personal, professional and social levels, with high cost in terms of human and material resources. The present study was conducted with an aim to demonstrate the efficacy of autologous platelet rich plasma (PRP) in chronic non-healing ulcers

Materials and Methods: Eight treated patients with Hansen`s disease with ten ulcers were included in the study. The healthy ulcers were treated with PRFM at weekly intervals, after routine investigation and taking informed consent. The procedure was repeated once a week for a maximum of six sittings as per requirement.

Results: The mean percentage improvement in the area was 85.25% and the volume was 97.74% at the end of third sitting. Most of the ulcers were closed by sixth sitting.

Limitations: This study was limited by small sample size.

Conclusion: PRFM for the treatment of chronic non-healing ulcers is a feasible, safe, simple and inexpensive method leaving minimal residual side effects.

Keywords: Hansen, Chronic non-healing ulcers, PRFM,

#0840/ ILCABS130

EARLY DETECTION OF NERVE INVOLVEMENT: ROLE OF TESTING EXTENSOR HALLUCIS LONGUS IN THE FOOT

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Introduction: Prevention of deformities and disabilities in the Leprosy is important because of its potential to cause permanent and progressive physical deformities, with social and economic impact. Hence assessment and evaluation of motor function is very important (when N.F.I. is detected early, it is often reversible).

VMT are the common clinical tools to assess, evaluate nerve function which is rapid, reliable and reproducible assessment and requires no equipment.

For screening purposes, the accepted practice to detect early NFI is to carry out VMT of Tibialis Anterior (TA) in the foot. I.e. dorsiflexion of the foot is tested. Only when weakness or paralysis of dorsiflexion is evident, further detailed testing of other muscles in the foot are under taken.

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It was suggested by some authors in different reviews that extension of the big toe may be more accurate test of peroneal nerve function.

Objectives: Reasons led us to take up a retrospective study, the reliability of only testing Tibialis Anterior in involvement of common peroneal nerve or to assess the value of additional test of Extensor hallucis Longus (EHL) to detect early nerve damage.

Methods: A 5-year retrospective analysis of records of registered cases with leprosy between January 2017 to December 2021, who are diagnosed with leprosy and treated at 100 bedded specialized leprosy hospital, Hyderabad, Telangana, recorded using WHO and also MRC disability grading with special reference to the following muscles –Tibialis Anterior and EHL for lateral popliteal nerve and further follow up was done.

Results: A total of 3668 common peroneal nerves were assessed. In the presence of a normal VMT of Tibialis Anterior, 7.1% showed evidence of involvement when assessed for VMT of EHL.

Conclusion: The current study determines the importance of Inclusion of routine VMT testing of EHL in all leprosy patients.

Keywords: VMT, TA, EHL.

#0841/ ILCABS147

STUDY OF SATISFACTION LEVEL OF PERSONS AFFECTED BY LEPROSY AND LYMPHATIC FILARIASIS WITH PROTECTIVE FOOTWEAR IN JHARKHAND, INDIA

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Introduction: People with leprosy, lymphatic filariasis (LF), or any other abnormal foot function are 20 times more likely to have foot problems than the general public. India has a large number of foot problem cases due to abnormal foot function (Diabetic, Lymphatic problem, Leprosy and other circulatory disease). Protective footwear should be worn by all patients with sole sensory loss, whether or not they have sole wounds, throughout their lifetime. MCR Cushioned insoles will minimize the risk of wounds at pressure sites and podiatry appliances correct the abnormal foot function.

Methodolgy: A simple questionnaire was prepared for an interview in local languages. 215 people are interviewed by the team. This study includes those 215 people 99 (46.6%) female and 116 (53.4%) are male who have received footwear 3 to 6 months from the date of study. All are Grade II foot disability and elephantiasis.

Results: A total of 82% people are happy with design, colour, pattern, finishing, and quality of footwear. 20% patients want different colours which cover the whole foot (shouldn't show the claw toes). 2% of people have skin texture due to footwear. 86% people wear footwear most of the time every day, 9% people wear it every day for some time, 2% people wear it a few days every week and 3% people wear it rarely or never. 76% female have requested for other colours (43% Brown, 39%- Red, 18% mixed colour). 66 % of people requested shoes which can be washable (Not leather).

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Conclusion: This study shows a high level of satisfaction with MCR footwear, there is still a need to modify the footwear as per affected persons requirement and satisfaction. If we do not fulfil satisfaction of the person then this will lead to noncompliance with wearing the MCR Footwear.

Keywords: MCR- Micro Cellular Rubber, LF- Lymphatic Filariasis

#0842/ ILCABS149

MOBILE FOOT CARE UNIT- AN INNOVATIVE APPROACH OF LEPRA IN BIHAR, INDIA

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Background: One of the most serious complications of leprosy is the formation of ulcers compounded by a lack of sensation in the feet. Left untreated and without appropriate footwear these ulcers can lead to long term damage sometimes requiring amputation. Bihar have 63 leprosy colonies and 1500 disabled due to leprosy with more seriously damaged feet. They need customized footwear by a well-trained shoe technician after careful examination of a physiotherapist. They are not getting customized footwear from the Government or any other NGOs.

Objectives: To improve the quality of life for people disabled due to leprosy through provision of quality personalised footwear, improving mobility and reducing risk of amputation.

Methodology: LEPRA has launched the Mobile foot Care unit to reach out to 1500 disabled people due to leprosy in 63 colonies. This unit has all necessary equipment with Shoes technician, Driver and Outreach worker. Also, it is fitted with LCD, VCD to perform the awareness programme. It covers 63 leprosy colonies in six months and again rotates the 2nd round in six months. This unit is monitored by Samutthan (State forum of disabled persons of leprosy), State leprosy officer and LEPRA. Monthly report is shared to all the stakeholders.

Results: This mobile unit has delivered the 2565, 2867, 2954, and 2657 respectively of protective footwear in a four-year. This unit has also trained 820 people (Male 585, Female 235) in self-care techniques. They have also carried out IEC activities and 17000 people have aware about leprosy Sign/Symptoms and 54 are confirmed as a new case.?

Conclusion: This is the first Mobile Foot Care unit in the Leprosy programme in India. Affected people are receiving the customized protective footwear at their doorsteps. The Mobile Footwear Van has received many appreciations by person affected with leprosy and local NGOs/CBOs.

Keywords: IEC – Information Education Communication, LCD - Liquid Crystal Display, VCD - Video Compact Disc

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#0843/ ILCABS159

LATE REPORTING OF CHILDREN AND ADOLESCENTS (0-18 YEARS) WITH GRADE 2 DISABILITY FOR RECONSTRUCTIVE SURGERY – AN ASSESSMENT OF THE RESPONSIBLE FACTORS

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Introduction: Grade II disabilities and varying grades of motor function impairment are still being encountered in the post elimination phase of leprosy in India. Grade 2 disability in children and adolescents denote a delay in diagnosis may be due to delay at health care level and referred by family members or community.

Objectives: This present study is to identify the factors which influence the persons affected by Leprosy (adults & children) with Grade II disabilities reported late for corrective surgeries i.e. various factors, such as medical, social, economic and psychological issues.

Methods: The study is a retrospective analysis, conducted among 44 persons affected by leprosy with irreversible palsy who underwent reconstructive surgery during 2017 to 2021 at 100 bedded referral hospital at Hyderabad, Telangana, India, and analysed for reasons for late reporting for reconstructive surgery.

Results: 56.6% of children and adolescents developed deformities during MDT, 27.1% developed after treatment while only 16.3% had disabilities prior to treatment. 46% family members never heard about corrective surgeries with highest score for reasons for delay to report for surgeries followed by stigma 15.7%, false believe 10.1%, belief in indigenous and the rest of the reasons contributed 13.9%. 33% were referred by previously operated PAL, followed by 27% health care staff. 29% reported for RCS within one year from referral.

Conclusion: Our findings indicate lacunae in the awareness about the disease, preventing leprosy related disabilities and about reconstructive surgery in children and adolescents. To reduce grade-2 disability, early diagnosis should be routine procedure in the health system/National program, for which thorough neurological examination along with appropriate preventive measures is the need of the hour beside increase awareness of leprosy related reconstructive surgery among health staff and general population to promote timely referral for re-constructive surgeries.

Keywords: DISABILITY, STIGMA, CHILDREN, ADOLESCENTS

#0844/ ILCABS168

INTEGRATED PROTECTIVE FOOT CARE UNIT AT DISTRICT LEVEL - LEPRA'S EXPERIENCE

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Background: During an average lifetime, each person walks about 115,000 miles and three-quarters of people have foot problems at some point of time. People with leprosy, Elephantiasis and Diabetic are 20 times more likely to have foot problems than the general public affecting their social, personal and economic

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lives. Lack of appropriate footwear can be a big contributor to this as it can differentiate people with leprosy and LF. Self-stigmatization is a real issue to those living with these debilitating diseases.

Objectives: To increase mobility and reduce social stigma and risk of amputations among persons with leprosy and Lymphatic Filariasis disability through innovation of protective footwear.

Methodology: The foot care unit consists one trained physiotherapist (PT) and shoe technician (ST). The biomechanical assessment is done by a PT and is tailor-made according to deformity. As per requirement of affected people arthrodesis is put by the advice of PT. Usually it is delivered at the shoe unit on the same day with proper counselling of self-care home-based practices and optimal uses of protective footwear.

Results: A total of 2612 pair's customized footwear provided by four shoe units in Bihar operations to 761(58%) people with leprosy and 696(42%) to LF twice in a year. It helps in healing of the plantar ulcer, reoccurrence and increasing of mobility. The study shows that 1034(71%) of people reported healing of ulcers and can easily walk and attend social functions without any hesitation.

Conclusion: Protective footwear should be worn by all persons with abnormal foot function, whether or not they have sole wounds, throughout their lifetime. MCR/EVA cushioned insole will distribute walking pressure more widely over the sole and thus minimize the risk of wounds at pressure sites. The footwear is not cosmetic luxury items and it is a part of the treatment.

Keywords: LF- Lymphatic Filariasis, PT- Physiotherapist, ST- Shoe Technician, MCR- Micro Cellular Rubber, EVA- Ethylene Vinyl Acetate

#0845/ ILCABS186

3D PRINTED FINGER PROSTHESIS IN LEPROSY

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Introduction: 3 D printing technology has infiltered into various streams of disciplines due to its various positive outcomes. Recently they have been widely used in rehabilitation sciences and this paper explores another possibility of adapting this technology in making cosmetically appealing finger prosthesis for social inclusion and dignity in Leprosy affected person.

Objective: To make 3D printed Finger prosthesis for enhancing hand appearance and functions in Leprosy.

Methodology: 20 year old girl with Rt Hand index finger severed at Middle phalanx came for ulnar claw hand Reconstructive surgery (RCS). The RCS was done to correct her visible claw hand deformity and to enhance her appearance by using 3D Printed prosthetic finger. After the basic physical assessments and hand functions are recorded. The physical measurements of the fingers were taken using Vernier caliper. The uninvolved finger was scanned using 3D scanner and the images were processed in CAD design software. Then the designed stl file to be g coded using slicing software and the design is ready to be printed using 3D FDM printer. The finger prosthesis made with Thermoplastic Poly urethane (TPU) filaments is flexible and rigid. Then the 3D printed finger prosthesis undergoes post processing and ready for colouring.

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Results: The finger prosthesis is then fitted with the severed digits and check for comfort, fit and function and coloured to match with other finger. Finally the hand is encouraged to use for functional activities and evaluated for fit and function. She was highly motivated and satisfied with the design, appearance and function of hand after 3D prosthesis.

Conclusion: .The Finger Prosthesis made out of 3D Printer are light weight and highly durable and cosmetically appealing. The patients are motivated to use this prosthesis for appearance and reducing their stigma and enhancement of hand functions.

Keywords: 3D Printing, Finger Prosthesis, Cosmetic, Leprosy affected person

#0846/ ILCABS189

CASE REPORT: TIBIAL DRILLING PROCEDURE TO COVER 15CM OF EXPOSED TIBIA DUE TO ULCERATING ENL

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Introduction: In leprosy plantar ulcers are more commonly seen and they have well documented management strategies. We often see severe Type 2 reactions with Ulcerating ENLs. This is to present a case of extensive chronic Ulcerating ENL where due to neglect the skin over both anterior Tibial surfaces was lost leaving 15cm x 5 cm linear dry wounds over both legs. This is to demonstrate a more conservative approach, of tibial drilling to facilitate granulation and healing, given the existing clinical situation.

The 45yr female patient got admitted in our hospital with a 5+ Skin Smear and history of being on Steroids from a Private Hospital since 3 years. She had a Haemoglobin of 4.7Gm% was hospitalized due to severe Type 2 Reaction with generalized ulcerating ENLs. She was unable to walk and was using a wheelchair for mobility.

She presented with the tibia of bilateral lower limb exposed for 19cm in right limb and 15cm length in left limb with a width of 7cm at right and 5cm at left limbs respectively. Routine wound care was initiated. To promote granulation, drilling of tibia was carried out under spinal anaesthesia at 3 interspersed sittings. Images of the granulation progress will be shown. Supportive dressings with Vaseline gauze after gentle cleansing were done on alternate days. Supplementary medication, in depth counseling, physio and occupational therapy for conservative management for NFI and diversion activities were carried on to overcome stress and depression related to disease & hospitalization of about 200 days. The ulcer got healed fully and she regained mobility.

Conclusion: This novel treatment of bone drilling is effective in tissue healing over exposed bone by promoting granulation. Hence, we recommend this method in the management of difficult to heal cases of ulcers with exposed bony surfaces.

Keywords: Tibial Drilling procedure, Ulcerative ENL, Mobility, Leprosy

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#0847/ ILCABS200

PROMOTION OF HOME-BASED SELF-CARE SERVICES BY FRONTLINE WORKERS FOR PERSONS AFFECTED IN WEST BENGAL

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Introduction: National Leprosy Programm in India has emphasized early case detection, case management. However, utilization and uptake of services by persons affected was poor without regular follow up. A home-based self-care (HBSC) initiative was launched by West Bengal government to promote and provide regular care services.

Objectives: To develop a sustainable self-care promotion service within general health care for persons affected.

Methodology: It was planned to provide doorstep delivery of services by Accredited Social Health Activist (ASHA) and Multi-purpose workers (MPW). District leprosy officers (DLOs) were sensitized about the plan , methodology, documentation .They in turn sensitized frontline workers. The frontline workers regularly undertake home visits to disabled persons due to leprosy for self-care services promotion including provision of materials. On monthly basis, MPW document and compiled data at block and district levels.

Results: 18,179 persons affected were provided self-care promotion services every month at their doorstep. Workers supplied protective footwear,tumbler,dressing materials, glasses and education . Improvement in healing of ulcers was observed in more than 60% of persons [DSL1] with an ulcer and there is anecdotal evidence to support that such practices have helped in reducing stigma among family members and communities.

Limitations: Keeping the frontline workers motivated and sustaining supportive supervision by supervisors was difficult. Persons with leprosy-related disabilities may require support to improve socio- economic condition.

Conclusion: The HBSC has been in place for the past three years giving a solution for a regular low-cost service delivery for affected persons. A system needs to develop for regular sensitization of frontline workers on management of disability, assessment of progress and lessons learnt.

Keywords: HBSC, ASHA, MPW

#0848/ ILCABS229

TELE REHABILITATION SERVICES FOR PEOPLE AFFECTED BY LEPROSY IN TAMIL NADU DURING THE COVID LOCKDOWN PHASE

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Introduction: The accessibility to leprosy rehabilitation services is limited in rural areas due to the lack of professionals and service facilities at the community level. The people affected by leprosy living in rural areas could not reach the hospitals, especially during the Covid pandemic situation due to the lockdown that was imposed throughout the state of Tamil N?du.

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Objective: To use telecommunication to continue disability management care, self-care activities and follow up during the COVID lockdown period.

Methodology: The community-based project was in a situation to find an alternative to ensure the continuous monitoring & follow up of patients during the lockdown phase. Local volunteers & leprosy champions were trained in the use of WhatsApp, and Zoom calls. Leprosy champions created group video calls by using WhatsApp and zoom applications to connect with rehabilitation professionals and get consultations. Therapy was demonstrated during video calls and, the provided services are followed up and monitored by community volunteers and leprosy champions. The project team demonstrated the disability management services such as Ulcer dressing, self-care, and exercises for patients through zoom calls.

Results: 12 volunteers trained to use WhatsApp video calls and Zoom calls. 106 people affected by leprosy accessed telerehabilitation services. 49% patients for ulcer care, 16 % for pre-operative exercise, and 35% for aids and appliances.

Conclusion: Telerehabilitation services during times like pandemics are a good practice that demonstrates how people affected by leprosy can manage their disabilities at home. This can be a potential solution to manage leprosy and its disabilities in the community itself by involving the volunteers and leprosy champions in monitoring & follow up during the lockdown phase and also normal circumstances to ensure ease of communication with patients and prompt rehabilitation care without delay.

Keywords: Telerehab, POID, Community, Leprosy

#0849/ ILCABS255

ACTIVITY LIMITATION AND SOCIAL PARTICIPATION AMONG THE PATIENTS WHO UNDERWENT RECONSTRUCTIVE SURGERY IN LEPROSY.

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Introduction: Leprosy is a disabling disease which creates stigma in society. Physical disability often has serious and important effects on everyday life and psychosocial well-being of affected individuals. Reconstructive surgery is an option available for the patients. This intervention can improve or restore limb functions and prevent further disabilities and improve cosmetic appearance.Salsa measures activity limitation in people with peripheral neuropathy such as diabetes and leprosy.Participation scale measures client perceived participation in people affected by disabilities.

Objectives: To analyze the change in Activity limitation and Social participation scores among patients undergoing reconstructive surgery for disability correction.

Methodology: Pre & post scores of Activity limitation and Social participation compared among all patients undergoing reconstructive study through chart review from 2018-2022, Data was entered in excel and analyzed. Eligible criteria for inculsion in the study were people with hand or foot disability due to leprsoy who had not been operated in the previous year.

Results: Total 50 Participants with impairments of hand feet and eye which where suitable for reconstructive surgery are included, among them 37 had hand surgery, 12 foot surgery, and 1 eye surgery. Results will be discussed on the following variables: Type of deformity, WHO score, EHF score, SALSA score, and P scale score.

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Expected Outcome: Reconstructive surgery brings positive changes in activity limitation & social participation scoring. This study is to retrospectively assess changes in activity limitation and social particiaption of individuals with leprosy related hand or foot disabilities over time, and to evaluate the effect of reconstructive surgery on these outcomes.

Limitation: It is a retrospective study with information on limited time points. It would be good to to have a follow-up of 1 year or more.

Keywords: Leprosy, Disability, Reconstructive Surgery, Activity Limitation, Social Participation, Retrospective Followup Study

#0850/ ILCABS333

PATELLAR TENDON BEARING MODIFICATION OF TOTAL CONTACT ORTHOSIS FOR ACUTE NEUROPATHIC FOOT IN LEPROSY - A CASE STUDY

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Introduction: Acute neuropathic foot also know as ' Charcoat's foot' or 'hot foot', is a serious complication in leprosy and leads to progressive and permanent deformity of the joints of the foot. Early offloading and immobilization of the foot can prevent the progression of this condition. Total contact casts using Plaster of Paris (POP) with complete non-weight bearing is a commom method for management of this condition. However, this requires prolonged Hospital admission and non-compliance of patients for this modality of treatment.

Methodology: We report the case of a 38 years old Female patient who presented with swollen left foot after 3 years of completing Multi-durg therapy. The foot was warm, erythematous, edematous and non-tender on examination and radiography of the foot showed features of acute nurapathic joint. Patient was placed in a Total contact cast with POP and bed rest for six weeks after which the cast was removed and on examination showed resolution of inflammation. However, a week after mobilizing, she developed inflammatory changes again with forefoot valgus. We immobilized the foot now in a Patellar tendon Bearing Total contact orthosis. It is customized Tri-valved orthosis made of polypropylene sheets with a soft inner layer. Following which there was no further worsening of the disease process.

Conclusion: Patellar tendon bearing modification of total contact orthosis holds several advantages as compared to routine plaster casts and Charcot resistant orthotic walkers. It is more effective in offloading the foot, donning and doffing is eaiser, weights lighter and patients can be discharged earlier with this, resulting in better compliance .The orthosis can be easily modified for volume changes of the foot and individual footwear.

Recommendation: We recommend patellar tendon bearing modification of the routine total contact orthosis for management of acute neuropathic foot in leprosy for early recovery and better patient compliance.

Keywords: Patellar Tendon Brace, Total contact orthosis, Charcot.s foot, Neuropathic

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#0851/ ILCABS343

INCIDENCE OF RECURRENT CHRONIC PLANTAR ULCERS AMONG LEPROSY PATIENTS IN RURAL AREAS – A FIVE-YEAR FOLLOW-UP

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Introduction: Plantar ulcers in leprosy due to the neuropathic changes in the feet making them vulnerable for trauma and chronicity of the ulcer. The resultant complications delay the healing process and possibility of recurrence. Understanding the factors associated with recurrence of plantar ulcers often helps in planning appropriate interventions for preventing recurrence of plantar ulcers in leprosy patients.

Objectives: The objective of this study was to assess the duration and distribution of plantar ulcer in the foot in association with healing and recurrence rates over a 5 year follow up period.

Material and methods: A total of 71 adult leprosy patients with plantar ulcers living in rural areas of Maharashtra registered under Rural Prevention of Disability Program during 2017 to 2021 were studied. All the patients were managed with a home-based ulcer care under the guidance of trained community volunteers. Patients were assessed every year for 5 years to ascertain the status of ulcer and the findings were analysed.

Results: 34 (48%) of the ulcers affected right foot and majority were located under the head of metatarsal (77.5%). 64.8% had a duration of 1 year and only 8.5% had a duration of more than 5 years. 31% of the ulcers healed during the first year and the maximum healed (73.2%) during the third year. Recurrence rates were 5.66% after 1 year of initial healing, 21.1% after 3 years, and 7% after 5 years.

