

the specific approach of reaching the national goal of Elimination of Leprosy within stipulated time period. Though the experts at higher level formulate policies for this, the success of programme is always in the hands of those who implement it, i.e. Field Workers. In view of this, an attempt has been made to collect the views of Field Workers about the strategies presently used and their impact on reaching the elimination goal. A simple questionnaire consisting of five questions was distributed to 116 Field Workers who participated in the Regional Conferences of field workers, organized by H.K.N.S., Mah.Branch at Miraj and Panvel in March 2000. Of 116 participants, 91(78%) responded voluntarily. The analysis of responses revealed that over 95% field workers were well aware the statistical information about their district. Majority of the Field Workers express that –i) it is possible to Eliminate Leprosy in their district (66%) ii) single dose ROM is adequate for SSL patients(78%) and iii) MDT for 12 months is enough even for Smear +ve MB cases. Further analysis of the responses and the views about their utility during post-elimination period will be presented and discussed.

### POA 85

WHY THE DETECTION OF LEPROSY CASES DOES NOT DECREASE? POSSIBLE REASONS IN FORMER MEMBER COUNTRIES OF O.C.C.G.E.

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Surveillance of leprosy programmes from 1991 to 2000 in 8 West African countries, former members of O.C.C.G.E., allowed collecting core indicators of leprosy elimination. In all the countries, the point prevalence decreased towards the leprosy elimination threshold of 1 case per 10,000 inhabitants. Elimination goal was reached globally in OCCGE region and also in 6 of the 8 countries. However, the detection of new cases generally remained at the same level in the whole region but slightly decreased in two countries (Benin, Mauritania) and increased in Niger.

Reasons that could explain the sustained level of the detection during the decade are mainly epidemiological (the long incubation of the disease) and also operational. The operational factors are linked to the implementation of leprosy elimination activities in the countries: Training of health staff, MDT programme, Integration of leprosy programme in peripheral health facilities, Active case-finding during Leprosy Elimination Campaigns (LEC) or Special Action Projects for the Elimination of Leprosy (SAPEL), Updating of Leprosy Registers (ULR) and Leprosy Elimination Monitoring (LEM).

Based on these reasons, we are advocating for synchronised campaigns to eliminate leprosy (SCEL) in areas that are still endemic within the 8 countries. These SCEL would combine the set up of extended case-finding and treatment network with community involvement and large scale Information-Education-Communication activities.

[**Key words**] prevalence, detection, elimination and synchronised campaign

## POD & REHABILITATION

### PPOD 1

A FIELD MODEL FOR PREVENTION OF LEPROSY DISABILITIES – A STEP TOWARDS ACHIEVING A “WORLD WITHOUT LEPROSY”

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With our current commitment to attempt a cost-effective field -based model for reaching a “World Without Leprosy” (Yo Yuasa, 1998), we were disappointed at the efforts being made by the government and non-governmental agencies particularly in India, which contributes 60% to the new cases detected and

80% to the “disability pool” in the leprosy-endemic countries. It is well recognized that physical care is a crucial component to obviate the need for rehabilitation and to reduce the stigma. Unfortunately the uneven distribution of the estimated 1.5 million visibly disabled patients in India defies the implementation of a reasonable disability care programme. We report on an experiment on door-step delivery of such tools to patients living in rural terrain adjoining Bombay as well as some city slums through “mobile service units” (MSUs).

The study focused mainly on the identification of early nerve damage and treatment with prednisolone and preventing the worsening of disabilities following simple task-oriented training using the commu-

nity workers as well as the Government staff. 48 leprosy patients with signs of reaction (acute neuritis) were identified out of whom 31 patients also had early or partial nerve function impairment who were treated with WHO standard course of steroid therapy. 726 leprosy patients with various grades of disabilities were treated with the simple techniques delivered at the doorstep of leprosy patients. Service delivery was planned and implemented through the community volunteers. Monitoring the progress of disability status using simple grading system was done at regular intervals by expert teams using MSUs.

It is observed that the transfer of technology would be possible if the techniques and the components of POD (Prevention of Disability) services are simple. The involvement of Community Volunteers who can act as a catalyst between the leprosy worker and the leprosy patients will ease the logistic problems prevailing in urban areas in particular, though in rural areas and tribal belts, recruitment of such volunteers is relatively more difficult. This investigation revealed that in spite of the rapid advancement of the superspecialities in the *urbs prima in indis*, viz. Bombay, the outreach services to the deprived rural segment in just around a 100 kilometer radius was so poor as to make us feel diffident about the possibility of our living up to the definition of a "World Without Leprosy".

### PPOD 2

#### A IMPOTÊNCIA DA ÓRTESE NA AUTO-ESTIMA DO HANSENIANO PORTADOR DE GARRA MÓVEL NA MÃO

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O estudo foi realizado com 23 hansenianos, portadores de garra ulnar ou ulno-mediana móvel em uma das mãos, que fizeram uso de uma órtese, por um período de 3 meses. Foram utilizados neste estudo dois modelos, ou a órtese confeccionada em couro ou a confeccionada em material termoplástico de baixa temperatura. Após o uso, foram submetidos a uma entrevista com questões semi-estruturadas. As respostas foram agrupadas em núcleos temáticos e analisadas. Os resultados das falas dos núcleos temáticos revelaram melhora na auto-estima dos hansenianos, citando a órtese como responsável pela reabilitação dos movimentos voluntários dos dedos, firmeza e segurança no "pegar objetos", melhora na aparência dos dedos, maior confiança na realização de tarefas, melhora na qualidade de vida, motivação

e incentivo para participar de eventos sociais que antes evitavam ou se escondiam por vergonha e/ou medo.

### PPOD 3

#### A PROBLEMÁTICA DOS PACIENTES COM SEQUÊLAS - ULCERAÇÕES DE EXTREMIDADES INFERIORES - DECORRENTES DA HANSENIASE

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Apesar da redução, em mais de 80%, da prevalência da hanseníase no Brasil, registrada na última década, muito ainda deve ser realizado nos "Programas de Prevenção, Controle e Tratamento da Hanseníase". Este trabalho visa relatar a experiência da equipe de enfermagem na avaliação e acompanhamento de pacientes egressos (com alta medicamentosa) da hanseníase, mas que apresentam ferimentos de extremidades inferiores. Neste serviço há aproximadamente 30 pacientes em registro ativo para o tratamento da doença sendo que 28 pacientes comparecem para o tratamento das seqüelas, em especial, as ulcerações crônicas. Os resultados demonstram uma situação que conota relativa gravidade em função da duração, tempo de tratamento e estadiamento das feridas. Quanto ao sexo 65% eram do sexo masculino e 35% do feminino, sendo que há uma maior proporção nos indivíduos com sessenta anos e mais. Cerca de 50% dos pacientes apresentam a ferida há mais de vinte anos e nunca obtiveram resolução do problema. Quanto a tipologia cerca de 80% são lesões neuropáticas, ou seja, poderiam ser tratadas com a simples provisão de cuidados especiais como a remoção da pressão, confecção de órteses especiais, as demais são venosas (40%) e hipertensivas (15%), no momento da coleta de dados 30% apresentava infecção grave no local. A grande maioria dos pacientes não sabiam definir as causas da cronicidade das feridas e 50% apresentou imagem radiológica sugestiva de osteomielite demonstrando espessura total da lesão. Isto remete atenção especial para a gravidade do problema e para que as unidades básicas de saúde se estruturarem urgentemente para desenvolver ações mínimas para os cuidados com feridas crônicas utilizando os princípios de Tunner e a hierarquia para a cura sistematizada de feridas crônicas possibilitando que, as seqüelas tão temíveis e incapacitantes não determinem o maior problema para a extinção da hanseníase no Brasil.