Limitations: The study could only associate the healing and recurrence of plantar ulcers as a preliminary finding. A case-control study with larger sample size would have further improvised the findings.

Conclusion: This study emphasizes the need for a sustained field-based intervention for preventing the recurrence of existing ulcers in leprosy patients, under the DPMR guidelines of the leprosy control programme.

Keywords: Ulcer, Self-care, Healing, Recurrence, Follow-up, Evaluation

#0852/ ILCABS368

IMPROVEMENT IN QUALITY OF LIFE (QOL) AFTER RECONSTRUCTIVE SURGERY (RCS) AMONG LEPROSY AFFECTED PERSONS IN DHANBAD DISTRICT OF JHARKHAND, INDIA

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Background: Leprosy is considered as a special public health problem causing disabilities leading to deformities of limbs and eyes. Reconstructive surgery (RCS) plays an important role in restoring or improving

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limb function, cosmetic appearance and preventing further disability. It also benefits the leprosy cases having deformities in improving their social acceptance, performance, confidence, satisfaction level and thereby minimizing the existing stigma. This study was carried out to assess the performance of routine activities and improvement in quality of life (QOL) among the 93 leprosy affected persons (LAPs) who had undergone RCS during three years.

Objective: To know the improvement in self-confidence, satisfaction level in social and vocational rehabilitation.

Methodology: All the LAPs who had undergone RCS 93 people were tracked telephonic. Of them 90 people are contacted and informed consent from each of them. Data were collected using a pre-tested semi-structured questionnaire. The questionnaire broadly included 5 major segments focusing on background characteristics, self-care, social, occupational and psychological well-being.

Result: Among the 90 study participants, 62 (70%) were male and 28 (30%) were female. A total of 85 (94%) of participants had improved acceptance by their family members, friends and society after correction of deformity which resulted in their psychological wellbeing. This study shows RCS has brought dignity and self-respect among the LAPs resulting in a significant impact in minimizing the stigma and improving social acceptance, preventing stigma and social displacement.

Conclusion: This study found that there is a significant improvement in quality of life among LAPs after RCS. These results need to be disseminated up to the community so that more such cases with deformities become aware and seek RCS. Social and vocational rehabilitation through Social welfare departments will help improve their occupational activities and improve their confidence and satisfaction.

Keywords: LAP- Leprosy Affected Persons, RCS- Reconstructive Surgery, QOL- Quality of Life

#0853/ ILCABS385

A SURVEY OF SAFETY AWARENESS AND LIMITATIONS IN ACTIVITIES OF DAILY LIVING AMONG PATIENTS AFFECTED BY LEPROSY ATTENDING AN OUT-PATIENT TREATMENT FACILITY AT A TERTIARY CARE LEPROSY HOSPITAL IN SOUTH INDIA.

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Introduction: Patients with nerve function impairments/ sensory loss will need to be aware of safety issues in their daily activities to prevent deformities in their affected body parts.

Objective: The objectives of this study are to assess the safety awareness in leprosy patients & to find out its relationship with clinical factors and also to explore the extent of activity limitations perceived.

Method: Patients attending the hospital for treatment were assessed for safety awareness and activity limitations using the SALSA scale. A total score of 25 or more points is indicative of activity limitation. The safety awareness score is calculated based on one point each for the responses to 11 questions of the total 20 answered and this score varies from 0-11 points with a score of 1 & above is interpreted as patient having awareness about safety issues during daily activities. The impairment score (EHF) of 1 & above suggests that patient has sensory & other impairments. The safety awareness score, the SALSA score and the impairment score, along with socio-demographic variables were analyzed for a total of 227 persons affected by leprosy.

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Results: Out of the total 227 patients screened, 68(29.6%) had activity limitations and 154(67.84%) had impairments. About 7(10.29%) experienced activity limitations in absence of EHF impairment and 24(35.29%) had activity limitations & 89(55.97%) had EHF score of minimum 1 with nil awareness to safety issues respectively.

Conclusion: About 35% of patients with activity limitations and 55% of patients with impairments had no safety awareness respectively. Also 10% of patients with an EHF score of 0 had activity limitations predominantly due to reaction & neuritis pain. Therefore it is very essential to assess safety awareness & activity limitations in all leprosy patients irrespective of their impairment (EHF) status in order to plan rehabilitative intervention for POID services.

Keywords: Activity limitation, Safety awareness, Impairment, Deformity, Injury, Rehabilitation

#0854/ ILCABS402

LEPROSY ORIENTATION FOR FINAL YEAR MEDICAL STUDENTS

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Introduction: Regular leprosy trainings are needed to improve the knowledge of health care providers including medical officers. Past studies among medical students has demonstrated knowledge of leprosy treatment is good, but diagnosis skills are inadequate.

Materials and methods: One-day orientation for final year medical students of 3 medical colleges was conducted each year for 3 years. Most of these medical students are posted in the primary health centres within a year. A team of facilitators including a Surgeon, Dermatologist, Ophthalmologist, Physiotherapist and Clinical Psychologist provided the training. Topics covered in the orientation included basic epidemiology, clinical leprosy, eye care, surgical aspects, prevention of impairments and stigma. Pre-test and post-test was conducted before and after the training.

Results: Number of students trained were 274, 268 and 243 in the three years, of which 205 (74.8%), 204 (76.11%) and 103 (42.3%) students completed both the pre and post-test. The minimum pre-test score was 4 and maximum score 27. The minimum post-test score was 8 and the maximum was 30. There was a statistically significant improvement in the mean post test scores compared to pre test scores over all three years.

Feedback was collected from these graduates 2 years after the trainings to assess if the training was still beneficial to them in their work. 132 (22.71%) graduates (73 (55.3%) males and 54 (40.9%) females) responded. Of these 132, 110 diagnosed and treated leprosy due to the training. 20 identified and treated leprosy complications, while 65 identified and referred leprosy complications to tertiary care centres.

Conclusion: Exclusive trainings for medical students will help improve knowledge and skills in diagnosing, managing and referring patients. Such trainings to medical students would help in strengthening the care system and result in early identification and treatment of those affected by Leprosy.

Keywords: Training, Medical students, Leprosy, Pre-test, Post-test

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#0855/ ILCABS405

PREVALENCE OF DISABILITIES AND DEFORMITIES AMONG HANSEN'S PATIENTS IN POST ELIMINATION ERA

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Background: Leprosy related disability is a challenge to public health, social and rehabilitation services in endemic countries. Leprosy remains a leading cause of peripheral neuropathy and disability in the developing countries like India, despite extensive efforts to reduce the burden of the disease.

Aims and Objectives: The study's primary objective was to document the disabilities and deformities at the time of presentation in the post-elimination era.

Material and Methods: An open, prospective study was performed at a tertiary care hospital over a period of 12 months from March 2021 to March 2022

Results: The study includes 50 newly diagnosed leprosy cases which presented to our O.P.D. Out of 50 patients, 39 patients presented with disabilities. Grade 2 disability was the most common, seen in 19 (48.71%) patients,12 (30.76%) patients had grade1 disability, and 8 (20.51%) patients had grade 3 deformity. Pure neuritic hansen's (14) patients developed more disabilities, followed by B.T. hansen's (11), lepromatous leprosy (9) , B.L. hansen's (4) and B.B. hansen's (1). Feet were the most commonly involved site. Sensory, motor and nerve function impairments were the commonest nature of the disability. Male (27) patients outnumbered female (23) patients, and most were in the 26-40 years age group.

Conclusion: Disabilities and deformities were noted in 78% of newly diagnosed leprosy cases. This study emphasizes the need to enhance leprosy awareness among the general public, which can facilitate early diagnosis. Thereby stigma and burden caused by disease-associated disabilities can also be prevented.

Keywords: LEPROSY, PREVALENCE, DISABILITIES, DEFORMITIES, POST-ELIMINATION, AWARENESSPREVENTION

#0856/ ILCABS444

SOCIO-ECONOMIC AND BEHAVIORAL ASPECTS OF PEOPLE AFFECTED BY LEPROSY WITH FOOT ULCERS TREATED AT A LEPROSY REFERRAL CENTRE, INDIA- A CROSS SECTIONAL STUDY

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Introduction: India contributes to about 51% of new leprosy cases detected globally every year (WHO 2021). Grade II disability among the new cases is 2.4% according to NLEP annual report 2019-2020. Plantar ulceration is the most common disability among people affected by leprosy. It occurs in about 10% to 20% of the affected people, affecting social, behavior, and economic aspects. A study is undertaken to look into these aspects at LEPRA BPHRC, Hyderabad referral centre.

Objectives:1. To study the various factors currently contributing to the development of plantar ulcers and their non-healing among people affected by leprosy.

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2. To facilitate mitigation of risk factors

Methodology: A cross-sectional study of people affected by leprosy registered during 2012-2017 with foot ulcers attending BPHRC for care has been enrolled (n=50). A structured questionnaire administered to collect demographic, occupational, awareness, and practice of self–care, health-seeking behavior, usage, and availability of MCR footwear has been collected.

Results: Mean age 51.88 years, mean duration of ulcer 72 months, Male 70%, Occupation: Daily wage workers 28%, private employees 16%. People walk to work every day 56% (28), majority walk 2 km per day 43% (12), awareness of self-care practice 96% (48), regular practice of self-care 60% (29), reported wage loss 45% (50%), not sure of ulcer care services at PHC 46%(23), confidentiality, long waiting hours, inaccessibility of PHC were the reasons for not availing services at PHC. MCR footwear is available for 82% (41), regularly used by 83%(34).

Conclusion: Provision of Ulcer care services at the PHC and raising awareness in the community about the services provided can prevent long-distance travel, wage loss, and travel cost to the affected person and contributes to the healing of the ulcer.

Keywords: Plantar ulcers, Social aspects, Behavioral aspects

#0857/ ILCABS461

CORRECTION OF GRADE II DEFORMITIES BY PHYSICAL METHODS

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Introduction: Affecting of peripheral major nerves in leprosy often leads to development of Grade II deformities of permanent nature. Leprosy patients with such residual deformities have to face social stigma for their entire life even after completion of MDT. Systematic follow-up during and after completion of treatment is important, when new disabilities may occur, or existing disabilities may get worse. Surgical correction of Grade II deformities is the methodology presently advocated which has number of known limitations.

Objective: To determine the physical methods are proven effective in correction of Grade II deformities in leprosy.

Methods: Study conducted among 6 male and 2 female people affected by leprosy (3 claw hand and 5 foot-drop cases) with less than 6 months duration of deformities administered a course of oral steroids with biweekly tapering doses stared with 40mg per day. In addition, adequate physiotherapy sessions given such as wax bath, electrical stimulation, ulnar neuritis splint, dorsiflexion back slab, 4 finger loops and exercises at a Leprosy Referral Centre twice a week. Patients were also counselled, trained and demonstrated to take care of their hands and feet and do exercise with splints while at home. Patients were assessed every 2 to 4 weeks.

Result: Pre and post-intervention Voluntary Muscle Testing showed remarkable improvement in function and the photographs shows almost complete recovery in all cases. 5 out of 8 patients started earning for their family after the recovery while 1 patient continuing the studies.

Limitations: Early detection of deformity within short duration and regular follow-up may not be feasible in certain settings without adequately trained professionals

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Conclusion: The appropriate physical methods if implemented in time, particularly before the muscles get wasted, the complete correction of Grade II deformities can be achieved without needing a complicated process of surgical correction thus reducing hospitalization.

Keywords: MDT - Multi-Drug Therapy

#0858/ ILCABS493

REACTIVE ECCRINE SYRINGOFIBRODENOMA AROUND TROPHIC ULCER MIMIKING SQUAMOUS CELL CARCINOMA

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Introduction: Eccrine syringofibroadenoma (ESFA) is a rare benign tumour with of eccrine origin with varied clinical manifestations, but characteristic histological findings. It is divided into five sub types-1) multiple ESFA associated with hidrotic ectodermal dysplasia, 2) multiple ESFA without associated cutaneous features, 3) unilateral linear ESFA, 4) solitary ESFA and 5)reactive ESFA.

Case report: A 62 year old female, diagnosed case of borderline lepromatous leprosy and completed treatment 8 years back came with trophic ulcers on the right sole since 5-6 years. She gave history of an asymptomatic slowly progressing, exophytic verrucous growth around the ulcer involving the lateral border of the sole extending to the dorsal aspect since 2-3 years. There were no co-morbidities.

On examination there were 3 well defined ulcers (1-5 cm sized) on the right sole, with floor showing yellowish slough and raised hyperkeratotic edges.There were hyperkertotic papulonodular lesions surrounding the ulcer on the midfoot extending to the dorsal aspect. There was no regional lymphadenopathy, but sensations were reduced on bilateral soles and absent surrounding the ulcers. Symmetrical thickening of both ulnar and radial cutaneous nerves was noted. X ray right foot was normal ruling out osteomyelitis.

Histopathology from the papulonodular lesion around the ulcer revealed thin anastomosing vertical strands of epithelial cells with luminal structures surrounded by fibrovascular stroma suggestive of eccrine syringofibroadenoma.

Discussion: Reactive ESFA has been found to occur in association with palmoplantar erosive lichen planus, bullous pemphigoid, burn scar, ileostomy stoma, venous stasis, nevus sebaceous, and chronic diabetic foot ulcer. The pathogenesis may involve repeated eccrine duct trauma resulting in eccrine duct remodeling and repair, sympathetic neuropathy in leprosy and impaired blood circulation. The condition has benign course. Close observation and follow up is advised due to low risk of malignancy.

Keywords: Eccrine syringofibroadenoma, Trophic ulcer, Leprosy

#0859/ ILCABS562

DIGITAL DISABILITY REGISTER (DDR) UNDER NATIONAL LEPROSY ERADICATION PROGRAMME, INDIA, AN INITIATIVE

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Introduction: Leprosy is feared because of the occurrence of disabilities it causes. The problem in social, economic, and human terms is enormous. A comprehensive approach for rehabilitation is needed to maximize the benefits for the individual, family, and society at large.

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Medical Rehabilitation like DPMR services (Physiotherapy, soaking, scrapping, oil massage of affected limb (self-care counselling), lepra reaction management, MCR foot-ware & RCS surgery for deformed limb etc.)are being provided by the Health Dept. of States/UTs under NLEP. Number of persons living with leprosy-related disabilities and impairments and services provided by the health dept. are in physical registers (Disability registers) at block CHC/District level & there were no state/national compilation. Central leprosy division has taken an initiative to compile same & develop a Digital Disability Register in 2022.

Methodology A google form is developed to capture the data from States/UTs about all disable persons affected by leprosy (both new, old, G1 & GII) and services provided to them by health dept. As on 1st June 2022 more than 16,000 disability person details are captured in the DDR and descriptive analysis with the help of excel was done.

Results: Out of 16,173 disability Persons entered in the DDR, 67% are male and 32.3% are Female. 79.6% are old disable cases, 17.4% are New disable cases and 3% are under treatment disable cases.

96.1% of Disability persons were MB category and 3.9% are PB. 66.5% are with Grade II Disability and 33.5% are Grade I Disability. Site of Disability was in Hand 69%, Foot 67.5% and eye 3.3% is observed.

Different DPMR Services provided to disabled persons are Self Care counselling (72.9%), MCR Foot wear 65.5%, Ulcer treatment 24.8%, Steroid 12.6 % and Other services 27.4%.

Keywords: Digital Disability Register, Medical Rehabilitation, Self Care counselling

#0860/ ILCABS587

THE UNFULFILLED RIGHT TO HEALTH AND REHABILITATION OF PEOPLE AFFECTED BY LEPROSY IN INDONESIA

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Introduction: Even after treatment, people affected by leprosy require wound care, medical rehabilitation and treatment of reactions. The right to health encompasses availability, accessibility, acceptability (including dignified treatment) and adequacy. In 2021/2022 PerMaTa Sulsel-YDTI visited 1500 people affected by leprosy to assess their needs and found many who are experiencing barriers in these elements. We investigated the problem and formulated a policy brief.

Description of case: In our survey we found many persons affected by leprosy with recurring, chronic, neglected health problems that go untreated. We held discussions and hearings with former leprosy hospital, state health insurance, districts and province leprosy control programs, and district hospitals, to get to the bottom of the cause.

We found 3 developments responsible:

1. The transformation of former leprosy hospitals into general hospitals.

2. The regulations of state health insurance which recognise no need for special accommodations in the rehabilitation and care of persons affected by leprosy. For example, plantar ulcers are not an indication for inpatient treatment.

3. The worldwide practice to declare leprosy eliminated as a public health problem, resulting in a lack of funds and capacities. Most care and rehabilitation services are not available on district and province level.

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Stigma, discrimination and self-stigma are major parts in the lives of persons affected by leprosy, complicating access to public health services to an extent that their needs are often different from that of other people. The state does not recognize that additional measures are necessary to fulfil the elements "availability, accessibility, acceptance and appropriateness" for persons affected by leprosy.

Conclusion: Appropriate (special) care for people affected by leprosy stopped in recent years, but has not been replaced by adequate inclusive services. To ensure access to care and rehabilitation, reasonable accommodation must be made in accordance with CRPD and Indonesian Disability Act 8/2016.

Keywords: Lack of rehabilitation, Neglect after RFT, Reasonable accomodation, Leprosy hospitals, Right to health

#0861/ ILCABS638

A STUDY OF CLINICAL PATTERN OF DEFORMITIES OF HAND AND FOOT IN HANSEN'S DISEASE IN A TERTIARY CARE CENTRE

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Introduction : Leprosy is a chronic granulomatous disease caused by Mycobacterium leprae.Deformities and disabilities in leprosy causes significant morbidity to the individual and financial burden to the family. Deformity is defined as any loss or abnormality of psychological, physiological or anatomical structure and function. Presence of physical deformities in patients with leprosy reflects the delay in detection of cases and inadequacy of treatment or treatment failure.

Aim : To study the clinical pattern of deformities of hand and foot in Hansen's disease in a tertiary care centre.

Materials and Methods: A retrospective study was conducted on all leprosy patients who visited Dermatology OPD and referral cases from other departments in Gandhi Hospital over a period of 1 year from Feb 2021 to Jan 2022.

Results: Out of 160 patients with leprosy, 95 patients had deformities of hands and feet. This included both newly diagnosed cases and old cases who completed treatment. Out of 95 patients with deformities, 58 (61%) were males, 37 (38.97%) were females. Among these, 60 patients (63.15%) had WHO grade 2 deformity of hands and feet (visible deformity) and 35 (36.84%) had WHO grade 1 deformity.

Among 60 patients with visible deformity, the most common was trophic ulcer seen in 25 patients (41.6%), followed by claw hand (20), autoamputation of digits (7), foot drop and ape thumb (3 each) and banana fingers (2). None had claw toes.

Limitations: Due to retrospective nature of the study, data could only be collected from patients whose records were available.

Conclusion: Our study found that more than 50% of leprosy patients had deformities. This underlines the need for early detection and management of deformities and disabilities. Patient education regarding hand & foot care is important.

Keywords: Deformities, Trophic ulcer, Claw hand

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#0862/ ILCABS688

ADDRESSING THE PROBLEM OF CONTINUUM OF CARE AT HOME

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Background: NTD-related morbidity and new/worsening disability can and should be prevented through proper home-based management by affected people and caregivers, as well as timely referrals to facility-based care by grassroots workers. In remote and resource-constrained areas, healthcare service delivery is prioritized for the most pressing healthcare priorities like maternal and child care, as well as the killer communicable diseases such as tuberculosis, HIV/AIDS, and others. The government's grassroots healthcare personnel, ASHAs (accredited social health activists), are engaged in these priorities and have neither the capacity nor the time for the scattered few (in comparison) people cured of NTDs but requiring continuous care for their lifelong conditions.

Objectives: To determine whether self-care provides people affected by NTDs with the knowledge they need to care for themselves.

Methodology: Innovative grassroots approach of home-based care through training locally available 130 community resource persons (CRPs) in appropriate service provision using digital technology for 1493 people in morbidity and disability care in a Kalyanpur Block of Samastipur. People affected were provided with the information, skills, and support networks they need to care for themselves. It was found that 1252 (84%) people are regular with self-care home based practices and reduction of 593 (81%) acute attacks and 614 (83%) entry points healed and reduced 45 (76%) recurrence of ulcer.

Results: The results were compared with the more traditional way of other NTDRU Bihar projects, NTD continuum of care and its advantages in benefitting the people affected, and in supporting the already strained healthcare services at the periphery.

Conclusion: Community Resource Persons (CRPs), using digital technology can screen, educate, and refer, all in coordination with the existing healthcare delivery system. Through local CRP, concept of "self-care" can be facilitated by placing responsibility on individuals for their own health and well-being.

Keywords: NTD- Neglected Tropical Disease, ASHA- Accredited Social Health Activists, CRP- Community Resource Person, NTDRU- Neglected Tropical Disease Resource Unit

#0863/ ILCABS693

ADDRESSING THE PROBLEM OF CONTINUUM OF CARE AT THE PRIMARY HEALTHCARE FACILITY

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Background: Equitable access to healthcare is a major principle of national health systems worldwide, but in India, people with NTD disabilities face numerous barriers in receiving specialized NTD care at government health facilities because of the unavailability of services. As a result, people seek out-of-pocket treatment from informal 'medical' practitioners, and their disability and morbidity, as well as their quality of life and

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finances, deteriorate. There is only one Primary Health Centre (PHC) serving around 64,000 households and a population of 300,000 in the 130 villages of this remote, rural, and economically poor Block.

Objective: To address barriers in accessing specialized continuum of care by people affected with NTD disabilities at PHC

Methodology: Based on an ongoing survey, we registered 2,934 people with LF and 245 leprosy live in the 106 villages, of whom have Lymphoedema grade of Gr1-381, Gr2-469, Gr3 and above-593, 1491-hydrocele, and leprosy Gr1-20, Gr2-47 disability. At the reported rate of 2-3 acute LF episodes a year and 2-3 recurrences of leprosy ulcers or neuritis/reaction per patient, we are looking at approximately 10,000 treatment episodes a year that would require continuum of care, both medical and surgical, at a healthcare facility.

Result: Our findings share the actual ground situation through data and maps; the issues of people's access to NTD morbidity and disability care based on interviews and FGDs; and actual observations at the PHC and interviews with PHC staff.

Conclusion: Additionally, we share our way forward to strengthen the existing health care delivery system at the primary level for NTD disability and morbidity service provision including hydrocele surgery, based on the now clearer understanding of the situation.

Keywords: PHC- Primary Health Centre, NTD- Neglected Tropical Disease, FGD- Focus Group Discussions, LF- Lymphatic Filariasis

#0864/ ILCABS696

BONE CHANGES IN NEWLY DIAGNOSED LEPROSY PATIENTS IN A TERTIARY CARE HOSPITAL – A CROSS SECTIONAL STUDY

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Introduction: Leprosy is a chronic disease affecting the peripheral nerves ,skin,bones,joints and other tissues.It causes progressive and permanent physical deformities with serious social and economical consequences if not diagnosed early or if left untreated. Common sites of bone involvement are small bones of hands and feet followed by the bones of face.Early detection,adequate treatment and proper education can bring down the deformities.

Objectives: To describe the common bony changes encountered in newly diagnosed leprosy patients attending leprosy clinic in Tirunelveli medical college hospital of south Tamil Nadu over an year

Patients/material and methods: This was a descriptive cross sectional study which included all newly diagnosed leprosy patients attending leprosy clinic from December 2020 to November 2021. Study was started after getting approval from the institutional ethics committee. Detailed clinical history, physical examination and investigations were carried out to identify the spectrum of the disease. The radiological changes were studied by taking roentgenograms (Xrays) of the hands, feet, and face irrespective of deformity

Results: Among 34 patients(24 males,10 females) radiological changes were seen in 13(38%) patients.The radiological changes found were absorptive changes(20%) erosive changes(14%), resorptive changes(3%),joint space narrowing(3%),fixed flexion deformity(14%), osteolysis(6%), osteoporosis (3%) respectively. Male patients showed more bone changes 76% than female patients 23%

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Limitations: Larger sample size is needed for better results

Conclusion: The overall incidence of bone changes was 38% of which 53% showed non specific bone changes and 38% specific bone changes which is similar to the previous studies. LLHD and BLHD showed increased incidence of bone changes 30% followed by BTHD 23%,TTHD7.6%,PNHD7.6%. The study of bone changes may help the clinician to modify the management of the disease and in preventing the permanent loss of function and the occurrence of deformities and disabilities.

Keywords: Deformities, Bone changes

#0865/ ILCABS734

FRACTIONAL CO2 LASER PLUS PLATELET RICH PLASMA THERAPY TREATMENT IN A PATIENT WITH MULTIPLE ATROPHIC SCARS POST SEVERE TYPE 2 REACTION IN LEPROMATOUS LEPROSY .

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Introduction: Bullous Erythema nodosum Leprosum (TYPE 2 reaction) is a rare presentation , which can leave atrophic scars. The MDT and the treatment of reaction caters to subsidence of symptoms, eventually disability and scars are left serving as psychological reminder and stigma of disease.

Description of the case: A 36 year old female, suffered from lepropamatous leprosy ,very high B.I (4+) and M.I, had recurrent bullous TYPE 2 REACTION. After completion of her MDT for complete 2 years and treatment of reactions, the patient was left with multiple atrophic scars on arms and legs.

We treated her multiple atrophic scars with alternate fractional CO2 LASER and PLATELET RICH PLASMA therapy , 2 sessions of each ONE month apart .

There was visible reduction in the scars , betterment in laxity of skin.

Immediate side effects of erytherma and pain was experienced but reactions were not aggrevated.

Localised erythema and pain was treated with NSAID and cold fomentation.

In between sessions SCARS were treated with moisturisers and tacrolimus 0.1percent . post inflammatory pigmentation subsided with these .

There was visible reduction , more than 50 percent in her scars, as assessed from pre and post clinical photographs.

0n patients assessment more than 60 percent improvement was seen , pyscologically patient was happy .

Fractional CO2 laser session yielded better response than PRP sessions in the limited sessions done .

Conclusion: Cosmestic and psycological betterment after cure of leprosy is a problem less catered to and the stigma of leprosy remains , treatment targeting these aspects should be looked into. LASERS and PRP THERAPY must be assessed as treatment modalities , and protocols for number of sessions must be establised.

Keywords: BULLOUS ENL, ATROPHIC SCAR, FRACTIONAL CO2 LASER TREATMENT

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#0866/ ILCABS810

INVESTIGATING THE ROLE OF TOPICAL APPLICATION OF AUTOLOGOUS PLATELET-RICH FIBRIN FOR TREATING CHRONIC PLANTAR ULCERS IN LEPROSY: AN INTERVENTIONAL PILOT STUDY

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Introduction: Infection of plantar ulcers is one of the commonest complications that hinder wound healing and leads to functional disability and deformity. Platelet Rich Fibrin (PRF) therapy is a preferred treatment option alternative to conventional antimicrobials in an infected ulcer as it is less likely to induce antibiotic resistance and with healing-promoting properties, it may have a synergistic effect on infection prevention and thus preventing ulcer-related complications

Objective: To investigate the therapeutic role of PRF in plantar ulcers of leprosy.

Methods: A longitudinal study of leprosy patients presenting with plantar ulcers attending out-patient clinics at a semi-urban referral center. A simple random sampling method was used to recruit the patients. The inclusion criteria were age-group of 18-65 years, ulcer duration of more than 6 weeks, ulcer with area >1cmx1cm and <6cmx6cm and exclusion criteria were patients with low hemoglobin (<11g%), platelet count of <1.5lakh/mm3 and uncontrolled diabetes, varicose veins and on anticoagulants. ANOVA was used for statistical analysis.

Results: 16 leprosy-affected people with chronic plantar ulcers were enrolled in the study. All the participants were followed up for 5 visits, for whom ulcer characteristics were recorded at baseline and post-PRF therapy. The mean volume of the ulcers at the baseline was 5.2 cm3 whereas post PRF therapy the volume reduced to 1.04 cm3 ($p<0.05$). The average reduction in the surface area of the ulcer was 62%.

Limitations: Low sample size. Further study is planned to take up as a case-control study design.

Conclusion: Autologous Plasma Rich Fibrin has the potential for the treatment of chronic plantar ulcers among people affected by leprosy.

Keywords: Plantar ulcers, Non-healing, Plasma rich fibrin

#0867/ ILCABS820

STUDY OF INNERVATION CHANGES IN CLINICALLY INVOLVED NERVES IN LEPROSY

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Introduction: Peripheral neuropathy is a characteristic feature of leprosy Clinically impairments are identified by using monofilament or voluntary muscles testing which are less sensitive to identify early changes. One clinical test for neuropathology is the shape of the Strength-Duration Curve (SDC) that describes some criterion response of nerve or muscle as a function of the duration of a stimulating pulse. The characteristics

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of the SDC provide a basis for identifying the type of nerve being stimulated and for assessing its degree of impairment

Aim: To study the extent of denervation in clinically involved ulnar nerve due to peripheral neuropathy with the help of SDC and compare its parameters with the Nerve conduction studies (NCS).

Method: SDC was plotted using a constant-current variable pulse generator after obtaining informed consent those with thickened ulnar nerves but no evident muscle weakness and those with thickened ulnar nerves with muscles weakness were included in the study. The SDC was obtained by using the standard clinical technique of successively decreasing the pulse widths (300, 100, 30, 10, 3, 1, 0.3, 0.1, 0.03, 0.01msec) while noting what current (mA) was necessary to maintain a minimal visible contraction of the muscle. These values were recorded for each pulse duration. Both rheobase and chronaxie were also calculated and studied. The NCS were conducted for all patients included in the study. The shape of SDC and chronaxie & Rheobase of Thickened ulnar nerves with and without muscle weakness were compared.

Results: Preliminary findings shows abnormal innervation according to SDC parameters in a clinically involved ulnar nerves with muscle weakness. The abnormal innervation correlates with the NCS parameters for conduction. The data collection is ongoing.

Conclusion: SDC parameters helps to identify the denervation in patients with peripheral neuropathy due to leprosy.

Keywords: Leprosy, Peripheral Neuropathy, Ulnar nerve, Strength-Duration Curve, Denervation, Rheobase

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#0868/ ILCABS889

PARTIAL FOOT PROSTHESIS FOR A PERSON WITH BILATERAL FOOT DROP AND FOOT ADSORPTION: A CASE STUDY

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Introduction: Negligence of foot adsorption and foot drop leads to poor weight distribution, skin breakdown, ulcer and eventually loss of mobility and higher level amputations.

Objective: To design and develop a prosthesis to adress the deformity of foot drop and foot adsprotion bilaterally

Design: An Ankle Foot Prosthesis design embeds polupropylene reinforments upto one - half thickness in the tibial and plantar surface of the posterior leaf spring AFO. To produce the rigid foot plate section and a dynamic posterior section capable of clinically significant energy storage and return characteristics.

Result: The prosthesis showed improvement in gait pattern, energy expenditure, speed of gait, balance, reduction in hyperextension of knee joint bilaterally, skin breakdown and ulcer.

Limitaitons:

Conclusion: This is light weight, inexpensive, easy to fabricate.

Keywords: Bilateral foot drop, Foot adsorption, Partial foot prosthesis

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#0869/ ILCABS952

ADVANCES AND APPLICATIONS OF CELL THERAPY TECHNOLOGY IN LEPROSY ULCER

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Leprosy ulcer is a chronic ulcer caused by Mycobacterium leprae infection. Because of the neurophilic characteristics of Mycobacterium leprae, "nerve damage" become the main pathogenesis of leprosy ulcer. Adipose-derived mesenchymal stem cells (ADSCs) are progenitor cells obtained from adipose tissue through enzymatic digestion and centrifugation, which have pluripotency and paracrine effects, can differentiate into a variety of tissue cells with anti-inflammatory, immunomodulatory and tissue regenerative effects.

Thus angiogenesis, cell differentiation and extracellular matrix secretion may become the experimental theoretical basis for the use of ADSCs to promote the healing of leprosy ulcer. In the meantime, nerve repair and local sensory reconstruction are the scientific questions that this study ultimately seeks to address. In this study, ADSCs were extracted from patients suffering from refractory leprosy ulcers and injected by multi-point injection at the edges and walls of the ulcers in 11 patients.

The same method was adopted for the 11 patients in the control group, and equal amounts of saline were injected at the edges of the ulcers. Subsequently, the patients in both groups were treated with routine dressing and the wounds were assessed photographically, observed histologically and detected immunohistochemically at different times to compare the speed of ulcer healing, local epidermal thickness and collagen content, inflammatory cell conditions. Also we use single-cell sequencing technology to map the postoperative samples into single-cell profiles and to analyze the differences in gene expression of vascular endothelial cells, epithelial cells, fibroblasts, Schwann cells and ADSCs in ulcer tissues at different times to reveal the dynamic changes of ADSCs in the healing process of ulcers and their effects on the cellular components in ulcer tissues.

Keywords: Mycobacterium leprae, Leprosy ulcer, ADSCs, Neural repair

#0870/ ILCABS976

ANALYSIS ON RELATED FACTORS OF HIGH DISABILITY AMONG LEPROSY PATIENTS IN GUIZHOU PROVINCE

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Objective: To understand the influencing factors of high disability (the definition of high disability G2D) of leprosy in Guizhou province, and to provide scientific basis for the prevention of leprosy in the future.

Methods: From 2012 to 2021, 398 new leprosy patients from Guiyang, Anshun, Bijie and Qianxinan prefecture in Guizhou province were investigated on the spot with unified questionnaires, and the questionnaires and medical record information were input into EXCEL to build a database. SPSS18.0 software was used to $\chi 2$ test and non-conditional logistic multivariate regression analysis on the influencing factors of disability in leprosy patients.

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Results: The single factor of disability among leprosy patients was significant to relate with their educational level, first symptom, nerve injury, type, discovery mode, infection source, family member, delay duration and occupation of reporter(P<0.05). According to the multivariate analysis of nonconditional logistic regression, the education level of leprosy patients (OR = 3.228, 95% CI:1.628-6.403), delayed period (OR = 4.888, 95% CI:2.264-10.556), different leprosy types (OR = 5.624, 95% CI: 2.778-11.387), and the reported patients of different occupations (OR = 2.812, 95% CI:0.226-34.967) were the risk factors for the occurrence of high disability among leprosy patients.

Conclusion: The factors leading to disability in leprosy patients were complex, including the education level of the patients, the type of leprosy, the length of the delay and the occupation of the applicant. To enhance of early patient diagnosis was a key strategy to reduce disability among leprosy patients.

Keywords: Leprosy, High disability, Analysis of influencing factors

#0871/ ILCABS1007

THE BURDEN OF PHYSICAL DISABILITY OF NEWLY DETECTED LEPROSY PATIENTS IN YUNNAN, CHINA, 1990-2020: A POPULATION-BASED, CROSS-SECTIONAL SURVEY

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Introduction: An understanding of the trends of the rate, prevalence, time and spatial distribution, and nerve characteristics in physical disability of leprosy disease is crucial for leprosy control programme and identification of remaining challenges.

Objective: To assess trends of the physical disability among newly detected leprosy cases over the past 31 years for 129 countries and districts in Yunnan, China.

Patients / material and methods: We analyzed all available data related to physical disability of newly detected leprosy cases from 1990-2020.

Results: 10758 of new diagnosed leprosy cases were notified and 7328 (65.60 %), 1179 (10.55 %) and 2251 (20.15 %) were diagnosed with Grade 0, Grade 1 and Grade 2 disability, respectively. The rate of physical disability in newly detected leprosy cases per 1 million population decreased from 5.41, 2.83, and 8.24 in 1990 to 0.29, 0.25, and 0.54 per 1 million population in 2020, which has fallen by 94.64%, 91.17%, and 93.44%, for G2D, G1D and physical disability, respectively. In the same period, the proportion of G2D, G1D and physical disability were decreased from 28.02%, 14.65%, 42.67% in 1990 to 10.08%, 11.76%, and 21.85% in 2020, which has fallen by 64.03%, 19.73%, and 48.79%, for G2D, G1D and physical disability, respectively. Nerve thickness was more popular than nerve tenderness, claw hand, plantar insensitivity, and lagophthalmos were most frequency in EHF of disability.

Limitation: Systematic follow-up of patients after treatment completion should be assessed in the study area in the future.

Conclusions: Despite general progress in reduction of prevalence for the physical disability of leprosy disease, the proportion of physical disability in leprosy disease is still high. It implied that leprosy cases were detected in the delayed stage and transmission in the community still exists.

Keywords: Physical disability, Leprosy

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#0872/ ILCABS1008

RISK FACTORS FOR PHYSICAL DISABILITY IN PATIENTS WITH LEPROSY DISEASE: EVIDENCE FROM A RETROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Leprosy is potentially debilitating.

Objectives: The risk factors related to physical disabilities associated with leprosy disease was not clear.

Patients / material and methods: Factors associated with physical disabilities of 10644 newly detected leprosy patients from 1990 to 2019 were analyzed using multinomial and ordinal logistic regression analyses.

Results: The following factors were associated with the development of physical disability in leprosy patients: delayed diagnosis [odds ratio (OR): 5.652, 4.399, and 2.275; for 10, 5–10 y, and 2–5 years, respectively], nerve damage (OR: 3.474 and 2.428; for 2 and 1 damaged nerves, respectively), PB type (OR: 1.759;), Ridley-Jopling classification (OR: 1.479, 1.438, 1.522 and 1.239; for TT, BT, BB, and BL when compared with LL, respectively), advanced age (OR: 1.472 and 2.053; for 15–59 and over 60 years old, respectively), zero skin lesions (OR: 1.916;), leprosy reaction (OR: 1.528;), rural occupation (OR: 1.364;), Han ethnicity (OR: 1.268;), and male (OR: 1.128;).

Limitation: As a retrospective observational study; the results relied on the accuracy and completeness of patient records. The definitions for the WHO classifications of MB and PB have been continually adjusted. which may have influenced the indicators used in this study.

Conclusions: Delayed diagnosis, nerve damage, no skin lesions, WHO and Ridley-Jopling classifications, leprosy reactions, advanced age, rural occupation, Han ethnicity, and male were associated with disability in leprosy patients. Identifying risk factors could help to prevent physical disability.

Keywords: Leprosy, physical disability

#0873/ ILCABS1028

PRACTICE AND APPLICATION OF CHRONIC WOUND MANAGEMENT THEORY IN NURSING CARE OF SECONDARY LEPROSY ULCER

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Purpose: To explore the application and effect of modern chronic wound theory in guiding the treatment of secondary leprosy ulcer.

Methods: Based on the existing 16 wounds of 12 patients in our hospital, patients' wishes were sought within two years to determine 5 cases of secondary leprosy ulcers as the observation group and another 5 wounds as the control group, and Bates-Jensen wound healing evaluation tool was used to evaluate the effect of wound dressing change.

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Results: Among the five wound scores in the observation group, one shifted from severe to minimal and four shifted from severe to mild. One of the five scores in the control group was moderate and four were severe and unchanged.

Conclusion: Modern chronic wound management theory can enable leprosy ulcer patients to receive systematic and standardized treatment, effectively improve patient outcomes, and improve patient trust and compliance with medical staff.

Keywords: Chronic wounds, Leprosy ulcer

#0874/ ILCABS1034

CLINICAL FEATURES AND EXTERNAL TREATMENT EXPERIENCE OF LEPROSY RECUPERATORS SECONDARY ULCERS FOR 29 CASES

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Objective: To analyze the clinical characteristics of leprosy secondary ulcer, to summarize the experience of external treatment, and to provide reference for its diagnosis and treatment.

Methods: Clinical data of leprosy patients in our hospital from June 2018 to June 2019 were collected for analysis, treatment experience was summarized, and literature was reviewed.

Results: There were 14 cases of simple ulcer and 15 cases of complex ulcer in 29 patients. 19 cases were traumatized, accounting for 65.5%. All cases had nutritional disorders and stressors. There were 36 lesions, of them, 27 in the foot, accounting for 88.8%. The treatment was based on traditional Chinese medicine syndrome differentiation and external treatment, supplemented by the diet of spleen strengthening and deficiency, and combined with western medicine. The cure rate of simple ulcer was 100%. The cure rate of complex ulcer was 66.7%, the good rate was 20%, and the ineffective rate was 13.3%.

Conclusion: In our hospital, secondary ulcer of leprosy patients is most common in the foot, and most caused by trauma. Prevention of foot injury is the premise, while improving nutritional disorders and stress is the key to treatment. The external treatment of integrated traditional Chinese and Western medicine benefits patients.

Keywords: Leprosy ulcers, Clinical features, External treatment

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MISCELLANEOUS

#0875/ ILCABS3

SQUAMOUS CELL CARCINOMA OF BUCCAL MUCOSA IN HANSEN'S DISEASE

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Introduction: Oral lesions in Hansen's disease can be specific and non specific lesions. Oral carcinoma associated with hansens disease is rare presentation. We report a case of Squamous cell carcinoma (SCC)of buccal mucosa of buccal mucosa in a hansens disease .

Case Report: 47 year old female patient came with complaints of multiple nodule all over the body and erythematous patch over face since 1 year on and off , with history of epistaxis and recurrent ulcer over palms and soles . History of oral ulcer was also present detailed history reveled she is tobacco chewer for past 20 years. SSS and skin biopsy was confirmed Hansen's disease . Oral lesion biopsy was also done which revelead Squamous cell carcinoma of buccal mucosa. So patient was started with MBMDT and referred to surgical oncology for management of tumor.

Conclusion: Squamous cell carcinomaof buccal mucosa in hansens disease is rare presentation.

Keywords: Oral lesion, Scc, Hansens disease

#0876/ ILCABS24

FATHER-DAUGHTER DUO: HOW UNMASKING LEPROSY IN FATHER HELPED IN DIAGNOSIS IN THE DAUGHTER- A CASE REPORT

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Introduction: In highly endemic countries like India, where tuberculosis (TB) and leprosy infection may coexist; screening the other before initiating treatment with the first is important, to prevent Rifampicin resistance, since both are sensitive to Rifampicin.

Description of the case: This report discusses a case of leprosy, involving the unmasking of *M. leprae* in a previously treated patient of Pulmonary TB. Here, high index of suspicion of Erythema Nodosum Leprosum (ENLs) in a patient with no past history of treatment with anti-leprosy drugs but having taken anti-tuberculous treatment before 1.5 years, for 6 months; raised a clue towards leprosy. Certain clinical features and histopathology also pointed towards the diagnosis.

This report also acknowledges the prompt referral of this patient by a physician to a dermatologist.

Also, family screening, which is an essential part of leprosy management, helped us diagnose the same in the daughter of the patient as well, where otherwise, the lesions were mis-diagnosed and mal-treated.

Conclusion: Clinical suspicion of ENLs in any setting need further evaluation, to unmask underlying leprosy, hence a prompt dermatology referral is needed.

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Also, identifying leprosy-TB coinfection is as important for the management of this dual infection, as it is for the future considerations of drug resistance to this highly bactericidal agent – Rifampicin.

Household contact screening is an effective method for case detection in the leprosy elimination.

Keywords: Hansen's disease, Tuberculosis, Erythema Nodosum Leprosum, Contact Tracing, Rifampicin

#0877/ ILCABS116

NUTRITIONAL ASSESSMENT AND DIET PATTERN OF LEPROSY AFFECTED PATIENTS IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA

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Introduction: Leprosy patients are commonly affected with poor physical health due to inadequate diet with the literatures supporting it. The main aim of the study is to assess the nutritional status and dietary pattern of leprosy affected patients in comparison with general population based on haematological results.