### PPOD 4

#### A REPORT ON HOINA SURGICAL UNIT ACTIVITIES

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HOINA Leprosy Research Trust was established in Muniguda, Rayagada district, Orissa, India in 1983. The aim of the Trust is to locate Leprosy affected people in the district, including the local tribal belt, and to provide them with medical care. The entire population of Rayagada (over 900,000 people) is reviewed every three years. To date 10,323 cases of leprosy have been detected and treated.

In 1994 the Trust's Reconstructive Surgical Unit opened, in which the Leprosy-induced paralytic deformities of hands, feet and eyes are corrected. Here the physiotherapy team have screened a total of 559 patients with Grade II deformities. Of these 187 patients have been referred for reconstructive surgery, where one or more of 45 different operations will have been performed. In total the number of individual operations performed between '94 and Dec' 2001 was 1,486.

Patients are also referred from other districts of Orissa and neighbouring states. Regular follow-ups of these patients are continued regardless of distance. The Trust additionally hosts regular eye surgery 'camps' for patients both with and without a leprosy background. Reconstructive surgery for polio afflicted youth and the manufacture of artificial limbs and footwear are other aspects of the Trust's work.

All the costs incurred by treatment of the patients at HOINA are covered by the Trust

### PPOD 5

#### A SIMPLE TECHNIQUE FOR CORRECTION OF TRANSVERSE METACARPAL ARCH AND ULNAR CLAW

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The author's procedure (1985) has remained a good standard procedure for correction of the transverse metacarpal arch. While performing the 'lasso' technique for correction of the ulnar claw hand, the ulnar slip of the FDS is not included for the lasso but is sutured to the abductor digiti minimi muscle with part of the MP capsule at the level of MP joint. The tension is adjusted by grasping the tendon and capsule and pulling it upwards to get the transverse arch in

protraction position as much as possible. The surgical technique and long term results will be presented.

### PPOD 6

#### A SIX MONTH CREATIVE PHYSIOTHERAPY ATTACHMENT IN A RURAL HOSPITAL IN NIGERIA

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I spent six months in Ochadamu Hospital, Kogi State Nigeria under the supervision of the Leprosy Mission International.

**Aims:** To teach two Health Workers the basics of physiotherapy and set up a physiotherapy unit within the General Hospital and Leprosy Unit.

**Method:** Daily lectures and weekly tests to ensure that the health workers understood and retained theoretical and practical knowledge and information. Also weekly Health Education talks to patients to ensure their proper understanding of the importance of eye, hand and foot care. Simple visual aides and practical methods of education were used with limited resources.

Two physiotherapy units were constructed using materials purchased locally and assembled by a local carpenter and welder. Money was raised by charitable methods in the UK and sent to Nigeria.

**Outcome:** High scores in all tests were achieved by the two health workers. One health worker went on to Enugu to complete a qualification in Orthopaedic Nursing.

The physiotherapy equipment was built in the six months and used successfully by patients. The equipment included a unit to support an exercise bicycle, the ordinary bicycle could also be used for other purposes. We made specialised walking sticks, parallel bars, walking frames, orthopaedic benches and a purpose built practical orthopaedic appliance for contracted limbs. All the equipment was easily maintained and sustainable.

### PPOD 7

#### A SKIN FLAP FOR THE SOLE OF THE BIG TOE (HALLUX)

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A skin flap taken from the lateral side of the big toe (hallux) can be used to cover the area of sole between the metatarsal head and the hallux, when that

area presents recurrent ulcers due to scars or defectuos pad. The steps of the surgery and the results are presented by pictures.

### PPOD 8

A STUDY OF 300 LEPROSY AFFECTED PEOPLE, TO ANALYZE FUNCTIONAL OUTCOME AND LEVEL OF PATIENT SATISFACTION FOLLOWING, LASSO SURGERY TO CORRECT CLAW HAND DEFORMITY

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**Objective:** To study functional outcome and level of patient satisfaction following lasso surgery, for correction of claw hand deformity

**Design:** A retrospective study using patient clinical notes / files for data collection

**Setting:** The Leprosy Mission Hospital, Naini, is a 110-bed referral Hospital with leprosy and non-leprosy medical facilities.

**Participants:** This study includes 304 leprosy affected people, with a claw hand deformity of more than 8 months duration. These people are from the rural community and residents of nearby small towns and cities.

**Procedure:** In a lasso surgery the tendon of Flexor digitorum superficialis is looped through the proximal pulleys of the digits. This surgery has been in use for decades. 300 patients who underwent the lasso surgery have been analyzed, over a 4-year period from 1998 to 2001. Functional outcomes of hand and level of patient satisfaction have been analyzed for these patients, post-operatively. All surgeries were done in the same setup with uniformity of the Surgeon, Physiotherapist, Physiotherapy technician, Occupational Therapist and pre and post-operative exercise regimen.

**Outcome measures:** The percentage of people with good hand functions (>90% improvement) and a good level of patient satisfaction (80% satisfaction level), following lasso surgery

**Results and conclusions:** The analysis is in progress and the results will be presented at the Conference.

### PPOD 9

A STUDY OF INDIRECT LASSO SURGERY USING PALMARIS LONGUS AND EXTENSOR CARPI RADIALIS LONGUS FOR CLAW HAND CORRECTION

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**Objective:** To emphasize the utility of the Palmaris lasso and ECRL lasso as two reconstructive surgical procedures to correct claw hand deformity.

**Design:** A retrospective study using patient clinical notes / files for data collection

**Setting:** The Leprosy Mission Hospital, Naini, is a 110-bed referral Hospital with leprosy and non-leprosy medical facilities.

**Participants:** 27 people affected by leprosy with more than 6 months duration of claw hand. These people are from the rural community and residents of nearby small towns and cities.

**Procedure:** In patients with weakness of the long flexor muscles (FDS) and hypermobility of interphalangeal (IP) joints with risk of swan neck deformity, indirect lasso surgery is opted for. The results of the 24 Palmaris lasso and 3 ECRL lasso surgeries on 27 patients with claw hand deformity were analyzed and compared with regard to physical appearance of hand, joint angles, hand functions and level of patient satisfaction. Factors such as Surgeon, Physiotherapist, Physiotherapy technician Occupational therapist and pre and post-operative exercise regimen were constant

**Outcome measures:** The percentage of people with good physical appearance of hand (>90% improvement in physical appearance), good functional outcome of hand (>80% improved hand functions) and good level of patient satisfaction (>80% level of patient satisfaction), following indirect lasso surgery

**Results and conclusions:** The analysis is in progress and the results will be presented at the Conference.

### PPOD 10

A SYSTEM OF PREVENTION AND CARE OF DISABILITIES IN LEPROSY

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CLCP has refined its 'System of Prevention and Care of Disabilities in Leprosy' based on a continuous learning process with actively providing field based disability care services within different projects over the past decade. The system is based on taking a systematic and comprehensive approach to providing disability care services. The CLCP approach places

great emphasis on early treatment with MDT and proper reaction management as the most effective way to prevent disabilities. However appropriate tools and techniques have been developed to prevent and/or care for disabilities irrespective of the stage at which they develop. The key modalities include simple tools such as prefabricated hand splints or foot-drop splints, grip-aids, self-care ulcer kit, attractive MCR footwear and health education. These services can be provided by health care staff after minimal training. Reconstructive surgery and rehabilitation are also important elements of the CLCP approach. The computerized data management with special software simplifies monitoring of the disability care and its impact.