Methods: A cross sectional descriptive study was carried out with 51 leprosy and 55 non-leprosy patients visiting at a tertiary care centre were recruited for the study. Demographic details, type of leprosy and presence of reactions and disabilities were recorded. The nutritional assessment and dietary intake includes (energy and protein balance) physical examination and anthropometric measurements and laboratory values such as haemoglobin, random blood sugar and glycosylated haemoglobin and serum creatinine.

Results: One hundred and six patients were recruited with a mean age of 54.3 (14.6) years. 71(67%) were males and 35 (33%) were females. Most patients (42%) were overweight and 13% were underweight. The findings revealed that under-nutrition (BMI < 18.5) was more common in people among male leprosy affected patients than in those without leprosy and is statistically significant (p=.005). Similarly, RBS measure is poor among leprosy male patients compared to non-leprosy male patients. Also leprosy affected patients in the younger age group were undernourished when compared to non-leprosy patients (p=0.005).

Conclusion: Leprosy affected patients attending hospital should be provided with proper counselling on nutritional and diet intake. Assessment on nutrition of leprosy affected patients should be done periodically.

Keywords: Nutrition, Diet, Leprosy

#0878/ ILCABS215

TRENDS, REFLECTIONS AND WAY FORWARD FOR MAKING RAJASTHAN "LEPROSY FREE" BY 2030

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Introduction: Rajasthan is one of the low endemic states as far as leprosy case incidence and prevalence is concerned. There has been continuous decline in Annual New Case Detection Rate and proportion of grade II disability among new cases.

Description: Total New cases reported decreased from 1106 to 858 during 2015-2016 to 2021-2022.

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This was seen in decrease in Annual New Case Detection Rate (ANCDR) from 1.48 to 1.02 during the same period.

Proportion of Child cases and Grade II also decreased from 1.7 to 1.3 and 6.06 to 1.4 respectively among new cases.

Way Forward for making Rajasthan leprosy free by 2030:

Categorisation of Districts into high, medium and low priority based on high ANCDR, high grade II rate, grade II proportion and high proportion of child cases.

Focussed approach for early case detection and treatment: Focussed approach to identify new cases through active case detection has been started.

Strengthening self-care initiative through hybrid models of physical demonstration and camps followed by periodic tele-counselling follow-up with support from NLR India Foundation in coordination with respective District team.

Migration tracking: An initiative has been started to follow-up patients reported in Jaipur telephonically and develop migrant lists and send to corresponding districts for effective follow-up.

Scaling up of chemo-prophylaxis: Since launch of leprosy post exposure prophylaxis, State has been striving to increase its reach to eligible contact.

Ensuring leprosy cured persons are linked to social benefit schemes like Leprosy pensions.

Consultation and collaboration with different programmes

Conclusion: It can be affirmed with confidence that amongst all prevailing challenges, strategic decision and coordinated efforts will bring substantial changes.

Keywords: New Case, Grade II, Proportion of child case, Leprosy free

#0879/ ILCABS302

DEVELOPMENT OF KNOWLEDGE, ATTITUDES, AND PRACTICES (KAP) MEASUREMENT TOOLS ON LEPROSY REACTIONS

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Introduction: Globally, leprosy reactions were found in approximately 20-50% of people affected by leprosy. Based on earlier studies, a lack of understanding and misperceptions about leprosy reactions were experienced by patients and health workers. The misperception may hinder health-seeking care behavior and increase the risk of permanent impairments among the affected individuals. Therefore, more understanding of the underlying factors of certain behavior is needed.

Objective: To develop an instrument to measure knowledge, attitudes, and practices (KAP) towards leprosy reactions for the individuals with leprosy, health workers, and general community by gaining insights from experts on what should be understood about leprosy reactions.

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Methods: A sequential exploratory design approach was employed for co-creating the KAP questionnaire. A Delphi panel was a panel of experts to gain consensus on the most important items to be included in the questionnaires and ensure their appropriateness. In total, 12 experts were interviewed and 25 global experts with a minimum of 3 years of experience in leprosy and/or leprosy reactions were recruited purposively and participated in two phases of a Delphi panel.

Expected Results: Three different KAP questionnaires for people affected by leprosy/leprosy reactions, healthcare workers, and the general community were developed to measure KAP of target group. As an iterative process, the items, number of items, and their sequences were generated and improved at each development stage.

Limitations: More involvement of people affected by leprosy reactions was needed as currently they were only involved in the interviews and pilot testing stage. The consistency and reliability of the questionnaire require further testing.

Conclusion: These newly developed KAP questionnaires are a good starting point to assess people's knowledge, attitudes, and practices on leprosy reactions. These instruments may be used by policymakers, researchers, health educators, and clinicians to create and evaluate social support

Keywords: Leprosy Reactions, Knowledge Attitude and Practice Questionnaire, Delphi Panel

#0880/ ILCABS319

COMPETENCY OF LEPROSY NURSE

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The purpose of study aims to describe competency of leprosy nurse, using Delphi technique. Participants were 20 leprosy experts including 4 leprologist, 3 chief nurses executive of leprosy 9 clinical nurses specialist of leprosy, 3 public health officers specialist of leprosy and 1 physiotherapist specialist of leprosy .The Delphi technique consisted of 3 steps : 1st step began with an open questions which all experts were asked to describe the competencies of leprosy nurses, 2nd step data from the first round were analyzed using content analysis for develop the rating scale questionnaire. All items in the questionnaire were ranked the level of competency by the prior panel of experts. In 3rd step, data were analyzed by using median and interquartile range to develop a new version of the questionnaire. The new questionnaire was sent to previous experts for confirming. Data were analyzed by using median and interquartile range to summarized the study. The competency of leprosy nurse were consisted of 5 domains as follow:

1. The screening in new case leprosy competency consists of 4 items.

2. The monitoring to detect disability in leprosy patient competency consists of 10 items.

3. The detection of disability and rehabilitation in leprosy patient competency consists of 13 items.

4. The education in leprosy patient and family competency consists of 4 items.

5. The consultation and encouragement in leprosy patient and family competency consists of 7 items.

Keywords: Competency, Leprosy nurse

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#0881/ ILCABS378

AN SDR-PEP IMPLEMENTATION DECISION SUPPORT TOOL

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Introduction: To reduce the transmission of Mycobacterium leprae, single-dose rifampicin (SDR) as post-exposure prophylaxis (PEP) for contacts of leprosy patients, is recommended. There are various SDR-PEP implementation approaches. A description of these approaches and criteria to select a suitable approach were needed.

Objectives: The study aimed to develop an evidence-informed decision tool to support the selection of an SDR-PEP implementation approach and to assess its usability.

Methods: The tool was developed in two phases. The first phase involved a literature review and expert interviews (n=13) to make a first draft tool with an overview of existing SDR-PEP approaches, their characteristics and basic requirements for the implementation of SDR-PEP.

In the second phase, intended users (n=14) without SDR-PEP implementation experience were interviewed to assess the usability and applicability of the tool. A final version of the tool was made after having discussed it in a focus group (n=6).

Results: The tool lists five main SDR-PEP implementation approaches. The levels of endemicity and stigma, and the accessibility of an area are used as main criteria to select an approach. For all approaches five basic requirements are relevant: stakeholder support; availability of medication; compliant health system; trained health staff; and health education. For some components of the tool there is insufficient scientific evidence, like cost-effectiveness of the approaches.

Limitations: The SDR-PEP implementation decision support tool was developed based on limited scientific evidence, further studies will lead to improving the tool.

Conclusion: An evidence-informed tool was developed to support selecting an implementation approach for SDR-PEP. It provides an overview of characteristics of five main approaches, five basic requirements and selection criteria. Additional studies, particularly health-economic studies, can increase the evidence base. The tool was also found to be useful for advocacy and training.

Keywords: Chemoprophylaxis, SDR-PEP, Rifampicin, Tool, Prevention, Implementation

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#0882/ ILCABS384

HEREDITARY MOTOR SENSORY NEUROPATHY – A MIMICKER OF LEPROSY

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Introduction: Hereditary motor sensory neuropathy (HMSN) or Charcot-Marie-Tooth Disease (CMTD), is a group of inherited, progressive, motor and sensory peripheral nerve disorders with demyelination, axonal degeneration, or both.

Case Report: 70 year male patient complaining of non-healing painless ulcer over left sole following trauma since 3 years, decreased sensations and deformities of upper and lower limbs since 30 years. Family history was negative for similar complaints, diabetes mellitus, and leprosy. Examination revealed an ulcer on the plantar aspect of left foot of size 3 cm × 2 cm, nontender. Glove and stocking hypoesthesia present. No hypopigmented hypoesthetic patches found. Motor power was normal and equal on both sides. Partial ulnar clawing of both hands present. Peripheral nerves were not thickened and not tender. Absent deep tendon reflexes with decreased plantar reflex ,muscle wasting of small muscles of hands and leg noted. Based on the clinical features leprosy, HMSN, diabetic foot ulcer were considered as differentials. On investigation, blood chemistry, blood sugar levels and hba1c were normal. Slit skin smear for acid fast bacilli was negative. Radiological evaluation revealed partial ulnar clawing of both hands, pes cavus deformity of both feet with partial resorption of terminal phalynx of little toes. Nerve conduction study revealed slowing of both sensory and motor conduction velocity. Electromyography(EMG) study showed chronic denervation suggesting a chronic process of demyelination.

Conclusion: Though HMSN is not common, it should not be disregarded as it mimics leprosy.

Keywords: Hereditary motor sensory neuropathy, Leprosy, Glove and stocking hypoesthesia

#0883/ ILCABS410

WHEN MYCOBACTERIAS MEET AND GREET!!!-LEPROSY WITH TUBERCULOSIS-A SERIES OF 4 CASES

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Introduction: Tuberculosis and leprosy are two mycobacterial infections endemic in India.The occurrence of leprosy and pulmonary TB coinfection first time reported by Relvich in 1954,and Ganapati et al later in 1976 described leprosy with lupus vulgaris.We report 4 cases of leprosy with tuberculosis presented to our OPD.

Case Report

Case 1

36 year old woman proven case of lepromatous leprosy presented with multiple ulcerations over the right breast for 1 month.The ulcers were painless,but with scant discharge.CBNAAT and culture from the discharge

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yielded positive results for tuberculosis.A diagnosis of lepromatous leprosy with tuberculous gumma was made and antitubercular treatment (ATT) started accordingly.

Case 2

45 year old man proven case of BT Hansen presented with painless crusted plaque over neck since 4 months. Mantoux test was positive.Skin biopsy suggested lupus vulgaris.A diagnosis of BT Hansen with lupus vulgaris was made and ATT was started.

Case 3

42 year old woman proven case of pulmonary tuberculosis was referred from dept of pulmonary medicine developed hypopigmented anaesthetic skin lesions over dorsum of left hand.Skin biopsy was suggestive of BT Hansen.A diagnosis of pulmonary tuberculosis with BT Hansen was made and MBMDT was started after workup.

Case 4

17 year old boy known case of BT Hansen presented with painless crusted plaque over buttocks since 4 months.Skin biopsy revealed changes suggestive of lupus vulgaris.A diagnosis of BT Hansen with lupus vulgaris was made and treatment was started accordingly.

Conclusion: Occurrence of two mycobacterial infections tuberculosis and leprosy in a single immunocompetent person is very unusual even in endemic countries like India. Whether both infections mutually aid in disease pathogenesis is still not clear.Clinicians should be aware of such rare instances to avoid diagnostic dilemma.Thorough clinical examination,in corroboration with proper diagnostic tests can aid in diagnosis.

Keywords: Leprosy, Tuberculosis, Co-infection

#0884/ ILCABS431

EVALUATION OF ONLINE TRAINING COURSES CONDUCTED IN THE LEPROSY MISSION TRUST INDIA

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Introduction: The current availability and accessibility nature of the internet technology have generated a surge in the necessity for online learning. The online learning was quickly swapped into the training methods against face-to-face (in-person) learning programs during pandemic due to COVID-19. Replacement of online learning was significantly obvious in every stream of education including orientation programs conducted in Leprosy & Leprosy related disabilities. The Leprosy Mission Trust India (TLMTI), as part of its services, offered online programs to the various medical and nonmedical categories of participants through Building Leprosy Competencies (BLC) project during pandemic (2020-2021).

Aim: This paper aims to evaluate participants enrolled in online programs could benefit from online courses and observes the potential challenges and drawbacks of online learning method. Methodology: This study, based on the participants being surveyed, focused on trainees who were enrolled in online orientation program conducted by BLC-TLMTI between 2020-2021. The participants enrolled in these programs were sent an anonymous survey that asked them to grade and answer a few open-ended questions pertaining to

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various components of online programs like environment, and structure of the course in terms of benefits, drawbacks, and strategies.

Results: Demographic data, scores from survey (open-ended questions & grades of various components) of online programs were analysed. The results of the analysed data showed the evidence that the online learning was useful in trainees routine clinical practice and the care to the leprosy affected.

Conclusion: This study has provided evidence of the impact of online orientation courses for participants enrolled. It has confirmed that the structure of online learning expanded the participants use of technology and surpassed the technology used in the institution traditional classroom settings.

Keywords: Leprosy, Online Orientation, Learning, Effectiveness, TLMTI

#0885/ ILCABS479

INNOVATIVE STRATEGY TO DETECT NEW CASES OF LEPROSY IN THE CONTEXT OF COVID-19 PANDEMICS

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Introduction: COVID-19 pandemics had a strong impact on health services, reducing access to diagnosis of many medical conditions, especially of neglected diseases. Therefore, usual actions for active search of leprosy, such as contact tracing and educational campaigns were practically interrupted, which increased the risk of late diagnosis and triggered the search for innovative actions to carry out these activities.

Objective: We aimed to evaluate the use of telemedicine as a tool for screening patients with suspected lesions of leprosy, reducing the number of people who needed to go personally to health units for evaluation.

Material and methods: In January 2021, as part of preparatory activities for the World Leprosy Day, online training on signs and symptoms of the leprosy was conducted for all doctors and nurses working at the primary health care from a hyperendemic municipality. Additionally, a WhatsApp group was created with all participants, who used this tool to send pictures of suspected lesions to be analysed by a leprologist.

Results: During 2021, 62 patients were discussed virtually, of which 15 had leprosy diagnosis confirmed in face-to-face evaluations in a municipal leprosy reference center.

Limitations: The research included only patients with dermatological lesions, limiting the discussion of purely neural leprosy.

Conclusions: The strategy proved to be effective, not only in the context of the covid-19 pandemic, but as an initiative to be definitively implemented in leprosy endemic areas

Keywords: Leprosy, COVID-19, Epidemiology

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#0886/ ILCABS505

CONTINUED MEDICAL EDUCATION: LEARNINGS DURING PANDEMIC

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Background: The Leprosy Mission Trust India has been providing training to build and retain leprosy expertise for healthcare professionals such as specialist doctors, medical officers, physiotherapists, occupational therapists, laboratory technicians, counsellors, and para-medical workers in suspecting, diagnosing, and managing leprosy and its complications. To build and retain the dwindling leprosy expertise nationally and globally, the building leprosy competence project was conceived and implemented in 2020. With the advent of the pandemic, a rethinking of the delivery of activities was done and thus an E-learning culture was introduced in TLMTI.

Objective: This paper discusses the methods adopted, and the learnings in implementing the e learning to negotiate the challenges of the pandemic. We will report on key features of online learning, and its prerequisites along with the advantages and challenges faced.

Methods: Pre & Post test

Results: A total of 957 people working in the leprosy sector were reached through training out of which 37% were from the govt and other NGOs. The topics of training raned from clinical leprosy to management of disability, counselling and mental health and other related topics. Pre and post-test knowledge assessment was done and there was an increase of knowledge by 30 %. Online learning good practices were documented, and challenges listed to devise ways to overcome them.

Limitation: Hands on Practise

Conclusion: Online learning is leveraged on the progress in technology. However, there are hands on, practical training that is missed on the virtual interface. Blended learning is the future of education. Virtual learning makes education accessible and relatable for people of different age groups from various locations, making it economical and easy. Motivation and self-learning are the key.

Keywords: Building Leprosy Competency, Covid-19 pandemic, Health Care Professionals, Online E-Learning, Pre & Post test, Blended learning

#0887/ ILCABS511

INTEGRATION OF SDR-PEP IN THE MOZAMBICAN NATIONAL LEPROSY CONTROL PROGRAM – CHALLENGES AND SUCCESSES

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Introduction: When administered to screened leprosy patients' contacts, post-exposure prophylaxis with single-dose rifampicin (SDR-PEP) reduces the risk of developing leprosy by 57%. In 2018, SDR-PEP was adopted in the World Health Organization (WHO) leprosy guidelines. The Ready4PEP project aims to prepare Mozambique to put this WHO guideline into practice: using SDR-PEP as strategy to stop leprosy

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transmission in the communities of four provinces and supporting the Ministry of Health (MoH) in integrating SDR-PEP in the National Leprosy Control Program (NLCP).

Objectives: We aim to share the steps taken, challenges faced, and successes experienced during the integration process of SDR-PEP in the NLCP.

Material and Methods: Ready4PEP was presented to the MoH NLCP, followed by a training to NLCP Provincial and District Supervisors. Authorization to import rifampicin into Mozambique was given by the MoH. Ethical approval was needed and obtained to proceed project activities. Standard Operating Procedures (SOPs) on contact tracing and SDR-PEP administration were developed. A contact registration system was set-up.

Results: Health professionals of targeted periphery health facilities received training. In March 2022 the project started distributing SDR-PEP in 3 districts in Mozambique, additional districts will follow. Over 1484 contacts were screened and 1393 received SDR-PEP by May 24, 2022

Limitation: SDR-PEP for leprosy patients' contacts is not yet registered as official strategy to stop Mycobacterium leprae transmission in Mozambique and SDR-PEP has not been used outside research settings. Therefore, implementation projects on SDR-PEP, like Ready4PEP, must follow similar guidelines as a clinical trial, including National Committee of Ethics approval, which delayed the project start. The COVID-19 pandemic and international rifampicin shortages further delayed project activities.

Conclusion: Ready4PEP aims to show the feasibility of including SDR-PEP into routine leprosy control services in Mozambique, which will hopefully lead to the update of SDR-PEP into national guidelines to halt leprosy transmission.

Keywords: Leprosy, SDR-PEP, Chemoprophylaxis, Mozambique, Ready4PEP, Transmission

#0888/ ILCABS525

CONTINUED MEDICAL EDUCATION: LEARNINGS DURING PANDEMIC

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Introduction: The Leprosy Mission Trust India has been providing training to build and retain leprosy expertise for healthcare professionals such as specialist doctors, medical officers, physiotherapists, occupational therapists, laboratory technicians, counsellors, and para-medical workers in suspecting, diagnosing, and managing leprosy and its complications. To build and retain the dwindling leprosy expertise nationally and globally, the building leprosy competence project was conceived and implemented in 2020. With the advent of the pandemic, a rethinking of the delivery of activities was done and thus an E-learning culture was introduced in TLMTI.

Materials & Methods: Online E-Learning classes were organized for Health Care Professionals and Pre and Post-test knowledge assessment was done.

Objective: This paper discusses the methods adopted, and the learnings in implementing the e learning to negotiate the challenges of the pandemic. We will report on key features of online learning, and its prerequisites along with the advantages and challenges faced.

Results: A total of 957 people working in the leprosy sector were reached through training out of which 37% were from the govt and other NGOs. The topics of training raned from clinical leprosy to management of disability, counselling and mental health and other related topics. Pre and post-test knowledge assessment

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was done and there was an increase of knowledge by 30 %. Online learning good practices were documented, and challenges listed to devise ways to overcome them.

Limitation: Demonstration cannot replace seeing and examining patients live

Conclusion: Online learning is leveraged on the progress in technology. However, there are hands on, practical training that is missed on the virtual interface. Blended learning is the future of education. Virtual learning makes education accessible

Keywords: Building Leprosy Competency, Covid-19 pandemic, Health Care Professionals, Online E-Learning, Pre & Post test, Advantages & Disadvantages

#0889/ ILCABS547

ANALYZING THE IMPLEMENTATION OF POLICY RELATED TO THAI LEPROSY STRATEGY : THE CASE STUDY OF LEPROSY PROGRAMME PERFORMANCE IN ACCORDANCE WITH RELATED INDICATORS OF RAJ PRACHA SAMASAI INSTITUTE, DEPARTMENT OF DISEASE CONTROL DURING 2016-2020

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This health policy research was conducted to investigate the achievement of implementing Thai leprosy strategic plan into practice in accordance with operational indicators of Raj Pracha Samasai Institute, Department of Disease Control during 2016- 2020. Policy-cycle conceptual framework was used to analyze the implementation of policy into practice and the evaluation of policy. General model was used to analyze success and failure factors.

Study populations were literatures such as concept, theory, related studies, and documents related to the implementation of strategic plan into practice during 2016-2020; and purposive-sampling key informants who are 15 former. Data collecting forms were once used in in-depth interviewing.Association between facts and continuing data overtime was focused in content analysis process. Analysis results were presented in absolute numbers, percentage, proportion and prevalence rate.

The study results shown that non-achievement indicators were 1) the number of new cases detected in 2016 and 2019 2) the number of districts conducted new case detection in 2018 and 2019 and 3) percentage of new cases with duration between an early-signs appearance and diagnosis or treatment less than 12 months in 2017 and 2019.

Failure factors were politic and attitude of policy implementors. Success factors were specific-understandable policy and implementing measures, effective-coverage communication and coordination process, cooperation of related officials and capabilities of implementing organizations, non-complicated administrative process, capability infrastructures and personnel at all levels, personnel motivation, and systematic-sufficient distribution of resources for policy implementation.

Suggestions: Leprosy strategic plan should be formulated in long duration (2021-2030) in accordance with WHO moving towards long term vision as a goal by integrating leprosy plan into local general disease plan,

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strengthening case detection, addressing and preventing disability, and combating stigma and protecting human rights.

Keywords: Policy analysis, Policy implementation, Policy success, Leprosy

#0890/ ILCABS565

I LOVE ME, I TAKE CARE OF MYSELF - HEALTH HANDBOOK OF PERSON AFFECTED BY HANSEN'S DISEASE WITH A STRATEGY OF COMMUNICATION AND HEALTH CARE.

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Introduction: Hansen's disease is a chronic disease that has a high disabling power and is inserted in a social context of discrimination built throughout history. The disease, for having a long treatment, requires permanent care due to the treatment of physical disabilities and disease reactions. Therefore, care management strategies combined with health communication strategies are necessary to promote quality of life for the person. Recognizing the importance of these strategies for the surveillance and control of Hansen's disease, the Ministry of Health of the Government produced in 2021 the Health Handbook of Persons Affected by Hansen's disease "I love me, I take care of myself", a printed material intended for people in treatment for the disease.

Case description: The purpose of the material is to allow the recording of the most important data related to the treatment and follow-up of the patient and their family, for example supervised dose scheduling and conduct related to household contacts it also has chapters that provide information on signs and symptoms of the disease, transmission, devices to face stigma and discrimination in Hansen's disease, promotion of self-care and health in general in addition to providing guidance on issues related to assistance and social security, and registration of discriminatory practices. The Ministry of Health printed and distributed copies to the units of the federation of the country.

Conclusion: The perspective is that the material will be available in health services, preferably in Primary Health Care (APS) as a potential tool that allows the integration between the professionals of the health network about the current situation of the patient, facilitating longitudinal care and promoting patient's access to important information about their treatment and follow-up. Therefore, it is known that it is an important tool for the comprehensive care of people affected by the disease.

Keywords: Hansen's disease ; Communication; Health Care; Primary Health Care

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#0891/ ILCABS617

DERMATOSCOPY IN LEPROSY AND IT'S CLINICOHISTOPATHOLOGICAL CORRELATION

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Introduction: Leprosy is a chronic granulomatous infection caused by Mycobacterium leprae having varied clinical presentations.Dermatoscopy as a non-invasive,bedside tool is used for multiple dermatological conditions and so here.

Aims & Objectives: To describe the dermatoscopic features of the leprosy lesions of entire spectrum and to correlate with clinical and histopathological findings in the patients attending our tertiary care centre.

Material and Methods: This is a prospective observational study of 100 leprosy patients over a period of 1 year. The most prominent lesions were photographed and evaluated by dermatoscopy, slit skin smear and histopathology.

Results and discussion: A total of 100 patients of leprosy were evaluated comprising of tuberculoid leprosy,borderline tuberculoid,borderline lepromatous,lepromatous leprosy,Histoid leprosy,type 1 and 2 reactions.The dermatoscopic features observed were yellowish orange areas and linear,branching,crown vessels correlating with the presence of dermal granulomas and dilated vessels respesctively. Altered pigment network and white chrysalis like areas due to decreased basal layer melanin and presence of dermal collagen respectively. Decrease in white dots corresponding to diminished hair follicles and eccrine duct openings due to periappendageal granulomas was observed in tuberculoid spectrum.Scaling and follicular plugging due to hyperkeratosis were additionally found in type 1 reaction.ENL lesions showed increased erythema with large,dilated vessels due to acute inflammation.

Conclusion: The most consistent dermatoscopic findings of leprosy lesions were Yellowish-orange areas and vascular structures followed by altered pigment network and paucity of appendageal structures.Dermatoscopy in our study has been used as a non-invasive tool in aiding our clinical diagnosis.

Keywords: Dermatoscopy, Yellowish orange areas, Diminished white dots

#0892/ ILCABS665

DERMOSCOPY OF LEPROSY AND LEPRA REACTIONS

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Introduction: Leprosy is a persistent granulomatous infection with a wide range of clinical manifestations that make diagnosis difficult. Dermoscopy has recently gained popularity as a non-invasive, quick method of evaluating a variety of dermatoses.

Objectives: We evaluated the dermoscopic findings of the entire spectrum of leprosy and correlated them with clinical and histopathological features.

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Material and Methods: A prospective observational study was done on 50 consecutive patients with untreated leprosy attending OPD over a period of 1 year. The most representative lesion was photographed, evaluated with dermoscopy, and later biopsied.

Results: The findings revealed a clear link between dermatoscopic and histological findings. Dermal granuloma was depicted by yellowish-orange structureless regions throughout the spectrum. Focal vascular structures such as linear branched, and crown of vessels were also detected as a result of granuloma pressure forcing the dilated vessels higher. In type 1 reactions, follicular plugging and scaling were seen.

Leprosy was distinguished from other granulomatous dermatoses by the absence of eccrine duct opening and hair follicle loss (due to peri appendageal granuloma and destruction).

The presence of a diffuse dull red background with yellowish structureless areas (attributable to dermal granuloma) encircled by a rim of hyperpigmentation was observed in the majority of cases of nodular lepromatous leprosy (LL), whereas in cases of histoid Hansen central white shiny area (corresponding to dermal granuloma) was observed.

Limitation: small sample size and exclusion of other dermatoses mimicked leprosy.

Conclusion: Dermoscopy, as a non-invasive handy tool can aid in differentiating leprosy from other dermatoses by the absence or diminished eccrine duct openings, as well as distinguishing nodular LL from histoid Hansen.

Keywords: Linear vessels, Yellowish orange structureless areas, Crown vessels, Nodular LL, Histoid hansen, Eccrine glands

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#0893/ ILCABS679

CLINICAL AND DEMOGRAPHICAL ASPECTS OF LEPROSY REACTIONS IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL FROM SOUTH TAMILNADU, INDIA - A RETROSPECTIVE STUDY

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Introduction: Leprosy reactions cause nerve function impairment leading to permanent disability and even death. In order to improve strategies for management of reactions its clinical pattern and demographic profile needs to be studied.

Objectives: To describe the clinical and demographical aspects of leprosy reactions in patients attending tertiary care hospital.

Material & Methods: In a retrospective study the medical records of Leprosy patients registered at the leprosy clinic of the department of DVL , ****** Medical college between January 2016 to December 2021 were retrieved. 151 patients were included. The clinical and demographical details of them were analysed as per case definitions and WHO standard of treatment.

Results: Of the 151 cases analysed 109 were male , 35 female and 7 were children(<14 years). BTHD was the commonest (32.4%). Reaction was documented in 64 patients (42.4%). Type 1 reaction was seen in 39 patients (60.9%) and Type 2 reaction in 25 patients (39.1%). Type 1 reaction was commonest in BTHD

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(44%). Type 2 reaction was commonest in LLHD (64%).Forty cases (62.5%) presented with reaction in their first visit. Mean duration to develop reaction while on MDT was 5 months and Post MDT completion was 12.5 months. 11 cases had recurrent reaction of which 10 developed ENL and one developed Type 1 reaction.Thirty one cases (48.4%) had both cutaneous and neural involvement during reaction. Erythematous plaques - commonest cutaneous manifestation. Ulnar nerve - commonest nerve involved in neuritis. One BLHD patient succumbed to Necrotic ENL with sepsis.

Limitations: Some incomplete data and lack of long term follow up

Conclusion: Type 1 reaction was commonest in BTHD spectrum .Type 2 reaction was commonest in LLHD spectrum .No gender predilection was noted. Most patients presented with reaction in their first visit. Mortality and morbidity was high with type 2 reaction.

Keywords: Type 1 reaction, Type 2 reaction, ENL, BTHD, BLHD, LLHD

#0894/ ILCABS703

FAMILIAL CASES OF CHILDHOOD LEPROSY : A CASE REPORT

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Introduction: Children are the most susceptible group to infection with mycobacterium leprae because of their naive immunity and close intrafamilial contact . Familial contacts play significant role in development of childhood leprosy. Leprosy in children epidemiologically, is an index of transmission of disease in the population . It is important to note that early diagnosis and treatment is necessary to reduce psychosocial and economic burden due to childhood leprosy.

Case description: Here we report a case of childhood leprosy occuring concurrently in all three siblings in a family residents of bihar (currently residing in jammu) and presented to dermatology opd at same time with different clinical features . There was history of MDT MB intake in mother .Eldest sibling 14 year old female presented with multiple asymptomatic normoesthetic erythematous plaques and papules with shiny ,smooth surface over face , b/l arms and left knee since 2 week and 2 younger siblings 7 year old male and 5 year old female both presented with multiple hypoesthetic hypopigmented patches with dry surface over face ,b/l arms and thigh since 2-3week. No abnormality detected on sensory and motor examination . Systemic complaints ,signs of reaction and deformities were absent in all three siblings. Slit smear examination and histopathological examination were done . Eldest sibling was diagnosed as a case of leprsoy BT ->BL pole and younger two siblings were diagnosed as TT->bT pole. Mdt – MB was started in all three patient.

Conclusion: In the post elimination era, incidence of childhood leprosy indicates ongoing transmission in the community.Risk of developing leprosy in a children is nine times when there is a familial contact and attack rate reportedly increases when the index case is mother.

Keywords: Childhood leprosy, Familial contact

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#0895/ ILCABS731

COLLABORATIVE ACTION - TO ERADICATE LEPROSY AND ENSURE INCLUSION OF PEOPLE AFFECTED BY LEPROSY, IN INDIA.

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Introduction: Today the priorities of the National Leprosy Eradication Programme must be strengthened by collaborative action.

This calls for a consortium approach to enhance coordination; and mobilise and facilitate raising of resources to eradicate leprosy and prevent its debilitating consequences. This requires greater involvement of civil society organisations, public and people affected by leprosy together with the government.

This approach is to synchronize decades of knowledge, expertise and experience, to reach still remaining vulnerable communities.

Description of the issue

In 2005 leprosy elimination was declared by the government - as no more a public health problem. This resulted in: a) curtailing domestic services and global resources; b) scarcity of trained leprosy workers; and c) Inadequate surveillance, research & innovation and lack of technology use.

This has resulted in continued occurrence of new cases and daily struggle for a life of dignity for those tragically affected by leprosy.

A fresh Approach

In response to this issue, GoodBye Leprosy Trust (GBL) has been formed.

In 2022, the core member organisations, which have formed GBL: ALERT-INDIA (Western India); AIFO (South and North-East India); and FAIRMED (Central and South India). It is expected that membership will expand by 2025 further strengthened by associate organisations.

There is a special focus to begin with on active case detection and surveillance using technology; and cadre training to the extent of supporting and promoting pilot programmes by members in leprosy endemic geographies, which generate knowledge (models) and data, which can influence policy and programmes in India.

Conclusion: With this focused consortium approach: engaging public, people affected with greater involvement of civil society and strengthening government efforts - GBL aims by 2030 to make a significant contribution by revitalizing India's approach to stopping the recurrence of leprosy and reducing its debilitating consequences.

Keywords: Collaboration, Fresh approach, Resource Mobilisation,

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#0896/ ILCABS764

THE DEVELOPMENT OF NATIONAL LEPROSY SPECIALIZED FACILITY TO PROVIDE COMPREHENSIVE CARE

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In the light of leprosy low endemic situation; it is expected that leprosy related comprehensive care provided by national leprosy specialized facility would contribute to the reduction of delayed in diagnosis, the proportion of G2D among new cases and related stigma; which would lead to zero leprosy in Thailand.

To develop national leprosy specialized facility in providing leprosy related comprehensive care.

The study was divided into 4 phases:(i) situation analysis;(ii) drafting tentative service system of comprehensive care;(iii) implementing pilot project; (iv) monitoring and evaluation. The number of 32 study subjects consisted of dermatologists, ophthalmologists, orthopedic and cosmetic surgeons, otolaryngologist, physiatrists, physicians, dentists, registered nurses, public health technical officers, medical technologists, pharmacists, social workers, physiologists, prosthetists and nutritionists. Frequency, percentage was used in quantitative analysis. Triangular technique and content analysis were used to validate and analyze qualitative data.

Developed system was linked with sub-national leprosy specialized facilities all over the country. All related personnel (100%) were able to perform in line with comprehensive care system of national leprosy specialized facility while 90% and 85% of them were respectively very satisfied with the system and accepted the system. Customers were satisfied with the developed system at 85%

It is in the process of external accreditation.

Whereas 100% of related personnel were able to perform in line with the system, most of customers were satisfied with the system which means only few of them were very satisfied. Further investigation should be conducted to find any gaps to be addressed in order to raise the customer satisfactory level.

Keywords: National leprosy specialized facility, Leprosy related comprehensive care, Development of leprosy service

#0897/ ILCABS765

LEPROSY AS NEGLECTED TROPICAL DISEASE AND CHALLENGES ASSOCIATED WITH IT

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Introduction: Neglected tropical diseases (NTDs) are diseases associated with poverty and share great social and economic burden. They lack importance in health programmes, there is research lacunae and have inadequate surveillance. As per WHO there are more than 20 diseases as NTDs and leprosy is one of them, grouped under skin NTDs. These NTDs, are grouped together towards a common goal of their elimination. Will leprosy get its share of attention, is a matter of concern.

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Issue: Although India has eliminated Leprosy as a public health problem, with prevalence rate of 0.4 per 10,000 population in the country it is among the "global priority countries" that contribute to majority of world leprosy cases. Leprosy as part of neglected tropical diseases, becomes more neglected when it comes under the umbrella coverage of NTDs. WHO has recently launched framework for integrated control of skin NTDs. Leprosy being a part of it will enjoy few benefits of integrated management like sharing manpower and recourses. At the same time its own identity and point of focus may get blurred in the integration, recourses once assigned for dedicated leprosy work will be diverted, quality of work done by manpower sharing may be compromised. We would like to present the hurdles and advantages associated with leprosy being part of integrated approach for NTDs.

Conclusion: There are various challenges one may need to address while considering leprosy as a part of NTDs. In country like India where it continues to be prevalent, causing morbidity, socio-economic burden, integration may actually dilute the leprosy control work. Leprosy should not be a neglected disease in India, we are moving forward towards its elimination and all the efforts from us should be sustained and vigorous in this phase of our fight. The biggest worry with integration with other NTD is loss of focus specially in countries where its prevalence is high.

Keywords: Leprosy, Neglected Tropical Disease, Integration

#0898/ ILCABS791

MULTICENTRE EVALUATION BY A QUESTIONNAIRE TO ASSESS ABILITY IN THE DIAGNOSIS OF LEPROSY BY BASIC HEALTH WORKER

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Introduction: In most leprosy control programmes case finding is undertaken by paramedical or basic health workers by population screening.The diagnosis of leprosy in the field is based on illiciting clinical signs and symptoms. Case finding in leprosy control programmes is dependent on the ability of field staff in the diagnosis of leprosy. However assessment of their ability in the diagnosis of leprosy in field circumstances is difficult and time consuming. The clinical diagnosis made by the paramedical staff is then usually confirmed by a more senior supervisor or medical officer before active chemotherapy is initiated.

Objective: The present study is undertaken to determine their ability in the diagnosis of leprosy in field circumstances by a simple questionnaire to assess the ability to interpret clinical findings in the diagnosis of leprosy is evaluated.

Materials: In this study field workers and medical officers of different grades and differing experience from five districts of Telangana state, in India were included.

Methods: Thirty case histories of typical problems encountered in case detection in a leprosy elimination programme were prepared. These thirty were chosen to represent common problems and are therefore not necessarily typical of all suspected cases. Each participant in this study reads each history and then writes down his diagnosis as one of three categories, affected, not affected or suspected, as is the standard method in population screening.

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By this method of simple questionnaire the ability of leprosy control programme staff to interpret clinical findings in the diagnosis of leprosy is evaluated.

Conclusion: The use of case histories is a useful educational tool; it can also be used to identify individual members with major difficulties in the diagnosis of leprosy and to identifying particular cases which present more general diagnostic problems and also to know further their training needs.

Keywords: Training, Knowledge

#0899/ ILCABS803

DERMOSCOPIC FEATURES IN LEPROSY : AN OBSERVATION.

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Introduction: Leprosy is a chronic granulomatous infection with varied clinical presentations. Apart from the clinical clues, the histopathological features are of utmost importance in the diagnosis. Dermoscopy is a noninvasive tool that allows magnified observation of the skin with the visualization of morphologic features that are invisible to the unaided eye. Use of Dermoscopy to understand different patterns in cutaneous lesions of Leprosy would aid in the clinical diagnosis of the condition.

Objectives: To describe the dermoscopic features of various types of cutaneous lesions in leprosy.

Materials/methods: An observational study of patients with leprosy categorized as per Ridley-Jopling classification based on clinical, slit skin smear and histopathological findings. Dermoscopical evaluation was done using Dermlite4 Gen3 under polarised mode, for the most representative lesion and features were noted.

Results: Twelve biopsy proven Leprosy patients were included in the study. Of 12 patients, 2 cases of tuberculoid leprosy, 2 cases of borderline tuberculoid (one with type 1 reaction), 2 cases of borderline lepromatous (one with type 1 reaction), 6 cases of lepromatous leprosy (one each with type 1 and 2 reaction). The dermatoscopic features observed in tuberculoid and borderline tuberculoid leprosy were broken pigmentary network, white areas, lack of appendageal openings. Borderline lepromatous leprosy showing yellowish orange areas, scaling, diminished appendageal structures. Lepromatous leprosy showing majorly yellowish-orange areas, increased pigment network, white scaling, diminished appendageal structures, linear branching vessels. Vascular changes were seen in reactional states.

Limitations: Small sample size

Conclusion: Understanding the dermoscopic patterns in the varied presentation of Leprosy lesions would aid in the clinical diagnosis. Yellowish orange areas suggestive of granulomatous change and appendageal loss are some of the features observed. The co-relation of dermoscopic features with histopathological findings would help in using this noninvasive tool more often in diagnosing Leprosy.

Keywords: Dermoscopy, Leprosy, Dermoscopic features in leprosy

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#0900/ ILCABS814

THE NLR-SKINAPP VALIDATION STUDY IN ETHIOPIA AND TANZANIA

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Introduction: Given the high prevalence of skin diseases and limited dermatological knowledge among frontline health workers (FHWs) in rural areas in countries like Tanzania and Ethiopia, NLR developed the NLR-SkinApp: a mobile application that supports FHWs to diagnose and treat dermatological patients.

Objectives: The aim of this study was to investigate the diagnostic accuracy of the NLR-SkinApp, when used by FHWs.

Methods: A cross-sectional study was conducted in Ethiopia and Tanzania, 2018-2019. Patients with skin diseases were seen by two FHWs using the NLR-SkinApp and two dermatologists as reference standard. Diagnostic accuracy was measured as sensitivity, specificity and inter-rater reliability.

Results: 443 dermatological patients were included. Five (categories of) skin diseases reached the sample size (>=27): eczema, tinea capitis/corporis, acne, HIV/AIDS-related skin diseases and skin-related neglected tropical diseases (NTDs). The sensitivity of the NLR-SkinApp when used by FHWs in determining the correct diagnosis ranged from 23% (CI:16.5-30.6%) for HIV/AIDS-related skin diseases to 76.9% (CI:70.6-82.4%) for eczema and the specificity from 69.6% (CI:66.0-73.0%) for eczema to 99.3% (CI:98.4-99.7) for acne, respectively. Out of the 886 management advices given by both FHWs, 486 (54.8%) were incorrect, of which 10 (2.1%) management advices had potential severe consequences. The inter-rater reliability among the FHWs showed 58% agreement and among the dermatologists 96%.

Limitations: The study did not compare FHWs with and without the use of the NLR-SkinApp, four FHWs were involved and the patient sample size was small.

Conclusion: The NLR-SkinApp diagnosed 45.2% of the patients accurately when used by FHWs. There is scope to further improve the diagnostic support of the NLR SkinApp by refining the content, specifically the built-in decision tree and adding diseases. Further studies with a larger sample size and FHW control group are needed to better understand the added value of the NLR-SkinApp to diagnose and treat skin diseases.

Keywords: NTDs, MHealth, Skin diseases, Dermatology, Mobile application, Diagnosis

#0901/ ILCABS819

A TIME-MOTION STUDY BEFORE IMPLEMENTATION OF EASYCARE HMSTM AT LALGADH LEPROSY HOSPITAL AND SERVICES CENTRE, NEPAL

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Introduction: Pre and post - time-motion studies were proposed to adequately demonstrate the operational effectiveness of EasyCare HMSTM at Lalgadh Leprosy Hospital and Services Centre (LLHSC). This is a

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before-EasyCare implementation time-motion study. The results of this study sat the baseline data to be compared with a post-EasyCare implementation time-motion study, a year later in November 2021.

Methodology: This study is a randomized quantitative direct observational, cross-sectional study conducted from November 17 to December 8, 2020, in which patient waiting time and patient service times were recorded at each OPD service station (registration, clinical consultation, billing, laboratory, X-ray, and pharmacy) . Likewise, 2-staff from each station were observed and their patient management time recorded. The total number of patients and staff observed and timed were 39 and 17 respectively.

Results: The findings revealed that, on average, a patient spent nearly 53 minutes in the OPD from its arrival to exit. The average wait time a day was 28 minutes. The major reason for this prolonged waiting time was the wait time for medical consultation, which was 17 min, and almost 19 min for laboratory.

Staff time observation explored that (in hrs: mm) 1:30

Keywords: EasyCare, Implementation, EMR, LLHSC, Time-Motion, Study

#0902/ ILCABS826

RENAL AMYLOIDOSIS: A RARE COMPLICATION OF LEPROMATOUS LEPROSY

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Introduction: Renal involvement occurs throughout the spectrum of Leprosy. It is more often seen in patients of Lepromatous Leprosy, especially those with history of frequent attacks of Type 2 Lepra reaction. Renal Amyloidosis as a part of Systemic Amyloidosis is very rare complication of leprosy which we are reporting here in our CASE.