### PPOD 11

#### ALTERAÇÕES OFTALMOLOGICAS EM PACIENTES COM HANSENÍASE CO-INFECTADOS PELO HIV

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A endemicidade da hanseníase no Brasil e a atual possibilidade de cronificação da infecção pelo HIV sinalizam para a necessidade do desenvolvimento de estudos de grupos de pacientes co-infetados. Devido a alta prevalência de ambas as infecções estudos com análises dos indivíduos com a co-infecção possibilitarão a ampliação dos conhecimentos. Estudo retrospectivo do tipo série de casos dos pacientes co-infetados no período de 1997 a 2001 com diagnóstico clínico e laboratorial de hanseníase e de infecção pelo HIV. Todos os pacientes foram submetidos no diagnóstico a exame oftalmológico realizado por especialista como parte das ações de prevenção e tratamento das incapacidades físicas. Na distribuição por sexo foi encontrada predominância do masculino com 56% dos casos. Entre as formas da hanseníase, houve predomínio da paucibacilar com 67%. As queixas referidas foram embaçamento da visão, prurido, ardência, e dificuldade para enxergar perto. Ao exame oftalmológico observou-se: olho seco, hipoestesia corneana, retinite por citomegalovírus, olho vermelho e catarata. O maior percentual de hansenianos co-infetados pelo HIV pertencia à forma paucibacilar da hanseníase; a queixa ocular mais freqüente foi ardência; a alteração ao exame oftalmológico mais prevalente foi o olho seco; no grupo estudado apenas 1 paciente apresentou comprometimento ocular decorrente da imunodeficiência; são necessários estudos com maior número de pacientes e de seguimento em coortes de casos de hanseníase com a co-infecção pelo HIV.

### PPOD 12

#### AMPUTATION OF INDEX AND LITTLE FINGER STUMP. PERSONAL TECHNIQUE

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Of all the techniques proposed for amputation of Index and Little finger stumps, only two seem to have stood the test of time. 1) Amputation at the level of M.P. joint by disarticulation leaving the Metacarpophalangeal joint intact. 2) Amputation at the level of the base of the Metacarp.

Amputation by disarticulation is not only aesthetically poor (Littler) but the projecting Metacarpal head serves only as an impediment to the thumb-long finger web (Louis). Amputation at the base of Metacarp gives good aesthetic results but it reduces the power grip by about 20% (Murray). Further we believe that disruption of the fibrous skeleton of the transverse metacarpo-phalangeal arch –as it occurs when the transverse intermetacarpal ligament is cut– may weaken the tensile strength of the same.

**Our technique:** Racket-type of incision. The soft tissue is retracted, and the head of the metacarp is cut obliquely in a sagittal plane. The transverse intermetacarpal ligament is preserved. The dorsal interossei with the extensor tendons are sutured to the palmar interossei and flexor tendons so as to form a sort of soft-tissue hood covering the trabecular bone. Digital nerves need not be touched as neuromas do not occur in leprosy. Vessels are cauterized and skin closed with 04 silk or any other suitable material. The same technique applies to both thumb and V digit.

**Statistics:** Four cases of Index stump and 3 cases of little finger stump.

The functional and aesthetic results are excellent. Some of these patients have been reassessed after 2-4 years, the results are consistently good. Photos and diagrams are incorporated in the presentation.

### PPOD 13

#### AN ANALYSIS OF 304 PATIENTS, FOR APPEARANCE OF HAND AND LEVEL OF PATIENT SATISFACTION, FOLLOWING LASSO PROCEDURE

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**Objective:** To analyze physical appearance of hand (joint angles) and level of patient satisfaction following the lasso procedure for correction of claw hand

**Design:** A retrospective study using patient clinical notes / files for data collection

**Setting:** The Leprosy Mission Hospital, Naini, is a 110-bed referral Hospital with leprosy and non-leprosy medical facilities.

**Participants:** 304 leprosy affected people, who had completed or taking MDT, with a claw hand deformity of more than 8 months duration. These people are from the rural community and residents of nearby small towns and cities.

**Procedure:** The lasso procedure of looping the Flexor digitorum superficialis tendon through the proximal pulleys of the digits has been in use for decades. We analyzed the procedure of 304 operations done over a 4-year period from 1998 to 2001. An analysis of physical appearance by measurement of joint angles and the level of patient satisfaction was done. All operations were done in the same setup with uniformity of the Surgeon, Physiotherapist, Physiotherapy technician, Occupational Therapist and pre and post-operative exercise regimen.

**Outcome measures:** The percentage of people with good physical appearance of hand (>90% improved physical appearance of hand) and good level of patient satisfaction (>80% patient satisfaction level), following lasso surgery

**Results and conclusions:** The analysis is in progress and the results will be presented at the Conference.

### PPOD 14

#### ANALYSIS OF DISABILITY CASES IN AN URBAN LEPROSY PROJECT

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Active search was incorporated in the urban Leprosy project as surveys to detect patients with early signs of Leprosy so that the patients could be detected at earlier stages and treated appropriately to cure the patients with out any consequences like deformities. Social stigma in majority of the cases of Leprosy is due to visible deformities. Disabilities were presenting symptoms in a proportion of cases.

In the present study patients identified in the active search programmes and also the patients who have reported themselves for treatment were analysed retrospectively for the past ten years. The analysis was done to define the trend of disability among newly detected cases. The clinical profile of disabilities was compared with trends in rural projects. Age sex distribution of the cases with disabilities would be dis-

cussed to understand the operational aspects of care services to disability cases.

In the present study it was observed that though the actual number of cases with disability has come down from 98 to 25 the proportion of disability cases among newly detected cases still remains between 8-10%. 7453 patients were registered in the project and 752 patients (10%) had GII disabilities. 103 patients had plantar Ulcers. 26% of these new cases with disabilities have self reported for treatment at Urban leprosy clinics voluntarily.

The clinical profile and age sex distribution of the disability cases is a used as an important data base for planning care services for the patients affected by disabilities caused by Leprosy in the health programmes.

### PPOD 15

#### AVALIAÇÃO DE INCAPACIDADES FÍSICAS NEURO-MÚSCULO-ESQUELÉTICAS EM PACIENTES COM HANSENÍASE NO DISTRITO FEDERAL

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A Hanseníase é uma doença conhecida por gerar incapacidades físicas devido às peculiaridades e preferências de seu agente causador, o *Mycobacterium leprae*. Este estudo tem como objetivo estimar a prevalência destas incapacidades em mãos e pés em pacientes com Hanseníase do Distrito Federal. A metodologia utilizada foi de um estudo transversal descritivo, com registro do exame físico em protocolo próprio, em 81 pacientes portadores de Hanseníase nas suas várias formas clínicas, atendidos no Hospital Universitário de Brasília entre julho de 1996 a agosto de 1997. Observou-se que os graus 1 e 2 de incapacidades foram os mais freqüentes (19,8%), e que 56,6% não possuíam incapacidades físicas. Houve predomínio das lesões nos pés e os nervos mais acometidos foram o tibial posterior bilateral (22,2%), fibular profundo direito (18,5%) e nervo ulnar direito (12,3%). A perda sensitiva foi o acometimento isolado mais encontrado (19,8%) e a mão em garra a deformidade mais freqüente (9,8%). Deformidades associadas estavam presentes em maior quantidade em membros inferiores do que em membros superiores ou ambos. As formas clínicas que apresentaram maior grau de incapacidade física foram a Virchowiana e Dimorfa. É, portanto, importante uma avaliação minuciosa, nos segmentos de mãos e pés, a fim de evitar ou reduzir esta alta prevalência de incapacidades nos pacientes do Distrito Federal, através de medidas educativas e curativas pertinentes à terapia física e reabilitação.