Case Report: A 65-year old, Normotensive male patient; known case of Lepromatous Leprosy- Defaulter to Leprosy Treatment- came to the skin department with complains of swelling of legs, nausea, vomiting and generalized weakness.

On examination patient had generalized oedema and pedal oedema with glove and stocking anaesthesia, diffuse infiltration of skin along with papular lesions s/o Histoid Leprosy and Leonine face. Extensive Purpuras were noted on extremities. Patient also had Macroglossia. Patient had been diagnosed as Lepromatous Leprosy after clinical and histopathological correlation 1 year ago. Patient was started on multi-bacillary multi-drug therapy(MB-MDT) pack which he stopped after 6 months on his own. The Skin biopsy showed changes of Lepromatous Leprosy with 6+ Bacteriological Index. S. Proteins were normal and renal function tests were altered.

Consultation with Nephrologist raised a possibility of Renal Amyloidosis and patient was further investigated regarding the same. Fat biopsy from the iliac crest confirmed the diagnosis of Systemic Amyloidosis. Patient was advised further follow up with nephrologist.

Discussion and Conclusion: This case is presented because of rare reports of Amyloidosis in India even though leprosy is still highly prevalent in many parts of India. Though rare this complication; should always be kept in mind while dealing with Leprosy patients presenting with Renal involvement.

Keywords: Lepromatous Leprosy, Renal Amyloidosis, Nephrotic Syndrome, Macroglossia, Extensive Purpura

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#0903/ ILCABS888

INTERESTING CASE OF TINEA VERSICOLOR MIMICKING HANSENS

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Introduction: Leprosy has broad spectrum of clinical presentations, ranging from hypopigmented macules/patches to plaques and nodules. The differential diagnosis of hypopigmented lesions in leprosy are multiple and include tinea versicolor (TV),vitiligo, idiopathic guttate hypomelanosis, pityriasis alba, post-inflammatory hypopigmentation, hypopigmented mycosis fungoides. Distinguishing TV from leprosy solely on the basis of clinical examination may be problematic because both conditions can present as symmetrical coalescing hypopigmented macules and patches. Hence histopathological confirmation helps arrive at a correct diagnosis. Highlighting one interesting case of TV mimicking Hansens.

Case Report

A 60/M presented with tingling sensation of B/L hands and feet since 1 month. He had clawing of little finger of right hand after road traffic accident. He had no history of reduced sensation over hands/feet, unnoticed trauma, slippage of chappals or cotton wool feel of ground.There was no family history s/o Hansens. He had not taken treatment for above complaints.

Cutaneous examination revealed multiple, well defined, hypopigmented, irregular to round to linear macules and patches ranging from 1x1 cm to 4x5 cm with relatively normal overlying surface over nape of neck,right upper chest, right lower abdomen and right lower back.Sensations were intact on lesions and elsewhere. Right ulnar nerve was thickened. There was no trophic ulcer.

Routine blood investigations were normal.

Histopathology from hypopigmented patch on right lower back showed basket weave hyperkeratosis, with multiple septate hyphae and round budding yeast, focal subtle parakeratosis, irregular epidermal hyperplasia and mild superficial perivascular infiltrate mainly of lymphocytes and occasional dermal melanophages.No granulomas were visualized.

Final diagnosis - Pityriasis versicolor

Conclusion: Common skin conditions like TV can mimic leprosy. Hence a strong clinical suspicion aided by histopathology allows correct diagnosis. This prevents additional investigations and allows ease of treatment as TV is a easily treatable condition.

Keywords: Tinea versicolor, Mimicker, Hansens

#0904/ ILCABS901

IN VITRO COMPATIBILITY ASSESSMENT OF VARIOUS FOOD MATERIALS WITH LAMPRENE® (CLOFAZIMINE) SOFT-GELATIN CAPSULE TO SUPPORT DOSING IN PEDIATRIC LEPROSY PATIENTS

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Introduction: WHO recommends multidrug therapy (MDT) with combination three drug pack containing clofazimine, dapsone and rifampicin for use in both adult and pediatric leprosy patients. Out of these drugs,

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Lamprene ® (clofazimine) soft gelatin capsules (SGC) pose maximum challenges of administration in pediatric patients, who can't swallow SGC or have palatability concerns. Hence, we have evaluated compatibility of Lamprene® SGC with various food materials.

Objective: In this development study, the compatibility with soft food and food vehicles was investigated with Lamprene ® (Clofazimine) SGC .

Methods: Compatibility was evaluated by determining appearance, assay, degradation products and content uniformity, immediately after mixing and after storage of dispersed capsule content in selected food vehicle over a period. The acceptance criteria were chosen as per registered product specification.

Results: Out of ten vehicles studied, only four vehicles were found compatible. The assay and degradation products of clofazimine were within the acceptable range for Greek yogurt, hot water + apple sauce, hot water + Greek yogurt, and Hot water + Apple juice. The assay values were consistent for these vehicles after repeated analysis and there was no interference with clofazimine and degradation products peaks from vehicle components. For ORA plus and ORA plus + ORA sweet, which also had consistent assay values, the food vehicle component peaks were co-eluting with unknown peaks observed in control samples making it difficult to conclude about the extent of degradation. While the corresponding data for hot water, hot milk, apple juice, apple sauce and ORA sweet showed that Lamprene ® SGC does not disintegrate readily within the food matrices.

Conclusions: The in-vitro studies indicated that out of few selected food vehicles Greek yogurt could be selected as a preferred soft food for administration of Lamprene ® SGC for patients who have difficulty in swallowing and for pediatric population.

Keywords: Compatibility, Soft food

#0905/ ILCABS1013

THE INVESTIGATION AND ANALYSIS OF THE HUMAN RESOURCES FOR LEPROSY CONTROL IN SICHUAN PROVINCE

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Objectives: To investigate and analyze the characteristics of the human resources for leprosy control, and to formulate the suitable human resources strategy in Sichuan province.

Methods: A retrospective study was carried out to investigate and analyze the characteristics of the human resources for leprosy control in Sichuan in 2021, including gender, age, educational backgrounds, professional title and allowance, questionnaires was used to collected the information about job stratification. The data were analyzed with SPSS 19.0

Results: 658 leprosy staffs were analyzed, with a gender ratio of 1.19. The average age is 45 years. with 69.02% of the staff were older than 40. 26.29% of the staff had post graduate or above degree. 79.18% of the staff had the junior and intermediate professional title. The staff were older, with the higher educational background and professional title, the job satiations were worse.

Conclusions: The talent construction faced challenges. The sustainable strategies for the talent construction were enhancing professional training, improving technical level and increasing the allowances.

Keywords: Leprosy contol, Human resources analysis, Sichuan.

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21st International Leprosy Congress 2022

Short Video Presentations

SHORT VIDEO PRESENTATIONS

SHORT VIDEO PRESENTATION

#0906/ ILCABS12

MARATHON RACE-RUN FOR LEPROSY

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Marathon Race - Run for Leprosy was organized by Vimala Dermatological Centre, under the guidelines of the Assistant Director of Health Services-Leprosy Mumbai. The run was to mark the 75 years of Azadi Ka Amrit Mahotsav and Anti-Leprosy Week 2022. The two main purposes were, to create awareness among people that: (a) Leprosy is curable at any stage and (b) Leprosy is like any other communicable disease. The starting point of the Marathon was from Vimala Hospital, moving towards JP road, Machlimar, 7 Bunglow garden, Welfare School, Joseph Patel Wadi and the finishing point was Vimala Hospital. Congratulations to all those who made this event gracious through their participation and presence.

Keywords: Leprosy, Rehabilitation, Care, Love, Support, Awareness

#0907/ ILCABS165

ADAPTED LOW TECHNOLOGY MOBILITY DEVICE FOR SEVERE DEFORMED HAND AND FOOT IN LEPROSY

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Background: In recent times with the help of technology and websites any one can buy any new advancing products easily without hassle. The real challenge with these things are the local service availability and after sales support.

Method: One of our hospital senior resident was getting recurrent ulcers on her foot due to chronic nature of her disability and are at a risk of losing her limbs with her earlier practice of mobility using a wheelchair.

Then this idea of powered wheelchair was ideated and thought it would be always better to use the local resources and manpower to make a customized design. so, that service can be done locally. Then required materials like 24V 250 watt DC motor and controller, 12 V 18AH battery and other needed items were procured.

Commercially available powered mobility device comes with high cost and non adaptable to individual user needs in comparison to our mobility device and can be customized in Rs. 15,000/- only.

This product is a classic example of 70 percent engineering and 30 percent rehab design construct. In every stage of the making of the Mobility device the user was involved and her suggestions were incorporated. This project gave us great experience and valuable lessons for the future project. After the trial testing, she was given training for a week to have practice over the control systems like accelerator, brake, horn and steering.

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In conclusion, an adapted power mobility device can be used for indoor and outdoor mobility and enhance wellbeing of severely disabled leprosy affected person. This product is low cost and adapted to the individual abilities and enables functional mobility.

Keywords: Adapted Power Mobility Device, Low Cost, Mobility, Severely Disabled Leprosy affected person

#0908/ ILCABS342

PILOTING A LIGHT TOUCH APPROACH TO INTEGRATED ACTIVE CASE FINDING IN LEPROSY

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Background: When first introduced, the cost of novel medical procedures is high. The BCG Vaccine, Vitamin A capsules, Polio Drops, are a few examples of how cost can prevent many people from accessing medical services. A light touch approach means reducing the cost of a project or activity by collaborating with the government and the community. The idea is to lower the cost, ensure maximum utilization of resources, and to ensure that the project is sustainable in the long-run.

Method: The light touch approach implemented by the organization is based on the concept of community and health system strengthening to ensure sustainability of interventions, funded initially by external parties. A collaborative approach including all concerned stakeholders of the project is used with an aim to strengthen the public system. As of now, the project is in its early stages. It encompasses two municipalities with a total population of 64,017. Should the project yield satisfactory results at the end of its two year span, it would open a new paradigm in programmatic management in the field of Leprosy.

Conclusion: Despite being used in several programs like Vitamin A and Polio Drops distribution, the light-touch approach hasn't been used in Leprosy case finding in Nepal. This video takes its support from the massive success of both the BCG campaigns and Polio drops campaign in Nepal, to study the application of the light-touch approach in active case finding in Leprosy.

Keywords: Light-touch approach, Integrated, Sustainable

#0909/ ILCABS392

WHAT NEXT AFTER RELEASE FROM TREATMENT?

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Background: While some persons affected by leprosy become visibly disabled during or after MDT, many can also become emotionally, socially and economically disabled after release from treatment. As a result, they can lose their dignity in society and experience feelings of shame, helplessness, and humiliation. To reinstate the lost dignity, comprehensive rehabilitation service comprising leprosy treatment and sustainable rehabilitation program is a prime necessity.

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To complement a hospital project, an employment project was developed to create opportunities for its beneficiaries - persons affected by leprosy and persons with disability. The project aims to ensure sustainable rehabilitation of its beneficiaries by providing capacity building training, career guidance and engage them in formal or self-employment.

Method: The project implements ENROL–ENHANCE–EMPOWER (3E) approach to reinstate its beneficiaries into society.

Enrol: Beneficiaries go through rigorous assessment process.

Enhance: Receive career counselling, trainings, and participate in job matching exercises to enhance their understanding of job market.

Enhance: After engagement in job, beneficiaries claim that they are empowered by experiencing a sense of authority and confidence to reclaim their position in society.

The project has developed a web-based job portal to track entire progress history of its beneficiaries and utilizes peer navigation and counselling techniques to create a support circle among beneficiaries so that the zeal toward employment continues.

Conclusion: The persons may not necessarily reach sustainable rehabilitation if they are not able to become emotionally, socially, and economically healed. The 3E approach, peer navigation and counselling technique, and the integrated information management through the portal strive to deal with beneficiaries' condition, temperament, and aptitudes before and after engagement in employment to ensure sustainable rehabilitation, and restoration of lost dignity. The project result so far has been encouraging with 512 beneficiaries placed in employment and 211 already sustaining one year of employment.

Keywords: Leprosy, Disability, Comprehensive rehabilitation, Employment, Inclusive job portal, Empowerment

#0910/ ILCABS451

3D PRINTING FOR COSMETIC AND FUNCTIONAL RESTORATION IN LEPROSY REHABILITATION

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Background: Leprosy causes nerve damage, leading to repeated injuries or ulcers causing the loss or absorption of digits. In traumatic injuries, digit loss is also prevalent. Regardless of the cause, the loss of fingers and toes has a significant functional and psychological impact on a person. Silicone prostheses are provided to patients who lost digits, which are not affordable for many people affected by leprosy. In the medical profession, 3D printing techniques are commonly used. 3D printers can create items that are easily modified. It can be printed using a variety of filaments with varying degrees of durability and rigidity. To overcome aesthetic and functional restoration, the Inclusive empowerment project of The Leprosy Mission Trust India (TLMTI) in Tamil Nadu has explored the possibilities of using 3D printers to produce prostheses and splints for people affected by leprosy.

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Methods: This short video is aimed to demonstrate the advantages of using 3D printing technology in making orthotics and prosthetics for people affected by leprosy. An innovative way of making finger and Foot prostheses using the 3D printer is explained in this short video. This included 3D image capturing, and 3D Model designing for the amputated limbs and digits. Along with these techniques, the Impact of the 3D prosthesis was shown in a case study. 3D printed material is lightweight, cost-effective, and durable. The professionals like Prosthetist&Orthotist, Physical & Occupational therapists and other leprosy rehabilitation experts would benefit from this short video demonstration.

Conclusion: This short documentary highlights the benefits of 3D printing technologies in creating foot and finger prosthetics. 3D printed material is lightweight, cost-effective, and durable. In leprosy rehabilitation, using a 3D printer is a potential solution for producing orthotics, prosthetics and other aids and appliances.

Keywords: 3d print, Leprosy, Splints, Orthosis, Prosthesis, Restoration

#0911/ ILCABS463

HIGH RESOLUTION ULTRASONOGRAPHY - AN IMAGING TOOL IN HANSEN'S DISEASE

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Background: Leprosy is a chronic infectious disease caused by Mycobacterium leprae that affects mainly skin and peripheral nerve. Nerve palpation is a vanishing clinical skill that is subjective and susceptible to inter-observer variability. At this juncture, the use of high-resolution ultrasonography (HRUS) for imaging peripheral nerves in leprosy has been introduced as a new diagnostic tool for their objective assessment. It is preferred in leprosy because of its wider availability, higher soft-tissue resolution, real-time and dynamic imaging, flexibility to assess the length of the nerve, and pinpoint the precise location of a nerve lesion.

Method: High resolution ultrasound(HRUS) with a broadband frequency of 8-14MHz is used along with color doppler for assessment of individual nerves. Peripheral nerves such as median nerve, ulnar nerve, posterior tibial, lateral popliteal nerves are evaluated in patients in supine position. Dermatologists, leprologists, neurologists, and radiologists are increasingly realising the significance of this method. In a country like India, where dermatologists from medical schools and colleges have been demonstrated to play an important role in the diagnosis and treatment of leprosy, this imaging technology could be used more widely.

Conclusion: High resolution ultrasonography is a novel tool for confirmation of nerve enlargement in all clinical types of leprosy. Given that the Global Leprosy Program's strategy for 2021-2030 aims for a 90% reduction in the rate per million of new cases with grade-2 disability, it would be useful to include the use of HRUS of nerves for early detection of neuritis as an optional diagnostic tool in its strategy for managing leprosy and its complications to prevent new disability. As the global approach is expected to endure for the next ten years, during which time HRUS will likely become more widely

Keywords: High resolution ultrasonography, Hansen's, Nerve thickening, Novel tool

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#0912/ ILCABS509

REMOTE DISABILITY AND LEPROSY SERVICES VIA BASIC COMMUNICATIONS TECHNOLOGY

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Background: Providing leprosy and disability services through the COVID pandemic and successive lockdowns was extremely difficult for all services (and in Myanmar was greatly amplified by a military coup and state of emergency restrictions). Some providers tried to deliver services using technologies and mobile devices, but in many cases, these were unavailable or inaccessible to the majority of people with disabilities and families. Others tried to use technologies that were too limited to support the tasks they were trying to achieve.

Method: In response, we developed a manual to assist professionals, workers, families, volunteers, and people with disabilities in low- and middle-income countries (LMIC), to make better use of appropriate and accessible communications technology in rehabilitation. The manual is intended as a basic step towards enhancing disability and leprosy services where they are not accessible and/or affordable to people in remote areas of LMIC. The video describes the process of developing and refining the manual, which comprised several stages of development, feedback, and refinement.

Conclusion: The results of the preliminary evaluation of the manual were encouraging. The evaluation result suggest that the pilot version warrants further implementation as well as further refinement. The manual is a small step in the process of making rehabilitation, disability, and leprosy services more accessible and affordable to people in remote areas of LMIC. The encouraging feedback from reviewers and preliminary evaluation results, suggest that further implementation is warranted. More formal research to rigorously evaluate the effectiveness and refine the content of the manual will enhance the use of appropriate technology in volunteer/intermediate worker mediated disability and leprosy services.

Keywords: Disability services, Leprosy services, Communications technology, Volunteers, Intermediate level workers

#0913/ ILCABS517

COVID/LOCK DOWN DAYS-TELEDERMATOLOGY-DIAGOSING H.D

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Background: ;2019 saw unusual circumstances of COVID restrictions , including Lockdown in mant countries. This situation initially brought a pause to medical treatment for other ailments for a while, but dermatology being a visual science ,most of the times, we the dermatologists started making full use of tele dermatology through platforms like Google Duo, WhatsApp and Face time , etc. Still some disease even under our purview needed physical examination of the patient and distant viewing was a hinderance. Author thought of innovations to diagnose Hansen's Disease despite hinderances .

Method: At Bharti Derma Care and Research centre, more than 5000 patients were seen during the lock down period of around one year, through distance and any Tele-dermatology route. Two patients of Hansen's however were successfully diagnosed using common household items like Cotton Wicks used for lighting

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Diyas during prayers, drawing brushes of children; ultra soft tooth brushes,All pins used for wearing turbans in Sikh people and nose trimmers etc.

Conclusion: Necessity is the mother of invention/innovations and when going gets tough,the tough gets going. As tele-dermatology is not going to fade away ,despite a good riddance of bad COVID (due to convenience of reduction of travel time ,availability of advise and medicines and even laboratory services online),these innovations and some added to these may stick around for long.

Keywords: Diagnosis; Hansen's; Tele-dermatology

#0914/ ILCABS540

MOBILIZING THE SOCIETY THROUGH MARATHON RACE-RUN FOR LEPROSY

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Objective: To mark the 75 years of Azadi Ka Amrit Mahotsav and Anti-Leprosy week 2022 and to create awareness among people that Leprosy is curable at any stage and Leprosy is like any other communicable disease – Marathon Race-Run for Leprosy was conducted under the guidelines by the Assistant Director of Health Services Leprosy-Mumbai.

Methods: Meetings with the governing body and the field staff were organised to plan it systematically. Permissions were obtained from the Road Traffic Police (RTO) and the area Police Station. Untiring visits were paid at the schools, colleges, slums and the locality to mobilise everyone. The race covered the distance of three kilometres, in the crowded heart of the vicinity. Banners, flexes and pluck cards with the volunteers were displayed /posted at different places. Sufficient knowledge was imparted by the dignitaries on how to transform our society by taking care of the hansenian community. T-shirts with logo and slogans were given to all the participants to mark their involvement and certificates were given to encourage their contribution.

Results: Despite surrounded by Covid-19 protocols more than 400 participants registered themselves, not minding the age, sex, caste or religion. Everyone ran, walked, jogged, to create an awareness about Leprosy. The passer by were forced to stop, to enquire and to know about the Race for Leprosy. The participants took a pledge that thereafter they would be responsible to assist a person with leprosy in their vicinity.

Conclusion: Unlike rally Marathon Race encouraged people to participate in huge number, because it promises health benefits. They felt proud to be part of this noble cause. Eye witnesses felt it was an educative and informative event. People on social media lauded the humanitarian act. There had been so much propaganda on Leprosy that people became aware of their responsibility towards needy.

Keywords: Leprosy, Marathon, Race, Run, Mobilize, Society

#0915/ ILCABS608

LEPROSY AFFECTED PERSON CARE DURING COVID-19 PANDEMIC DISEASE

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Background: Leprosy affected person (LAP) care during covid -19 pandemic disease. My country; My responsibility.

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Method: Short video presentation

One patient with Grade 2 deformity and absorption of all fingers in both hands can wear facemask. Another patient with total claw hand with fixed deformity of both hands not able to wear facemask , so we should not forget these type of patient during pandemic disease.

Preventing pandemic disease far less than controlling them. When every one wear facemask the risk of transmission of covid -19 disease is very less. Facemask should be used as part of a comprehensive strategy of measures to suppress transmission and save lives. The use of facemask alone is not sufficient to provide an adequate level of protection against covid -19 disease.

Services to the Leprosy affected person during Covid -19 pandemic disease:

* Rice and grocery provided to the LAP (Leprosy affected person)

* MDT delivered to the containment zone under treatment (UT) patient.

* LAP living alone, since not able to get basic needs, admitted in Leprosy Rehabilitation home.

* Our District nucleus team (DNT) visited old Released from treatment (RFT) LAP and provided supportive medicine, ensure about getting maintenance grant about Rs.1500 (now Rs.2000) pension.

* Our DNT visited Government leprosy colony and arranged for Food, soap and oil. And also provided MCR chappal , walking stick.....

* Our aim is: Leprosy free INDIA.

* I wish you all, the new normal life.

Conclusion: We should not forget services to the LAP even covid -19 pandemic disease.

Keywords: My country; My responsibility, Leprosy patient care during covid-19 pandemic disease, Ensured about MDT covid vaccination and basic need, Health education regarding face mask, Hand wash..., Don't forget leprosy patient during pandemic disease

#0917/ ILCABS697

EMPOWERED PEOPLE CAN REDUCE AND BEAT STIGMA, DISCRIMINATION AND MENTAL HEALTH.

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Background: One of the four pillars of the Global Leprosy Strategy 2021–2030 "Towards zero leprosy" is, 'combat stigma and ensure human rights are respected.' To eliminate discrimination against persons affected by leprosy and their family members, one approach was to empowering people with leprosy to be agents of social change.

The case study throws light on how instrumental motivation and follow-up visits for continuum of care are for reducing transmission and negative impact of the diseases. The effort is aimed at impressing through the video to empower people affected by leprosy and its related disability, by raising their awareness, building their capacity, and facilitating their participation in the decision-making process, so that they would be recognized and respected as equal and contributing members of the society.

People affected by Lymphatic Filariasis (LF) were also included in the integrated strategy. While addressing the known determinants of disease, morbidity and disability, the project's integrated and human rights-based

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approach aimed to reduce NTD transmission, prevent morbidity and new disability, and prevent existing disability from worsening.

Methodology: The trained staff promoted self-care home-based practices among persons affected by leprosy and LF in the field visit. It is focused on the caring of limbs and preventing disability on the five pillars comprising skin care, wound care, physiotherapy, uses of protective footwear and health counselling. Customized footwear is being provided and extended support to access the social entitlement.

Conclusion: The project's integrated and human rights-based approach, showed a tremendous reduction in negative impact of NTDs on hundreds of affected persons. The affected persons were empowered to access hassle-free social entitlement. The findings indicate that raising awareness and reducing social stigma in the community can empower people to make social, behavioral, and inclusion changes.

Keywords: NTD- Neglected Tropical Diseases, LF- Lymphatic Filariasis

#0918/ ILCABS726

DO PATIENTS UNDERSTAND LANGUAGE NEUTRAL ANIMATIONS AS REMOTE HOME BASED VIDEO INTERVENTION GUIDE FOR LEPROSY MANAGEMENT: A QUALITATIVE VIDEO INTERVIEW STUDY

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Introduction: Government Primary health system care facilities are the only recourse for people with leprosy and living in remote, rural India. Due to resource constraints, the system, prioritizes certain conditions. With low public health priority, people with leprosy, who require long term continuous primary care for recurrent episodes of leprosy ulcers/reactions/ acute episodes, are often overlooked. DHARA (Sanskrit for continuous flow) is a modular, smartphone-based application, developed for primary level frontline health care worker (FHCW). It can provide real time customised and continuous guidance through language neutral animations that are explained to patients by FHCW.

Objectives: A pilot study was conducted in one endemic district in Bihar to evaluate the feasibility of DHARA. The objective was to evaluate if language neutral animations were effective as remote home based video intervention guides that patients understood and followed for disability and morbidity management.

Methods: With due ethical approval and consent, video based in-depth qualitative interviews were conducted at the home of 4 randomly selected persons with leprosy among 37 patients.

Results: All 4 patients understood the content of the videos and were following the guidance on self-care and exercises. They also highlighted the fact that they had recurrent episodes of reactions, access to health care facilities were difficult, especially during monsoon seasons and care if provided was inadequate without examination or information on wound care and exercises.

Limitations: These are early results from a study was conducted at one location only with a very small set of patients and will soon be conducted quantitatively and qualitatively at multiple locations to explore scalability of the solution.

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Conclusion: Language neutral animations on smartphones provided to local women with training can empower resource constrained communities to manage chronic conditions locally.

Keywords: Language neutral animations, Home based video intervention

#0919/ ILCABS768

TOOLS DEVELOPED FOR ACTIVE CASE DETECTION AND REGULAR SURVEILLANCE (ACDRS): IMPACT ON THE NATIONAL LEPROSY ERADICATION PROGRAMME.

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Back Ground: Despite achieving the status of elimination, Leprosy is still a major health problem in many developing countries.. The NLEP India is a centrally sponsored scheme under the umbrella of National Health Mission (NHM) has come out a unique programme 'Active Case Detection and Regular Surveillance (ACDRS)' with ASHA as the pillar to the programme. The primary objective of the Programme is to detect the cases of Leprosy early and to provide complete treatment free of cost in order to prevent the occurrence of the disabilities in a person affected with leprosy and stop the transmission of disease at the community. Leprosy often goes undetected due to lack diagnostic tools and awareness. The objective of this study is to design the tools required in the field for ACDRS.

Materials and Methods: Based on the guidelines issued by the Government for ACDRS, the 23 points narrated under "The definition of suspect /Symptoms, guide for suspect case identification" are moulded in the form of Flash Cards and the Plexies as ready reckon for the field staff in the identification of cases.

Conclusion: A total of 1736 cases suspected by the ASHAs with help of the tools provided to them, and are validated by the experienced Paramedical and the Medical officers in the field out of 1736 suspects 33 New Leprosy cases were confirmed and started on MDT in the first round of ACDRS in 2021 in Hyderabad District, Telngana State, India.

The video presentation and testimonies offered by the ASHAs emphasize the importance of tools and aids in the success and achievement of the objectives in the programme.

Keywords: Active Case Detection and Regular Surveillance (ACDRS), National Leprosy Eradication Programme (NLEP), Suspect, Symptom, Diagnostic tool

#0920/ ILCABS864

A VIDEO PERFORMING HIGH RESOLUTION ULTRASONOGRAPHY ON LEPROSY PATIENT

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Background: :- In this short video communication we intend to describe the procedure of high resolution ultrasonography in leprosy patient.In a modern era High resolution ultrasonography (HRUS) of nerves has

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the potential to be a useful diagnostic test for clinical leprosy. It is helpful in early detection of cases, especially early PB cases where clinical nerve enlargement will be less obvious.An enlarged peripheral nerve is a cardinal sign of leprosy, but clinical nerve palpation has its limitation because of subjective findings. Examination of 8 peripheral nerves by high resolution ultrasonography (HRUS) becomes more sophisticated and it is possible to accurately measure the cross-sectional area entire course of nerve can be studied in the muscular plane and beneath the retinaculum with no limitation of its subcutaneous course and study the echotexture of the nerve (Normal, Mild, Moderate, and Severe). Colour Doppler will be applied to the nerves to look for blood flow in the nerves as an indicator of neuritis.

Method: We demarcate various anatomical locations at which peripheral nerve should be accessed for proper demonstration by using linear array transducers of 12-18 MHz are an essential prerequisite for HRUS. Sites of examination of peripheral nerves

Median nerve can be examined at wrist and forearm

Ulnar nerve at elbow and proximal to medial epicondyle

Lateral popliteal nerve at fibular head

Posterior tibial at ankle and proximal to medial malleolus.

Nerve sonography shows four main pathologic alterations:

1) Enlargement of nerves.

2) Increased hypo echogenicity of nerve

3) Increased thickness of epineurium

4) Increased endoneurial and epineural blood flow

Conclusion: A simple ideal video demonstration to perform high resolution ultrasonography used for a new dimension of diagnosis and assessment of nerve damage and prevent disabilities. By increasing awareness about high resolution ultrasonography among dermatologists and neurologists can improve diagnosis of leprosy.

Keywords: Colour Doppler, High resolution ultrasonography

#0921/ ILCABS1050

CLINICAL METHODS OF PERIPHERAL NERVE PALPATION: A VIDEO DEMONSTRATION

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Background: Peripheral nerve thickening is one of the cardinal feature for diagnosis of leprosy. With the integration of leprosy into the general health system, the clinical skill of palpation of nerves is a disappearing clinical skill.

Methodology: In this short video communication, we intend to demonstration ideal way of clinical palpation of commonly involved peripheral nerves in leprosy; namely supra-orbital nerve, infra-orbital nerve, great auricular nerve, supra clavicular nerves in the anterior triangle of the neck, radial nerve in the arm, ulnar nerve at the medial epi-condyle, median nerve at wrist joint, radial cutaneous nerve at the wrist, lateral popliteal nerve at the knee joint, sural nerve in the calf, posterior tibial nerve at their respective anatomical landmarks.

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Benefit to the congress delegates: post graduate students of dermatology, trainee leprosy workers, clinical leprologists shall find these demonstration helpful in revision and upgrading their clinical skills.

Keywords: Nerve palpation, Diagnosis of leprosy, Peripheral nerves

#0922/ ILCABS1057

DEMONSTRATION OF PREPARATION OF SLIT SKIN SMEAR (SSS) EXAMINATION.

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Background: Leprosy is a chronic curable infectious disease caused by infection of Mycobacterium leprae, an acid-fast bacillus. It mainly affects the skin, eyes, nose and peripheral nerve. Slit-skin smear (SSS) is a cytodiagnostic technique in which collection of samples is done from a tiny cut in the lesional skin, stained and examined under a microscope. The demonstration of acid-fast bacillus (AFB) through SSS is important for classification and management of leprosy, especially at places where the expertise is available. Its specificity is almost 100% as it directly demonstrates the AFB. As in current national leprosy program, slit skin smear are not mandatory there is declining expertise in preparation of slit skin smear.

Method: In the video demonstration, we will demonstrate the details on how to perform the slit skin smear. World Health Organization (WHO) recommended sites for performing SSS has been brought down to two sites, one from earlobe and other from active skin lesion. However, other active or suspicious lesions must be included, especially if the disease spectrum is closer to the paucibacillary (PB) side. We will also demonstrate how to prepare slide and stain with Ziehl-Neelsen Method. Microscopic examination is done with light microscope and examined for bacterial index (BI), morphological index (MI), solid, fragmented and granular (SFG) index.

Limitation: Because sensitivity of SSS is low toward the tuberculoid pole, PB cases can be missed. Even negative smear dose not exclude leprosy (smear may be negative in PB cases where *M. leprae* are scantly present) which depends on training of staff; hence observation is also subjective.

Conclusion: SSS is an accessible, easy, available at periphery centers, diagnostically and prognostically valuable, cost-effective bed side investigation tool for leprosy. This video demonstration shall help re-visit and re-learn this classical method of leprosy diagnosis.

Keywords: Slit skin smear, SSS, Leprosy, Acid fast bacilli,

#0923/ ILCABS1059

DEMONSTRATION OF SENSORY TESTING(TEMPERATURE & TOUCH) IN PATIENT OF LEPROSY

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Background: Leprosy is an infectious Disease which affects skin and peripheral nerves. There is increase in the pure neuritic presentation of the leprosy. Negligence in sensory examination can prove damaging to the patient.

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Untreated, it can lead to development of deformity. Early detection of impaired sensation in cutaneous lesions provides an early clue for impending nerve function impairment. It should be checked periodically in each visit.

Method: In video demonstration, we will demonstrate assessment of touch sensation in patients of leprosy, by Semmes Weinstein monofilaments, a set of nylon rods of gradually thicker gauzes that exert different pressures. The standard sites for sensory testing are seven sites in hand; On Feet, seven sites on the sole and one site on dorsum of the foot. The reference value for normal sensation threshold of the hand is 0.2 gm pressure; for foot is 2 gm pressure by graded Semmes Weinstein monofilaments. For testing of temperature sensation hot and cold test tube method is used. By using two test tubes, one filled with hot water and other with cold, temperature sensation is checked in lesional and nonlesional (World Health Organization standardized) sites. Misperception or loss of temperature sensation is recorded in each visit. As the temperature sensation is first to be lost in leprosy, it is very useful in early detection of nerve function impairment.

Limitation: These are subjective tests.

Conclusion: In leprosy, demonstration of touch & temperature by the above-mentioned methods is easy to perform, and can be done in outpatient department. So early diagnosis and treatment decrease morbidity of the disease.

Keywords: Nerves, Semmes Weinstein microfilaments, Sensation, Touch, Temperature

#0924/ ILCABS1074

3D PRINTED INSOLES AND SHOES FOR PEOPLE WHO HAVE OR HAVE HAD LEPROSY

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Background: We aim to show in the video that new technologies need to be proposed to finding shoes for Hansen's disease sufferers. Shoes made to measure or manufactured, have drawbacks in adaptability and/or aesthetics. Shoemaking is a scarce professional. Setting up an orthopedic workshop and providing materials and equipment has been difficult for Brazilian public management.

Method: In detail, we will present in the video how the steps were until we were able to offer shoes and insoles printed in 3D technology for patients with leprosy sequelae. Initially, it was intended to create a network of orthopedic workshops to digitize neuropathic feet and send them online to a 3D printing center. Given the complexity of the action, we decided to find a company already established in the area. After extensive research, only one company was able to carry out the entire intended process, it has been consolidated in Brazil for 12 years and has 58 franchises. After the NGO presented the challenge to the company, a partnership was established. Three former leprosy patients who have been using traditional adapted shoes for more than 10 years, who have ulcers and/or severe deformities in addition to good understanding and commitment, were invited. After signing the informed consent form, the three former patients underwent physical assessment, baropodometry and 3D scanning. Each one chose the shoe model and, after 10 days, they received their 3D shoes at home. Follow-up was carried out for 120 days, with guidance on the use and continuity of previous treatments.

Conclusion: The action was consolidated and can serve as an example for other services around the world to benefit people with leprosy. Shoes and insoles made in 3D printing are produced quickly, are adaptable, collaborate in wound healing, gait stability, provide comfort and are aesthetically acceptable.

Keywords: Leprosy, Rehabilitation, Self-Help Device, Assistive Technology, Assistive Devices, Adaptation.

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Late Abstracts

#0925/ ILCABS33

PRESENTING SYMPTOMS OF LEPROSY AT DIAGNOSIS: CLINICAL EVIDENCE FROM A CROSS-SECTIONAL, POPULATION-BASED STUDY

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Introduction: Leprosy is associated with different dermatologic and neurologic manifestations within a wide clinical spectrum, causing a great diagnostic challenge.

Objectives: To examine associations between common presenting symptoms of leprosy and stage at diagnosis.

Patients / material and methods: In this cross-sectional study, we analyzed population-level data from main complaint of newly detected leprosy cases.

Results: The data of 2125 newly detected leprosy patients, with 5000 symptoms, were analyzed. Numbness, erythema, Painless nor pruritic skin lesions, eyebrow hair loss, and tubercles were common symptoms of leprosy. Despite low proportions, formic sensation, pain, pruritus, finger contracture, muscle atrophy, and motor dysfunction were reported during the diagnosis of leprosy. The proportions of skin, skin and nerve, and nerve symptoms as the initial symptoms were 33.25%, 44.95%, and 21.80% and as the only symptoms were 28.66%, 57.81%, and 13.91%, respectively. In those with physical disability, nerve symptoms were the most frequent symptoms (57.65% and 65.36% for the initial and only symptoms, respectively) compared with skin and skin and nerve symptoms. In the delayed diagnosis group, nerve symptoms were the most frequent symptoms and were associated with the longest diagnostic intervals (mean±SD: 38.88 ±46.02 and 40.35±49.36 months for initial and only symptoms, respectively) when compared with skin and skin and nerve symptoms.

Limitation: The symptoms used to form the differential diagnosis of leprosy were not described. It was difficult to cover symptoms of every subtype of leprosy.

Conclusions: Understanding the nature of presenting symptoms and developing symptom awareness campaigns would improve the level of leprosy awareness in the community. Increasing awareness of nerve symptoms, focusing on individuals with nerve symptoms at neurology outpatient visits, and holding focused training for medical staff specializing in neurology would enhance the capacity of the health system to recognize leprosy early.

Keywords: Leprosy, Presenting symptom, Early diagnosis, Neurologic manifestations, Disability

#0926/ ILCABS134

INTEGRATED APPROACH TO PROVIDE CARE AND SUPPORT TO LEPROSY CASES THROUGH TELE COUNSELLING IN INDIA

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Introduction: In 2021, NLR India launched a pilot project named VIKALP (the Call Centre Project) for providing tele-counselling service to leprosy cases of seven districts of six states. The call center was

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established in Jaipur, Rajasthan. This being the COVID year, the project was implemented at varied pace by the districts. Here we present the experience of Haridwar district of Uttarakhand.

Objective: To provide timely counselling services on care and support to new leprosy cases. Based on the details of cases received from the district leprosy officer (DLO), the counsellor calls the leprosy cases; counsels them, and reports to the DLO for follow-up support through the field staff.

Material and methods: Haridwar reported 72 new cases between May & October 2021. 49 (68%) cases were contacted; the rest could not be connected due to reasons like incorrect phone number and unavailability. All were counselled fortnightly on leprosy, lepra reactions, side effects of Multi Drug Therapy (MDT), importance of self-care, Covid-19 related information and vaccination. Feedback was shared with DLOs periodically.

Results: 14% (7) of cases restarted treatment following counselling. 14% (7) and 20% (10) cases reported red coloration of urine and discoloration of skin respectively; on counselling, about the side effects they continued treatment. 40% (20) cases reported depletion of MDT drug stock, the stock was replenished by health staff. 3 persons with ulcer had them healed based on self-care guidance by the counsellor. 47% (23) cases were released from treatment within stipulated time. 50% (25) cases got fully COVID vaccinated.

Limitation: The travel restrictions during COVID lockdown caused some delay in field support.

Conclusions: Call centre-based tele counselling integrated with the ongoing leprosy service can improve the treatment outcomes of the leprosy cases.

Keywords: Tele counselling, Leprosy index cases, MDT, Self-care practice

#0927/ ILCABS219

ERYTHEMA NODOSUM LEPROSUM OCCURRING WITH TUBERCULOSIS- TWO CASES OF A RARE COMBINATION POSING THERAPEUTIC CHALLENGES

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Introduction: Leprosy and tuberculosis are endemic in India but simultaneous occurrence of tuberculosis and leprosy is rarely reported. We report 2 cases of a tuberculosis in an immunocompromised host due long-standing unsupervised corticosteroid intake for erythema nodosum leprosum (ENL).

Description: First patient gave history of recurrent generalized erythematous papulonodular skin lesions along with malaise and body ache for the past 2 years. Diagnosis was based on the various laboratory and imaging studies supported by demonstration of Mycobacterium tuberculosis and Mycobacterium leprae in sputum and skin smears respectively. Histopathology further supported the diagnosis of ENL. The patient was treated with antitubercular therapy with dapsone. He developed hepatitis which led to further management challenges which was managed effectively.

Second case was a recurrent generalized erythematous papular skin lesions of 6 years diagnosed to have ENL. Patient had taken systemic corticosteroid therapy on and off for 3 years. He presented with throat pain, swallowing difficulty and hoarseness of voice of 6 months duration. Imaging studies and biopsy revealed a diagnosis of laryngeal tuberculosis and histopathology of skin lesions confirmed type 2 lepra reaction.

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Conclusion: The institution of anti-tubercular and anti-leprosy therapy resulted in improvement of the both patient's condition. These cases represent importance identifying underlying immunosuppression induced as a part of ENL treatment. These cases are presented for the rarity of combination of lepra reaction with tuberculosis, and the challenges in the management.

Keywords: Erythema nodosum leprosum, Tuberculosis

#0928/ ILCABS250

TOGETHERNESS THROUGH VIRTUAL GATHERINGS

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Introduction: "Leprosy" is one of the neglected tropical diseases (NTDs) and the pandemic caused by COVID-19 added to the negligence. People with lived experience and their families were neglected too, causing them to live in severe vulnerability. Meanwhile, IDEA hosted virtual Gatherings and Knowledge Sharing Series, as a forum for equal participation and knowledge exchange for individuals who have personally experienced Hansen's disease across the globe to share how they, their families and communities were doing during the challenging times of COVID-19.

Objectives: To build capacity and foster empowerment through virtual gatherings

Materials and methods: Computer or smart mobile with internet access

Results:

- increased networking (among individuals from different countries and countries within among organizations of people, physicians, healthcare providers, researchers, and other experts in the field.)
- increased understanding of the medical, psychological, social and economic issues, and impacts of policy coping with Hansen's disease
- increased advocacy, participation and support of individuals and their unique issues internationally and nationally
- consistent and expanded international participation, representing more countries and individuals from remote areas
- enhanced mental wellbeing for individuals newly diagnosed and individuals living with lengthily or lifetime complications.

Limitations: All the participants may not have gadgets and internet access that led them to rely on others. All the participants may not be technology friendly. Inappropriate timing due to difference caused by Time zone. Language barrier due to limited number of interpretations.

Conclusion: The gatherings unite people with lived experience developing sense of brotherhood/sisterhood, have peer-support, ensure mental well-being, share knowledge and experience.

Keywords: Virtual, gathering, Peer-support, Knowledge, Experience

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#0929/ ILCABS497

FIGHTING PATH

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Independent production: Faustino Pinto (Person Affected by Hansen's Disease)

Summary: This mini documentary tells the story of 04 people affected by Hansen's disease, 02 men and 02 women through the paths of negligence and neglect of the public health system in the city of Juazeiro do Norte in Ceará, reflecting the situation in Brazil and perhaps in several places in the world. where the endemic is stronger, we will tell you how difficult early diagnosis is, access to consultations and exams, physical impairments, their relationship with the disease, family, the paths, distances and misfortunes travelled by these real characters, these stories are common in Brazil, but never reported in such a real way as the mini documentary shows, we hope to change behavior, cause empathy and above all raise the debate on how tortuous the paths traveled by people affected by Hansen's disease in Brazil and in the world are, and with that seek immediate solutions for better coping with the disease, focusing on the individual affected by Hansen's disease.

Keywords: Fighting Path Hansen's disease

#0930/ ILCABS579

CHEMOPROPHYLAXIS FOR LEPROSY IN PEP4LEP - COMPARING THE EFFECTIVENESS AND FEASIBILITY OF A SKIN CAMP INTERVENTION TO A HEALTH CENTRE BASED INTERVENTION AN IMPLEMENTATION TRIAL: PRELIMINARY FINDINGS FROM ETHIOPIA

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Introduction: Single dose rifampicin (SDR) has proven efficacy as post-exposure prophylaxis (PEP) with a 57% risk reduction when given to contacts of leprosy patients. It is included in the World Health Organization leprosy guidelines.