**PPOD 16**

BACTERIOLOGICAL AND HISTOPATHOLOGICAL STUDY OF LEPROSY PATIENTS WITH LEG ULCERS AND ALSO IN VARIOUS PRE-ULCER STAGES

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Leg ulcers are a serious problem for patients with Hanseniasis. They can become very large and fester for decades. Some become malignant and amputation of the limb is indicated. The social disability of these patients with odorous discharge, together with unavailability of dressing material in the poor areas is very great. The physiopathology of these ulcers is poorly understood and is more frequent in South America than in the rest of the world. We have shown in a previous presentation that 15% of leprosy patients present ulcers and another 20% show the pre-ulcer stage (glossy skin – edema of the lower leg – hardening of dermal and subdermal layers – concentration of Lamprene in the distal third of the lower legs). We studied 19 patients in all stages in the evolution of their disease. They all had chronic ulcers in their legs or pre-ulcer stage. Skin smears were taken from both legs and the earlobe. The BI was the same in the ear and legs in all positive patients. Some healthy bacilli were seen in some leg smears. A 6mm punch biopsy was taken from the distal third of one leg on each patient. The histological studies showed thick subdermal lepromatous granulomas in the early stages of the disease. As the disease advanced the granuloma was seen to be transformed into fibrosis with islands of granuloma persisting in some cases. In old cases the fibrosis measured up to 1½ cm in thickness. In the early stages veins were seen with bacilli in the endothelium. In older cases the veins disappeared and only very few arteries with very thickened media persisted. The whole field had an avascular aspect. Even in old cases bacilli could usually be found. We believe, that the cause for the ulcers in the legs of lepromatous patients is related to the intense and deep fibrosis produced by the lepromatous granuloma, obliterating the subdermal lymphatic net and ultimately all perfusion. Early elevation in the ulcer stage might prevent some ulcers from occurring. Resecting the fibrosed tissue in toto and skin grafting is a successful treatment in our experience.

**PPOD 17**

BAMBOO PROSTHESIS FOR USAGE BY AMPUTEES PEOPLE AFFECTED BY LEPROSY

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The Christian Leprosy and Reconstructive Surgery Hospital in Mawlamyine, Myanmar is a referral hospital for the person affected by leprosy. Almost 80% of admissions to the hospital are by people suffering from Plantar Ulcers.

The follow-up of 2,000 people affected by leprosy treated in this hospital has been completed. Of these, 64 people with Planter Ulcers had undergone amputations due to varied reasons. Seven persons of the 64 had confirmed histopathology, as malignant carcinoma.

All the people affected by leprosy with amputations used bamboo prosthesis and a follow-up of this has been conducted for a period of 10 years.

**Conclusion:** The bamboo prosthesis is the only form of prosthesis available in the interior of Myanmar. It is easily available, technologically less expensive and only 10% of the people suffered ulcers due to its usage. A majority – 60% of the people were satisfied with the prosthesis. It is also easily repaired.

The drawback is that these prosthesis are not accepted by the urban people due to cosmetic reasons. The bamboo prosthesis lasts between 8 to 10 months. It is suitable for day to day work but not during farming activities.

On the overall, the bamboo prosthesis is ideal for the poor person especially those living in the rural areas of Myanmar.

**PPOD 18**

BASES ANATÔMICAS E CIRÚRGICAS DA LIBERAÇÃO ENDOSCÓPICA DO TÚNEL CUBITAL: SISTEMATIZAÇÃO DAS ESTRUTURAS INTERNAS

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Um estudo endoscópico de liberação do túnel ulnar foi realizado em 29 cotovelos de cadáveres não formolizados, seguindo-se de dissecação aberta para comprovação macroscópica e sistematização das estruturas internas seccionadas. Neste estudo constatou-se uma liberação total do sépto intermuscular (SI) em 65.5%; do retináculo epicôndilo olecraniano (REO) em 65.5%; da fâcia do flexor ulnar do carpo (FFUC) em 66%; da aponeurose profunda do flexor pronador (APFP) em 66.7%.

Quando se padronizou os portais proximal e distal respectivamente, com 1,0 cm proximal (D<sub>1</sub>) e mais lateral (ld<sub>2</sub>) à linha epicôndilo olecraniano (D<sub>1</sub>) e 2,5

cm distal ( $D_3$ ) e 1,0 cm mais radial ( $rd_3$ ) à linha epicôndilo olecraniano ( $D_1$ ), foi observado 82% de liberação total do nervo utilizando esta técnica. O índice de complicações de lesão parcial ou total do nervo foi de 16%, observados principalmente nos casos iniciais de padronização da mensuração topográfica. Conhecimento anatômico, habilidade cirúrgica e treinamento desta técnica em espécimes cadavéricas é recomendado antes da prática clínica.

### PPOD 19

#### BIOMECHANICAL PROBLEMS OF THE FOOT AND PLANTAR ULCERATION IN LEPROSY: USE OF PROSTHETIC INSOLES IN MCR FOOTWEAR

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All the joints of the foot contribute to effective heel-toe walking. Pathogenic destruction and malfunctioning of some of these joints as a result of leprosy will produce 'bio-chemical problems' and effect walking. This results in abnormal movements in the other joints of the foot leading to their malfunction, destruction, deformities and the development of abnormal pressure points prone to ulceration.

The aim of this study was to identify the different biomechanical problems encountered in the foot in leprosy patients, to study its impact on plantar ulceration and to assess the benefit of using prosthetic soles in MCR footwear to counter these biomechanical problems.

The biomechanics of the foot were assessed in 91 leprosy patients (Grade 0 - 41, grade I - 27 and grade II - 23 patients) in terms of inversion and eversion at the mid tarsal joint and pronation and supination at the mid talar joint. Biomechanics were found to be normal in 65 patients (71.4%) and abnormal in 26 patients (28.6%). Inversions of the foot was the most commonly encountered biomechanical change (8 out of 26 (30.7%)).

A simple assessment of the foot for identifying 'bio-mechanical problems' and principles for the use of MCR prosthesis (plantar metatarsal pad (PMP), Arch support, 'Hathi' or 'elephant' pad, tarsal platform, shaft pad and rocker bar) based on the abnormality are discussed. The applications of these principles will contribute significantly to improve POD and POWD activities

### PPOD 20

#### CENSO DE INCAPACIDADES DOS DOENTES DE HANSENÍASE DO ESTADO DE SÃO PAULO EM REGISTRO ATIVO NO ANO 2.000

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As mudanças nos sistemas de informações nacional e estadual e a padronização da classificação das incapacidades em Graus I, II e III vêm dificultando o conhecimento da prevalência das incapacidades decorrentes da hanseníase o que tem levado a dificuldades na organização de sistema de referência e contra-referência a níveis regionais e estadual. Este trabalho apresenta a proposta desenvolvida no Estado de São Paulo para conhecer a prevalência das incapacidades dos doentes de hanseníase em registro ativo no ano 2.000 com objetivo de subsidiar as necessidades e a organização de serviços secundários e terciários para a assistência aos portadores de incapacidades físicas. Para tanto foi constituído um Grupo de Trabalho para definição do instrumento a ser utilizado. Posteriormente, este instrumento de registro de incapacidades foi implantado em todas as regionais de saúde para ser aplicado no primeiro comparecimento no ano de todos os doentes em tratamento encaminhando-o ao nível central. O Programa de Controle elaborou software para consolidação dos dados, permitindo, por sucessivas aproximações, a identificação dos tipos de incapacidades, por município e por local de tratamento. Os dados consolidados foram posteriormente apresentados e discutidos com os serviços de referência regionais e estaduais para organização da assistência a estes doentes, permitindo um monitoramento desta assistência pelo nível central. Participaram deste censo 3110 doentes do total de 5902 doentes em registro ativo neste ano.

### PPOD 21

#### CHARACTERISTICS OF THE PLANTAR PROTECTIVE SENSATION IN LEPROSY CASES WITH AND WITHOUT ULCERS ATTENDED IN THE INSTITUTO LAURO DE SOUZA LIMA

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**Objetivo:** To be acquainted with the characteristics of the plantars protective sensation in leprosy cases with and without ulcers.

**Methods:** A retrospective study was done in the Instituto Lauro de Souza Lima, through review of the medical records of 150 patients attended during 1995 and 2001. The clinical forms of the cases studied were distributed as tuberculoid (41), borderline (39), lepromatous (67) and indeterminate (3). The age of

the patients ranged from 19 to 80 years, being the mean age 49 years. The characteristics of the patients were analyzed in respect to the presence or absence of plantar protective sensation evaluated by use of the Semmes Weinstein monofilaments and plantar ulcers.

**Results:** Plantar protective sensation was present in 29 patients (19.33%) and absent in 121 (80.66%). The analysis of 121 patients with loss of plantar protective sensation demonstrated that 38 (25.33%) presented plantar ulcers and 83(55.33%) did not. In regard to the 29 (19.33%) patients with preserved plantar protective sensation, the absence of ulcer was noted in all of the cases.

**Conclusion:** Since the majority of the cases without plantar protective sensation did not present ulcers, and the same occurs with those with preserved protective sensation, the preliminary conclusion is that methods for prevention of incapacities seen to be efficacious to prevent/treat ulcers in such conditions.

## PPOD 22

### CHOICE OF OPERATION FOR CORRECTION OF CLAW HAND

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During the 1950's and 1960's, only a few procedures involving tendon transfers, described or prescribed by Brand, were being practised for correcting the claw hand deformity and disability in leprosy. Today a variety of procedures are available and in this paper an attempt has been made to provide some guidelines for choosing the "right" procedure. Four different kinds of variables influence the choice. They relate to: (i) the patient, (ii) the surgeon, (iii) the infrastructural facilities and (iv) the procedure. Patient-related factors include their expectations (only cosmetic or some functional improvement, restoration to normalcy etc.) needs (grip, pinch, or any other specific requirement), capabilities (age, ability to follow our explanations and instructions), motivation level etc., and the state of the affected parts (presence of complicating features like contractures, hypermobile joints etc.). The surgeon-related factors include his/her familiarity with hand and hand surgery and experience in this kind of rehabilitation/tendon transfer surgery. The infrastructural facilities relate to providing pre- and post-operative therapy (at least essential physiotherapy if not physio- and occupational therapy) and operating conditions. Claw fingers are corrected using one of the following four strategies: (i) stabilizing the MCP joint or the PIP joint or both, (ii) providing an independent flexor for the proximal phalanx and thus abolishing the 'intercalated bone', or (iii) abolishing the biarticular system. The procedures may involve tendon transfer or they may not.

Each of these procedures has its advantages and disadvantages. Guidelines are suggested taking all these factors into consideration of which patient motivation is of paramount importance.

## PPOD 23

### CIRURGIAS NA HANSENÍASE: AVALIAÇÃO GERAL

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**Objetivos:** Avaliação geral de cirurgias realizadas na prevenção e reabilitação em hanseníase.

**Introdução:** A doença de hansen é uma doença crônica causada pelo *Mycobacterium leprae* (*M. leprae*), infecciosa em alguns casos, e afetando o sistema nervoso periférico, a pele e alguns outros tecidos (JOPLING, Mc DOUGALL, 1991). O Brasil é o segundo país no mundo em incidência de Hansen, só perdendo para a Índia, concentrando cerca de 85 % dos doentes do continente americano. No Ceará são registrados cerca de 1500 casos novos por ano, deste total 9,0% são crianças e 30% apresentam incapacidade física (MELO, J., et al., 1995). Estas seqüelas levam à morte social do portador do bacilo de Hansen, que em geral perambulam muitos anos em busca de um tratamento cirúrgico sem obter sucesso.

**Material e Métodos:** Foram realizado 200 procedimentos cirúrgicos, no período de março de 1999 a dezembro de 2001, em pacientes portadores de neurites hansênicas com ou sem deformidades instaladas. Todos os doentes tiveram diagnóstico e matrícula no Centro de Saúde Dona Libânia, unidade de referência no Estado do Ceará, e do Hospital Universitário Prof. Walter Cantídio da Universidade Federal do Ceará. A indicação cirúrgica obedeceu ao protocolo recomendado pela OMS (1998). A avaliação pré-operatória constando de anamnese, exame-dermato neurológico, inclusive sensitivo com monofilamento, rotina laboratorial, estudo de incapacidades. Uma avaliação fisioterápica pré e pós-operatório foi estabelecida e tratamento preventivo e de reabilitação programados. As cirurgias realizadas a céu aberto foram neurólises, tenoplastias, tratamento de mal perfurante plantar e/ou infecções ósseas, levouse em consideração índices de nervo acometido, sexo e idade dos pacientes.

**Conclusão:** Diversos são procedimentos cirúrgicos que podem ser utilizados nos pacientes portadores de hanseníase, tendo a importância da viabilidade na prevenção e reabilitação do dano neural agudo e crônico, bem como suas deformidades, na detecção precoce dos sintomas.

### PPOD 24

#### CLAW-HAND CORRECTION. A MODIFICATION

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Claw-hand deformity is possibly the commonest in leprosy-patients.

There are various techniques for the correction of this deformity. The modification proposed by us applies to all such techniques wherein a tendon graft is sutured to the dorsal expansion. Therefore it is applicable in cases of Brand's EF4T, Sublimis Transfer (Stiles Forester-Browne) Fowler and the Palmaris Longus + Fascia Lata.

It is not applicable where Zancolli's Lazo and capsulorrhaphy are used.

**Rationale:** The central tendon of the dorsal expansion is the single most important structure for the extension of Proximal Interphalangeal (PIP) joint. The Lumbricals act over the central tendon to achieve PIP extension; the Intrinsic contribute only when the Metacarpo Phalangeal (MP) joint is in extension. In patients with long-standing flexion deformity of PIP, the central tendon is lax and hence incompetent. Suturing a graft to a lax central tendon will not bring about extension of the PIP joint. The laxity has to be corrected. We use the 'Salafia's test' or the 'curtain' test to assess this laxity.

**Method of correction of laxity:** Plicate the dorsal expansion unto itself by taking a suture from one side to the other, and then suture the graft onto this plicated expansion; this is done circa 8-10 mm proximal to PIP joint; i.e. closer to PIP than to MP.

In severe forms it is advisable to take a sort of triangular suture (slides will be clearer).

We have operated more than 780 cases of claw-hand. Plication of dorsal expansion has been done in more than 1140 fingers: not all fingers need plication.

The aesthetic results are significantly better, and there is no deformity of restrain, following plication, in any of the fingers.

Excellent results: PIP at 180° in 1032 fingers: 90.52%

Good results: PIP at 160° in 93 fingers: 8.16 %

Poor results: PIP at < 160° in 15 fingers: 1.32%. In all these cases sepsis - due mainly to suture material - was the cause. Photos will illustrate the laxity of the dorsal expansion and the technique used to correct it, along with clinical photos.