Objectives: The aim of PEP4LEP is to contribute to interrupting Mycobacterium leprae transmission by identifying the most effective and feasible method of integrated skin screening of leprosy patients' contacts and administering SDR-PEP in Ethiopia, Mozambique and Tanzania. Preliminary results from Ethiopia are presented here.

Patients / material and methods: This is a two-arm, mixed-method, cluster-randomized implementation trial. Intervention 1 is a community skin camp in which around 100 close contacts - household contacts and neighbours - of a leprosy index patient are invited; intervention 2 is health centre-based, including index patients' household contacts only.

Results: In Ethiopia, 36 index patients were included in intervention 1 and 29 in intervention 2 between March 2021 and April 2022. In arm 1, 3,063 contacts were screened; 2,684 (87.6%) received SDR-PEP.

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In arm 2, 89 were screened and 84 (94.3%) received SDR-PEP. A total of 1,377 (43.7%) contacts were diagnosed with skin diseases, all but one via skin camps; 31 leprosy patients were detected (84% via skin camps). No one refused SDR-PEP.

Limitations: Because of the long incubation period, the full epidemiological impact on the leprosy new case detection rate will not become apparent within the study duration. More refresher trainings were needed because of the high transfer of trained health workers. Poor road infrastructure and heavy rains are challenging when organizing skin camps.

Conclusion: Ahigh number of skin diseases detected via skin camps is notable. Active case finding and raised awareness are expected to lead to more and earlier detected leprosy cases. This study will hopefully translate medical interventions with proven efficacy - such as SDR - into routine care.

Keywords: Leprosy, Case detection delay, Chemoprophylaxis, Skin camp, PEP4LEP, Ethiopia

#0931/ ILCABS725

THE IMPORTANCE OF CAPACITY BUILDING FOR ACHIEVING ZERO DISEASE ZERO DISABILITY AND ZERO DISCRIMINATION

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Background: Leprosy is a chronic infectious Disease predominantly affecting skin and peripheral nerves the disease remains dormant due to prolonged incubation period and the affected doesn't seek medical advice even after at the appearance of the signs and symptoms of the disease due to lack of awareness and stigma attached to the disease. The delay in diagnosis amounts to disability followed by discrimination. The early case detection and immediate proper treatment are crucial in arresting the infection preventing the disabilities. Hence the health care providers should be aware of the facts about the disease and its consequences if the person is untreated. Advocacy counselling training inter-personal communication, with persons affected and involvement of local leaders will all be helpful in identifying case at the earliest

Methods and Materials: The capacity building for the health care professionals, Medical Officers, Para Medical Officers, Supervisory Staff, ANMs and ASHAs (Accredited Social Health Activists) in the district of Hyderabad, Telangana State was done with the help of the training modules case studies and case demonstrations. Pre and post training test was conducted and the knowledge acquired was assessed and documented. The trainees were given the diagnostic tools for utilising in the field for easy and early identification of cases.

Conclusion: the diagnostic aids and tools provided to the trainees in the form of capacity building yielded good result in the field in the early identification cases not only by the Medical, Para medical and Supervisory staff but also the as has who are the back bone of the programme. This case study described in the videos concludes that the capacity building/training is crucial to the NLEP Programme for achieving the goal of Zero Disease, Zero Disability and Zero Discrimination.

Keywords: Accredited Social Health Activists, Capacity building, Discrimination, Disease, Diagnostic tools

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#0932/ ILCABS781

ROLE OF DISTRICT ADMINISTRATION IN OPERATIONAL INTERVENTIONAL STRATEGY TO ENHANCE LEPROSY OPERATIONS IN SPORADIC CASE REPORTING DISTRICT OF UDALGURI, ASSAM, INDIA- 2021

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Introduction: Interventions in the leprosy programme by the District Administration was not been studied earlier to develop strategies, enhance programme operations. In consultation with the Cachar District Administrator, Leprosy Consultant a strategy was developed and implemented in Udalguri district by the year 2021.The district is an Autonomous Bodoland Territorial Council with dual political governance both by State and the Council levels.

Each month the District Administration reviews more than 90 programmes including Health, due to paucity of time, lack of understanding on the gravity of the issue, Leprosy programme does not get sufficient attention.

The district has high Multi Bacillary cases with deformity, Zero Child cases, indicating very late case detection. The role of District Administration is considered to be crucial for achieving the desired results.

Objectives: To increase the active participation of District Administration in the National leprosy Eradication programme, involve other departments to achieve the programme targets.

Materials and methods: Situational Analysis, Epidemiological indicators, Performance indicators Report review, Interviews with Leprosy Consultant, Programme Officer and patients, Planning and implementation in coordination with the Bodoland Territorial Council and departments concerned.

Results: District administration identified the role and responsibilities, Review of programme initiated, Support in inter-departmental coordination, participation under National Health Mission established, Funds utilization improved, Annual Activity plan modified. Major loopholes in Human Resource managed with re-placement of District Leprosy Officer.

The District Council sensitized with politically commitment ensured to support enhancement of Leprosy Programme activities.

Limitations: New activities disrupt regular and planned activities.

Conclusion: Involvement of District Administration leads to better coordination, monitoring of the programme which is quintessential to remove the bottle necks and make NLEP successful. This proactive approach of the district administration supports and motivates the health department in achieving leprosy free status in the district. Details to be discussed during presentation.

Keywords: District, Administrator, Leprosy control, National Health Mission

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#0933/ ILCABS818

ISSUES OF WOMEN AFFECTED BY LEPROSY BEYOND STIGMA

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Introduction: Illiteracy, culture, poverty has lot of impact on women suffering from leprosy. Illiteracy: Most of the women affected by leprosy are illiterate and unaware about government rules hence unable to plea for their rights decreasing their expectation levels. thereby preventing them to become self-sufficient and living with dignity.

Culture: The stigma in community towards leprosy and women affected by leprosy is a big barrier for women to move freely. such stigma in community will cause depression in Women affected by Leprosy, leading to isolate themselves.

Poverty is a major issue in the community where the poor women do not get their deserved respect and dignity.

Opportunities: Segregation from family and society, loneliness, repeated health issues, visible deformities, mental illness, no access to social services and entitlements, health care services, discrimination in job opportunities, obstacles in getting education, and problems finding a place to live, are the various problems women affected with leprosy are facing in society.

Rights: Still, at some places, the way these women have been treated in all public domains constituted a serious violation of their human rights, stripping them of their dignity in the process.

Conclusion:

Welfare: Needs support through rehabilitation for self-sufficiency should be prioritized by, providing financial assistance to regain their dignity and respect

Discriminatory laws against persons affected by Leprosy should be repealed for mainstreaming.

Injustice: The Universal Declaration of Human Rights states: "All human beings are born free and equal in dignity and rights." This includes every person affected by leprosy. But yet legal, social, and economic discrimination persists and may continue for many decades

Possible Solutions:

1. A Specialist of leprosy should be available on hand at the district level.
2. Community awareness and involvement is required.
3. Participation& Inclusion
4. Job Opportunity for woman affected by Leprosy

Keywords: Women, Human rights, Community, Respect, Dignity

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#0934/ ILCABS831

A SHORT FILM ON IMPORTANCE INFORMATION EDUCATION AND SOCIAL MOBILIZATION THROUGH SOCIAL PLAYS AND MYTHOLOGICAL DRAMAS DURING SLAC AND HEALTH MELAS

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Background: Leprosy is chronic infectious disease associated with myths misconceptions. Stigma and Discrimination toward Leprosy Affected Persons is the main barrier to achieve the goal eradication of leprosy. Hence Information Education Communication is most important component to communicate the scientific facts about the disease. Mass communication mode is helpful to reach all groups of public, with in short time it will reach huge group of public, like Kalajata, Social Play (Skit), Mythological dramas which are more attractive and helpful to Change the behaviour of people and community towards disease and Leprosy Affected Persons. The objective SPARSH Leprosy Awareness Campaign is to create Awareness at Village level /slums with Social Play (Skit), Mythological dramas, Kalajata as well as Grama Sabhas and Pratighyas (Oaths) involving the grama pramukh.

Methods and Material: Based on the NLEP IEC guidelines the scripts prepared with key messages, generating information in local languages by trained health professionals and performed by well-known TV, Movie and Drama Artists during Health Melas and Sparsh Leprosy Awareness campaign in Hyderabad District.

Conclusion: The Leprosy related messages through the skits and dramas helped in realising the objective of dissemination of the correct scientific information to the public and helped to dispel the myth and misconceptions as it is seen from the applause by the public and the local leaders. This subsequently resulted in increase in voluntary reporting from every sphere of life. The varied forms of communication adopted as skits and dramas are depicted in videos and public appreciation also documented in the videos.

Keywords: Health Melas, Kalajata, Grama Pramukh, Myths, Misconceptions, Stigma

#0935/ ILCABS870

REMOVABLE OFF-LOADING DEVICES VERSUS TOTAL CONTACT CAST TO PROMOTE HEALING OF PLANTAR ULCER IN LEPROSY: A NON-INFERIORITY, RANDOMIZED CONTROL TRIAL

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Introduction: Plantar ulcer is a serious complication in leprosy, often unavoidable despite following self-care. Almost all the treatment modalities have significant recurrence rate. One in two admissions and over 50% of bed days are utilized for ulcer care in leprosy hospitals. Total contact plaster has been a standard strategy to expedite healing of ulcers by off-loading the wound area. However, the expertise in applying plaster has been dwindling and not being used regularly now; increasing the hospital stay and morbidity.

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Objectives: To compare the innovative removable off-loading device with the embedded excavated insole under wound area that can offload the ulcer area and total contact plaster cast in healing of ulcers.

Material and methods: This is a non-inferiority, multi-centric, randomized control trial. Patients with loss of sensation in foot with ulcers which involve only skin, without visible infection will be randomly allocated to either intervention group; who will receive the removable walking brace or control group; who will receive the current method of total contact plaster cast. The ulcer dressing will be similar in both the groups. The outcomes will be measured at baseline, at 6 weeks or when ulcer heals completely at 6 months from recruitment. The trial is registered in CTRI.

Results: Recruitment of study participants began in June 2021. The primary outcome will be the percentage of ulcer healed at 6 weeks, reduction in the ulcer area as assessed using the standard tool and time to heal in days. Secondary outcome will be user satisfaction on using off-loading devices, functional independence level while on treatment (off-loading device), and the quality of life at 6 months from recruitment.

Limitations: Will be reported after completion of the analysis.

Conclusion: This study will provide evidence on removable walker as off-loading mechanisms to promote healing of plantar ulcers in leprosy.

Keywords: Plantar ulcers, Leprosy, Off-loading, Total contact cast, Removable walker

#0936/ ILCABS1085

LEPROSY MANIFESTING AS IRIS (TYPE-4) IN HIV

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Introduction: IRIS is an acute symptomatic expression of latent infection during recovery of immune system. There are only few published case reports of leprosy manifesting as IRIS to our knowledge.

Case Description: A 14year old boy, diagnosed case of HIV & Tuberculous Cervical lymphadenitis, was resistant to first line regimen and currently on second line regimen of ART and ATT.

Patient had come with complaints of a scaly patch on dorsum of left foot, 2 months after the start of changed ART regimen. Patient was being treated for cellulitis with no response. On inspection a single scaly patch of size 4x3 cms was seen on the dorsum of left foot. Antibioma, Tinea incognito, Atypical mycobacterial infection were kept as differential diagnosis. Patient was asked to stop all the antibiotics and kept under observation and reviewed after 2 weeks.

On reexamination, patch was edematous and hypo anesthetic with enlarged tender left popliteal nerve (grade 1) Clinical diagnosis of BT Hansens Type I reaction was made and confirmed by biopsy. Patient was started on MB-MDT and Systemic steroids. After 3 weeks, Patient came back with increased pain, ulceration at the patch site. On examination, single ulcer of 4x3 cms was seen with thickened and tender left lateral popliteal nerve(grade3) along with foot drop. Secondary bacterial infections were ruled out. In view of the above findings, we considered HANSEN'S MANIFESTING AS IRIS TYPE 1V. Patient continued MB-MDT, ART & ATT. Case was notified to the district leprosy officer and transferred to Shivananda institute for management of ulcer and foot drop At present, ulcer site has completely healed and child is going to school.

Conclusion: Only few cases were reported, leprosy manifesting as IRIS should also be considered in HIV patients on start of ART.

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BASIC CLINICAL EXAMINATION OF LEPROSY PATIENT FOR PARAMEDICS: ILLUSTRATION IN HINDI

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Background: The examination of a leprosy case is complex, and skills for the same are acquired by practice, especially by paramedics. The examination procedure of leprosy patients has been mentioned in various textbooks and National leprosy eradication programme (NLEP) manuals, but video demonstration for the same is lacking. Therefore, the video attempts to illustrate the basic steps in examining a leprosy case in Hindi for paramedics, which is an important step toward leprosy training.

Methods: The contents of video have been adapted from NLEP training manual for health supervisors 2019. The video demonstrates the various steps in Hindi taken for examination in an actual leprosy patient, like inspection regarding the number, size and induration of patches, checking for sensory loss on the patches, and moves on to demonstrate the correct way of palpating peripheral nerves like ulnar, lateral popliteal and post tibial. It further illustrates voluntary muscle testing for facial, ulnar, median, lateral popliteal and radial nerves.

Conclusion: The demonstration of basic clinical examination in this video may act as one of the small steps in further enhancing the health care skills of paramedics, who might often be the first point of care for leprosy patients. We further suggest more such videos in local languages to be made and circulated, which will act as an impetus and aid in initiating early anti-leprotic treatment and finally in achieving our dream of a Leprosy-free world.

Keywords: Clinical examination, Leprosy, Paramedics

#F-68

COMMUNITY LED MOVEMENTS IN BANGLADESH: ROLE IN NEW CASES FINDING & CONTACT TRACING

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Introduction: Elimination of Leprosy as a public health problem was achieved in Bangladesh in 1998. It has been observed that after the elimination, the number of new cases detected has fallen over the time.

In the Bogura district in Bangladesh, Lepra runs a community development program with a core focus on people affected by leprosy through the Bogura Federation.

From April 2015 to March 2016, The Further Action to Reduce Leprosy Burden (FARLeB) project Community volunteers were engaged in conducting community health education sessions, extended contact surveys and referral of leprosy suspects.

Objectives: This paper is an evaluation the results of the FARLeB project in the areas of new case detection and community awareness raising.

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Method: Under the FARLeB Project, a total of 24 (10 male and 14 female) community volunteers from Self Support Group (SSG) were selected and received training to engage in project implementation in Bogura district.

Results: In the Bogura district, a total of 5132 suspect cases of leprosy were identified during project period. Among them 3849 suspects (75%) were referred by the Community Volunteers trained by the project.

Lesson Learnt: Community mobilization and contact surveys led by volunteers is a unique approach for early case detection. Volunteers are well known and accepted by the community.

Impact: The engagement and empowerment of people affected by leprosy as community volunteers is one of the most significant impacts of the FARLeB project. The community volunteers have become very confident actors in their community.

#F-69

LEVERAGING TECHNOLOGY FOR PUBLIC HEALTH - APPLICATIONS FOR LEPROSY CONTROL

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Public Health care is an applied science and all around technology advances usually trickle down slowly towards health care. Hyper critical situations like pandemics including the present one, COVID 10, have opened the flood gates for relevant technology advances to be fast-tracked and applied for the benefit of the society. Current advances in technologies have resulted in vastly improved tracing, tracking, targeting, trending, tele mediating (health) and transporting services in "real time or near real time" for the first time ever in the history of humankind. Another uniqueness of COVID-19 management is the emergence of "digital first" applications compared to "digital support". In simpler terms, digital technology is at the fore front of globally coordinated and locally executed COVID- 19 management and without digital technology, we have reached a point, where we need to acknowledge that such a response is simply not possible.

Leprosy, a chronic infectious disease, *was announced as* a curable disease with the discovery of multidrug therapy (MDT). Contact tracing and prophylaxis with single-dose rifampicin was recommended as preventive measures. However there are several challenges in Leprosy management and eradication. There is no vaccine yet; finding new leprosy cases early needs active regular surveys to pick up hidden cases, identifying contacts/potential reservoirs from a large population who are usually neglected and difficult to access, tracing human to human Anthroponotic, zoonotic transmission and understanding the modes of disease transmission, managing chronic disabilities; are all resource intensive logistical and administrative challenges.

Digital first emerging technologies like computer vision for faster tracing signs and symptoms, GIS for longitudinal tracking, artificial intelligence for targeted and location specific interventions, tethering experts to remote patients thru tele medicine and drones for transporting the required medical products will hence forth play critical role in rapid mass screening, continuous management and possible eradication of Leprosy.

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#F-70

PREVENTION OF DELAY IN DIAGNOSIS AND TECHNOLOGY GUIDED INTERVENTIONS FOR LEPROSY ELIMINATION

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Background: The patient related delay can be attributed to the characteristic of the disease; the symptoms were not worrisome and the patient hoped that it will be cured on its own. There was a definite lack of awareness about the disease among the family members. Lack of information about the health provider in the place where they migrated for work also contributed to the delay. Health system delay can be attributed to the lack of interest and involvement of peripheral health workers. Seasonal migrations along with the socio-economic variables leads to delay in decision making. Population is at high risk of getting disability, deformity and defaulting treatment. The geographic Information System (GIS) is a tool increasingly used in Health Management Information System (HMIS) and in government to government (G2G) web-based monitoring systems by National Health Mission (NHM). Data sets related to health indicators intended to archive by 2030 are often shown as projections in graphs. GIS is an effectual addition. It is easy to spot priority areas/ health facilities and compare them with adjoining areas.

Objective: a) to study various factors affects delay in the diagnosis of leprosy and prevention of diagnosis delay. b) to study various technology guided intervention for leprosy elimination

Results and Conclusion: Delay in the diagnosis of leprosy various from places to place. There are many factors affecting the delay in diagnosis. Prevention of delay in diagnosis is essential for further spread of diagnosis and diagnosis. Result based IEC needed to conducted at villages level. GIS gives a broad visualization of analysed data and highlights the correlation between adjacent districts or states and across geographical borders. These maps point to high incidence and indicate priority areas that need to be targeted for interventions. It helps to identify villages/towns that have been persistently high or low endemic. Study reveal a strong Pareto / power-law distribution in leprosy cases – which a significant majority of cases come from a small set of villages in the state. Identified high-priority locations that call for a re-allocation of resources. This exercise will initiate a conversation on policy change towards a more data-driven approach to surveillance and eradication of Leprosy.

#F-71

ACESSIBILITY AND AFFORDIBILITY OF LEPROSY SERVICE AS COMPARED TO OTHER DERMATOLOGIC CONDITIONS

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Introduction: Availability and affordability are an important dimension to measures the access of dermatology health service.

The other dimension to measure accessibility is acceptability of the service by the local community. Worldwide skin disease are the 4th leading cause of morbidity and Skin diseases are very common in rural and urban areas of Ethiopia.

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Methodology: systematic review of the health care system

Result: In Ethiopia, health care delivery in dermatology is hampered by the low availability of Dermatovenereologists and currently there are around 160 Dermatovenereologists for a total population of more than 110 million. In developing countries dermatologic conditions such as infections, infestations and eczema are the common conditions but drugs to treat such conditions are not available at primary health care facilities which are easily accessible to the majority of the population.

One of the main challenges of dermatology service is affordability of treatment and costs for dermatology products are increasing globally.

There are very limited diagnostic facilities for dermatologic conditions even in teaching dermatology university hospitals.

Currently there is a community-based health insurance system which covers the medical service of patients who are enrolled in the insurance scheme which is challenged by the availability and affordability of dermatologic treatments.

Regarding leprosy service, MDT is provided free of charge in all health facilities but studies indicate that majority of health professional have lack of basic knowledge in diagnosis and treatment of leprosy.

Conclusion: Comprehensive leprosy rehabilitation service is provided only in few leprosy referral centers and the few available leprosy referal centers are not accessible to the majority of leprosy patients. Dermatology services are not available and affordable to the majority of the population.

Recommendation: The best cost-effective way of accessing leprosy and other dermatologic conditions is by conducting integrated skin health campaigns which could target early case detection of leprosy and other tropical dermatologic conditions, contact tracing and provision of PEP for leprosy contact cases.

Dermatology services are not accessible and affordable to the majority of the population.

Leprosy rehabilitation service is not available except in few leprosy referral centers.

#F-72

LEPROSY CARE IN COVID 19 - OVERCOMING CHALLENGES

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Introduction: Covid - 19 disease was declared as a pandemic by World Health Organization in March 2020. This led to a nationwide lock down to contain the disease. This resulted in the disruption of many regular health services, making management of diseases difficult. Leprosy is a public health problem in low- and middle-income countries and affected individuals need long-term follow-up. COVID 19 affected leprosy just as many other illnesses and its impact was multiplied because of several factors.

Impact of COVID on leprosy: The challenges faced by leprosy patients during the pandemic were listed under several points in their journey towards cure. These are: case detection, diagnosis of leprosy, prophylaxis, management of complications and compliance, access to POID and rehab services.

Vulnerable populations like children , people with disability, people who lived alone , youth with disabilities were specially challenged. The other challenges stemmed from operational issues like production and

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distribution of MDT, repurposing of all treatment centres to COVID care, social distancing regulations, livelihood and education issues and migration.

Overcoming challenges: The Govt of India, as a part of NLEP took some steps for screening some vulnerable populations.

IADVL and SIG came out with recommendations on the management of leprosy patients in context of the pandemic. Several other leprosy focussed NGOs like The Leprosy Mission implemented innovations like teleconsultation and mobile disability services for the community to mitigate these challenges.

Recommendations: Recommendations have been proposed addressing these challenges. Accompanied MDT, home delivery of drugs, telemedicine services, education, and counselling of leprosy patients on both covid-19 and leprosy are some of areas of preparedness. Essential leprosy services need to be maintained and improved access of services needs prioritization for all who are involved in service delivery.

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