### PPOD 25

#### COMMUNITY BASED REHABILITATION IN VADODARA AND SABARKANTHA DISTRICTS OF GUJARAT (INDIA)

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Health and Family Welfare Department of Government of Gujarat and German Leprosy Relief Association (GLRA-India), jointly planned to start Community Based Rehabilitation with Interest Free Loans in Vadodara and Sabarkantha districts of Gujarat. Two days Training Workshop for Community Based Rehabilitation of Chief District Health Officers, Regional Deputy Directors, Civil Surgeons, District Leprosy Officers, District TB Officers was organized at Vadodara by German Leprosy Relief Association - India. Rs. 1.50 lacs for each district had been sanctioned by GLRA-India for Community Bases Rehabilitation. In Vadodara district 29 patients and in Sabarkantha district 23 patients were selected for Interest Free Loan. Every month patients contribute a small installment as a loan repayment to District Leprosy Officers. At the end of every month from the collected recovered amount, new eligible patients are provided with Interest Free Loan. Thus, a smooth Community Based Rehabilitation system had been established in these two districts. The detail results will be discussed during the Congress

### PPOD 26

#### COMMUNITY BASED REHABILITATION OF PHYSICALLY HANDICAPPED INCLUDING LEPROSY DISABLED CASES - A REPORT

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In view of minimizing leprosy stigma, an attempt has been made to practice Community Based Rehabilitation for leprosy and non-leprosy physically handicapped persons in a combined program. In taluka Panvel, 29 physically handicapped persons (4 with leprosy and 25 without leprosy) were identified during routine leprosy survey conducted by leprosy field workers covering 13150 populations. Further surveys identified 125 disable patients. This report present and discusses an account of efforts further taken to:

1. arrange Handicap Certificate of the disabled.
2. evaluate their rehabilitation needs with the help of experts.
3. arrange for their vocational training.
4. provide financial assistance.
5. arrange reconstructive camps.
6. arrange experts visits for confirmation of disability.
7. Peoples participation through local bodies like Gram Panchayat, Panchayat Samiti etc.

The entire rehabilitation programme could be possible due to active community participation.

### PPOD 27

#### COMPARAÇÃO DA FUNÇÃO DE DUAS ÓRTESES NA REABILITAÇÃO DA MÃO EM GARRA MÓVEL DE HANSENIANOS

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O estudo objetivou a comparação da função de dois tipos de órteses dinâmicas 9<sup>de</sup> couro e de termoplástico utilizadas para a correção da garra móvel em indivíduos acometidos pela Hanseníase. Comparou-se a medida do ângulo de movimento (extensão) das articulações interfalângicas proximais dos dedos acometidos (goniometria), testes de força de preensão, de pinça lateral, ponta a ponta e três pontas com aparelhos de medição disponíveis no comércio (dinamômetro) e também desenvolvido um teste de função da mão previamente testado e padronizado em 42 voluntários. A mostra de estudo foi constituída de 30 hansenianos que apresentavam garra móvel, ulnar ou ulno-mediana em uma das mãos, com idade entre 20 a 81 anos, de ambos os sexos, submetidos ao uso das órteses de couro e de termoplástico. Primeiramente foi comparado o desempenho imediato de duas órteses e posteriormente reavaliada a capacidade funcional após seu uso por um período de três meses. Os resultados foram analisados estatisticamente nas duas etapas, mostrando na comparação do desempenho imediato que as órteses melhoraram o padrão de garra dos dedos acometidos e a órtese de termoplástico obteve maior correção da garra (85,5%) que a órtese de couro (53%). Após o uso das órteses por três meses, na garra ulnar foi obtida uma melhora de 76% e para ulno-mediana foi de 37%. Constatou-se que as órteses auxiliam tanto na correção da garra como na função motora e na melhora da auto-estima.

### PPOD 28

#### CONCOMITÂNCIA ENTRE NEUROPATIA HANSÊNICA E NEUROPATIA COMPRESSIVA MECÂNICA OU ESTADO DE DOR CRÔNICA

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Em pacientes com neuropatia hansênica pode haver concomitância com neuropatia de origem compressiva mecânica, originada das regiões cervical e lombar, e com estado de dor crônica, onde dor de longa duração é causada por fatores não-mecânicos relacionados a sensibilização dos sistema nervoso periférico ou central ou fatores psicossociais. O diagnóstico diferencial com essas duas condições é importante em pacientes com neuropatia hansênica persistente que não responde ao tratamento com imobilização nem com corticosteróides ou mesmo descompressão cirúrgica. Se o sintoma é causado predominantemente por uma dessas duas condições e isso não é reconhecido precocemente, há uma tendência a aumento progressivo da dose e cronificação do uso de corticosteróides, que além de não influenciar na natureza real do problema, ainda contribui com possíveis efeitos adversos advindos do uso dessa droga. Na neurite hansênica, que é um estado inflamatório, repouso e tratamento químico são necessários, enquanto a dor mecânica e estado de dor crônica são tratados com determinados movimentos. O presente trabalho apresenta casos em que o principal mecanismo responsável pela presença dos sintomas resultou da deformação mecânica em tecidos moles e/ou estado de dor crônica, identificados por meio de testes mecânicos desenvolvidos pelo fisioterapeuta Robin McKenzie. São 4 pacientes com diagnóstico de hanseníase na sua forma dimorfa, 3 deles do sexo feminino, 3 em alta por cura. Estes pacientes apresentavam sintomas neurais em membros superiores e/ou inferiores, com suspeita de reação com neurite, e não tiveram regressão satisfatória da dor com tratamento medicamentoso. Em tais pacientes o teste de movimentos repetidos alterou os sintomas diminuindo ou abolindo rapidamente a dor o que esclareceu que o fator predominante gerador do sintoma não era inflamatório/infeccioso e sim mecânico.

O diagnóstico diferencial entre problemas de natureza patológica hansênica, mecânica ou estado de dor crônica é importante na identificação e tratamento do paciente com neuropatia hansênica persistente que não responde ao tratamento com corticóide, nem com imobilização ou descompressão cirúrgica. No paciente com hanseníase pode ocorrer con-

comitância de neuropatia específica, de origem compressiva mecânica, originada das regiões cervical e lombar, e pode também, desenvolver estado de dor crônica, de longa duração causada por fatores não-mecânicos relacionados a sensibilização do sistema nervoso periférica ou central ou fatores psicossociais. Quando o sintoma é causado por estes fatores o paciente não responde ao tratamento medicamentoso e a tendência é cronificar o uso do corticóide que não influenciará a natureza real do problema. O presente trabalho apresenta casos em que o mecanismo responsável pela presença dos sintomas resulta da deformação mecânica em tecidos moles e/ou estado de dor crônica, identificados por meio de testes mecânicos desenvolvidos pelo fisioterapeuta Robin McKenzie. O valor clínico em diferenciar os sintomas originados do estado de neurite hansênica, dor mecânica ou crônica é que no primeiro caso, sendo um estado inflamatório, repouso e tratamento

### PPOD 29

CONTEMPORARY DESIGNER MCR FOOTWEAR FOR LEPROSY PATIENTS WITH GRADE I AND II DISABILITY

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Leprosy is a disabling neuropathy. Damage to the sensory component of the nerve results in loss of sensation or anesthesia; damage to the motor fibres leads to muscle paralysis and deformity and autonomic nerve damage results in dryness and cracks. The ultimate triad of anesthesia, deformity and ichthyosis predisposes the hands and feet to formation of localized points of excessive pressure, tissue destruction and trophic ulceration.

Micro cellular rubber (MCR) footwear has been used to effectively redistribute the pressure over a large area and thus prevent ulceration. Conventional models have been found useful but have carried with it the stigma of the disease. As a result, patients have often refused to wear them since they are easily recognized as leprosy patients and are socially distanced.

The need was felt to provide contemporary designer footwear, incorporated with MCR. After careful study of the different models available 4 models were chosen (2 models for men and 2 for females) for use in patients with Grade I disability. In patients with grade II disability velcro straps were incorporated in two of the models to enable opening from the top and incorporation of appropriate kinds of prosthesis (Hathi pad, Plantar metatarsal pad, Rocker Bar, Tarsal platform or Arch support).

The details of the above models, the advantages of each model will be discussed in terms of their usefulness and acceptability.

### PPOD 30

CORRECTION OF LAGOPHTALMUS AND ECTROPION IN LEPROSY BY THE TARSAL STRIP TECHNIQUE

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Blindness, one of the worst complications of leprosy, is most commonly originated by eyelid palsy. Inability to close the lids (lagophthalmus) is commonly accompanied by eversion of lower lid (ectropion). Both are caused by direct bacillary damage to the facial nerve, with paralysis of orbicularis oculi muscles. The eye becomes dry and is easily attacked by infections. Therefore, it can be said that correction of eyelid palsy is truly a surgical emergency in Hansen's disease. There are many operative techniques that may achieve this goal. Given the common circumstances of meager resources, lack of specialized personnel and scarcity of hospital environments, an operation to correct eyelid palsy in leprosy should be simple, ambulatory, effective and reproducible. Such qualities can be applied to the "tarsal strip" procedure, first described by Anderson and Gordy. The author has used this technique in facial palsy, either caused by Hansen's bacillus or from other reasons. In this work, the operation is described in detail and patient's cases are presented. The results have been satisfactory. The tarsal strip procedure can be performed in outpatient wards, under local anesthesia, with a very small set of surgical instruments and is easily learned. It can be repeated, when the case demands. It may help to preserve the patient's vision, something important under any circumstances and the more so when many patients may already be devoid of their touch sensation.

### PPOD 31

DEFORMIDADES ADVINDAS DE DANO NEURAL EM PACIENTES COM HANSENÍASE ATENDIDOS NO C.D. D.LIBÂNIA - CEARÁ, 2000 E 2001

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Hanseníase é uma doença infecciosa crônica que compromete nervos, pele e outros tecidos. No en-

tanto, a lesão neural constitui o maior problema pelo risco de incapacidades que podem ter caráter definitivo. Assim, correlacionamos todos os casos de pacientes com grau de incapacidades nível 2 – baseado nos atuais critérios do OMS – com sexo, idade, forma clínica e troncos neurais acometidos nos anos de 2000 e 2001, atendidos no C.D.D.L. Em 2000 foram atendidos 732 casos e, em 2001, 698, cujas avaliações de grau de incapacidades no início do tratamento registraram 46 (6,3%) pacientes com deformidades nível 2 em 2000 e 40 (5,7%) em 2001. Nos dois anos acumulados: 86 pacientes com grau 2 em 1430 casos (6,0%). Por ordem decrescente de troncos neurais mais acometidos, citamos: ulnar (55,8%), fibular (27,9%), tibial posterior (26,7%), mediano (23,3%), facial (4,7%) e radial (3,5%). Dos 86 casos analisados, 63 eram do sexo masculino e 23 do sexo feminino. Pacientes com idade entre 15 e 49 anos predominaram sobre a infância e a terceira idade. A forma dimorfa predominou entre casos e deformidades. Verificamos que havia frequência significativa maior para os idosos com acometimento de troncos neurais de membros inferiores e, para a faixa etária ativa, de membros superiores. Observamos ainda que havia correlação significativa do nervo fibular com o sexo masculino o que não ocorreu com os demais troncos avaliados.

### PPOD 32

#### DISABILITY MANAGEMENT PROGRAM – A MULTIPURPOSE SOFTWARE

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The disability management programme facilitates keeping track of the leprosy situation on a geographical basis - whether village, taluka, district or even state level. One can monitor the impact of campaigns by keeping track of suspected and confirmed cases in a special directory. Key epidemiological indicators can be easily calculated such as NCDR, new cases per 10,000 population, type of leprosy, gender, disability grade for any area. It also helps one estimate the requirements of health education materials or physical aids such as splints, grip-aids, self-care kits. Simple data entry forms are part of the software. The 'Disability Analysis Report' shows which body parts are affected, as numbers and percentages among the total cases, as well as rates in a given population. "At a glance report" helps keep track of early recognition of reactions and helps enlist the cases with established disability for reconstructive surgery. The follow-up of patients, improvement or deficiency can be analyzed quickly through service rendered report and other reports. Appropriate corrective actions can be

taken following analysis. DMP also has correction features for wrong data entry and import export facilities making it user friendly for multiple centres. Since program is only 2.5 megabyte in 3 floppies one can create different databases for different purposes or areas.

### PPOD 33

#### DISABILITY PREVENTION, CARE AND REHABILITATION ACTIVITIES IN THE INTEGRATED SET-UP: INITIAL EXPERIENCES

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Our project has developed the appropriate approaches for providing disability prevention, care and rehabilitation services in the integrated set-up. It includes the use of key modalities of disability prevention and care services for leprosy disabled to be extended to other disabled at the referral center. The camp or group therapy approach for reaching the backlog of cases also includes reconstructive surgery. The basic training of the general health care staff up to a level useful to cater to new and old cases is simple and field based. The initial experience with these approaches indicates that acceptance and proper management of disabled leprosy cases through the integrated set-up is feasible. The details of the approaches, key modalities and experiences will be presented.

### PPOD 34

#### DOES SSOD PREVENT PLANTAR ULCERS?

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Vellore district used to be hyper endemic for Leprosy prior to introduction of MDT. Though the prevalence has declined there are a large number of individuals with palmo plantar anaesthesia in this area. The Leprosy Control Unit of Christian Medical College, Vellore has been encouraging them to practice regular Soaking, Scraping, Oiling and Dressing (SSOD) to prevent damage to their feet. A cross sectional study was carried out to measure the effect of this practice. 93 patients with plantar anaesthesia were followed up in their homes. Their adherence to SSOD was measured using a structured interview schedule. Health of the feet was also simultaneously measured in terms of presence of callosities, cracks and ulcers.

**Results:**

38.7% of the patients practiced SSOD regularly at the time of the study. There was a strong association between knowledge and practice related to foot care. There was no difference in the frequency of callosities, or cracks between those who practiced SSOD regularly and those who did not. Those who practiced SSOD had significantly higher prevalence of plantar ulcers as compared to the rest.

It is possible that scraping with the stone itself could have caused injuries to the foot. On the other hand it is also possible that those who had ulcers were practicing SSOD more regularly. There is a need to evaluate the usefulness of SSOD using a longitudinal study design.

**PPOD 35****DROP FOOT CORRECTION BY TIBIALIS POSTERIOR TRANSFER TWO YEAR FOLLOWUP STUDY**

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Drop foot is one of the most disabling deformities among the leprosy affected. Paralysis of lateral popliteal nerve, the cause of this deformity, is quite often associated with paralysis of posterior tibial nerve and anaesthetic foot. Uncorrected dropfoot results in altered gait, equinovarus deformity, recurrent forefoot ulcerations and ultimately mutilations. Timely surgical correction prevents these complications. Tibialis posterior transfer is the most commonly performed surgical procedure to correct drop foot.

At Hoina Leprosy Research Trust Surgical Unit, Tibialis posterior transfer is one of the commonest surgeries performed, more than 300 such procedures having been done since 1994. In this study, data collected from 125 operated feet, with followup ranging from two years and more were analysed. Gait pattern, position of foot at rest and range of dorsiflexion were the criteria adopted for grading results. Results were good in 34.4 % (43), fair in 56 % (70) and poor in 9.6% (12). Good and fair results were considered satisfactory as they positively improved gait pattern, prevented abnormal weight distribution and consequent ulcers. Irregular followup, inadequate aftercare and infection accounted for poor results in the majority. Reasons for poor results were further analysed and discussed. More regularly. There is a need to evaluate the usefulness of SSOD using a longitudinal study design.

**PPOD 36****EHF DISABILITY SCORE NOT USEFUL IN THE EVALUATION OF POD ACTIVITIES**

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The EHF disability score of patients attending a specialised leprosy clinic in the capital of Sudan were used to evaluate the usefulness of the EHF score in the evaluation of POD activities. From 1997 to 2000, annually 6% to 18% of the patients attending Aburof Leprosy Clinic had a deterioration in EHF score between the start and end of MDT treatment. A comparable percentage of patients had an improvement in EHF score. The change in EHF score did not always reflect accurately the change in impairment. Moreover, there was no obvious change in care between the year with 6% and the year with 18% deterioration in EHF scores. The number of patients with full details was small (25-40 annually) and it is likely that inaccuracy of the impairment testing/ recording, and chance, have more influence on the change in EHF score than POD care. It is therefore argued that the EHF score is not useful in the evaluation of POD activities in integrated leprosy control programmes.

**PPOD 37****ESCOLARIDADE DO DOENTE DE HANSENÍASE, E PREVENÇÃO DE INCAPACIDADES: ESTUDO EM UM AMBULATÓRIO DE ESPECIALIDADES**

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A Hanseníase constitui sério problema de saúde do ponto de vista físico, psicológico, econômico e social, considerando inclusive a escolaridade. Nas ações da Prevenção de Incapacidades (PI), observamos que o grau de escolaridade, interfere tanto no autoconhecimento sobre a doença quanto na sua aderência aos cuidados preconizados. O presente estudo teve como objetivo identificar o grau de escolaridade do doente, relacionando-o com o grau de incapacidade instalado e o diagnóstico inicial. Trata-se de uma análise retrospectiva, com ênfase na epidemiologia, abrangendo uma população de 300 doentes (sendo que em 108 doentes em registro na década de 90, não encontraram o dado de escolari-

dade disponível). Houve maior predomínio da faixa etária entre 30 a 49 anos (48,2%), sendo 60% do sexo masculino e 40% do sexo feminino. A maior ocorrência foi nas formas avançadas da doença com 43,5% na forma Virchoviana, 25,5% Tuberculóide e 23,3% Dimorfa, prevalecendo os graus de incapacidades mais severos (2 e 3). A pesquisa é quantitativa com análise das variáveis qualitativa. A coleta de dados foi embasada nos prontuários, fichas epidemiológicas e avaliação de PI. Os resultados encontrados identificaram um percentual significativo de doentes com ensino fundamental incompleto (57,7%) e analfabetismo (15,2%) portadores das formas mais avançadas da doença e dos graus de incapacidades mais severos (grau 2 e 3). Os dados mostraram que à medida que o grau de escolaridade aumentou, o diagnóstico foi feito precocemente e houve diminuição significativa dos graus de incapacidades

### PPOD 38

ESTUDO COMPARATIVO DA EVOLUÇÃO DA FUNÇÃO NEURAL EM PACIENTES COM HANSENÍASE NO INTERVALO DE 1990 A 2002

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O objetivo do trabalho é reavaliar 85 pacientes com diagnóstico de hanseníase em tratamento no período de julho de 87 a julho de 90 na Unidade Básica de Saúde de Citrolândia – Betim/MG, que tiveram a função neurológica avaliada e monitorada naquele período, e comparar com a mesma avaliação realizada no 1º semestre do ano de 2002, determinando se houve melhora ou piora. Objetiva, ainda, determinar se o grupo de pacientes que apresentou alteração neural na última avaliação em 1990 tinha maior risco de desenvolver perda da função neural, e se tiveram algum problema com a função neural após esta data, se souberam identificar o problema e procurar o serviço e se tratar adequadamente.

### PPOD 39

EVALUATION OF EFFECTIVENESS OF LEPROSY REHABILITATION PILOT PROJECT FOR 3 YEARS IN FOUR COUNTIES IN YANGZHOU PREFECTURE OF CHINA

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To evaluate the effectiveness of leprosy rehabilitation pilot project for 3 years in order to provide scientific basis for further implementation. A total of 3125 active or cured leprosy cases were selected to

carry out early detection and treatment of neuritis, self-care of eyes, hands and feet, application of footwears, treatment of complicated plantar ulcers, and installation of prosthesis. The study was based upon the national uniform protocol. Among 8 cases with neuritis, nerve function was fully recovered for 20 nerves and significantly improved for 2 nerves. The secondary impairment on eyes, hands and feet was improved at different levels. 66.7% of complicated plantar ulcers were cured, among which 19.82% relapsed. The rate of cases with the suitable prosthesis was 83.79%. The leprosy rehabilitation pilot project is effective for preventing occurrence and worsening of disability and has play a positive role to strengthen the life quality of patients. However, there is still some difficulties in extensive implementation, and it should be integrated with socio-economic rehabilitation.

### PPOD 40

EXAME OFTALMOLÓGICO EM HANSENÍASE: COMPARAÇÃO DAS ALTERAÇÕES ENTRE CASOS PAUCIBACILARES E MULTIBACILARES

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Estudo descritivo dos achados oftalmológicos realizados no momento do diagnóstico entre casos paucibacilares e multibacilares. Foram examinados 107 casos no momento diagnóstico e o exame realizado por oftalmologista utilizando padronização (OMS). Do total de 107 pacientes, 77 foram classificados como multibacilares, sendo 75,4% do sexo masculino e 24,6% do sexo feminino. E entre o total de casos paucibacilares (30) 54,5% eram do sexo masculino e 45,5% do feminino. A média de idade dos pacientes foi semelhante entre os grupos 36,0: 41,0. As queixas oculares foram relatadas em percentual significativamente maior entre os pacientes paucibacilares (67,5%) em comparação com os multibacilares (36,3%). O percentual das alterações encontradas no exame oftalmológico foi semelhante entre os casos paucibacilares (60%) e multibacilares (55,8%). A ceratite de exposição, nódulo iriano e a atrofia de íris só foram observadas nos casos multibacilares, o que sugere, serem essas alterações, características dessa forma da hanseníase. A presença dessas alterações oculares deve ser diagnosticada e tratada precocemente para prevenir seqüelas irreversíveis. Assim sendo, o exame oftalmológico deve ser priorizado para todos os casos de hanseníase, independente da forma clínica.

**PPOD 41****FASCIA AND APONEUROSIS RELEASE FOR LONG FLEXOR CONTRACTURE IN CLAW HAND**

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In the long standing cases of the claw hand one often come across the long flexor contracture. The clinical test of MP flexion and IP extension often demonstrate that tendon contracture exist. Springing back of finger in flexion after passive stretching demonstrate that the 'tendon' contracture needs to be released. While release of deep fascia may help to a certain extent it is necessary to explore the deeper roots of the origin. The author's technique is carried out through a longitudinal "S" shaped incision anteriorly in front of elbow to avoid veins. The deep fascial envelope of about an inch is excised from the middle of the forearm to the ulnar border. The fingers are moved passively and tightness in the long flexors is noted. With careful dissection the aponeurotic fibres of the long flexors is incised till the tension in the passive stretch on the table is decreased substantially. The entire procedure is in the forearm and muscles are not slid as opposed to muscle slide operation. The plaster cast with fingers in extension completes the operation. The technique and results will be presented.

**PPOD 42****FOLLOW UP OF LEPROSY PATIENTS AFTER RECONSTRUCTIVE SURGERY**

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Long term follow up of patients who have been helped by surgical correction of their deformities is not well documented. We have made an attempt at this in a study.

The number of surgeries done was 169 from December 1996 to the end of 2001. The follow up was done at intervals of 3, 6, 12 months and then every year, thereafter. This was done by Physiotechnicians from projects from where the patients were referred. For those patients coming from outside the project areas, follow up was done by Physiotechnicians attached to the surgical centres. The parameters assessed include appearance, function, possible social and economic effects on the patients after the operations.

Over 90% of patients had restoration of the original appearance and function on the operated limbs.

Further details will be discussed.

**PPOD 43****GRAU DE INCAPACIDADE DOS PACIENTES DE HANSENÍASE NA ALTA POR CURA ACOMPANHADOS NO HRAN NO PERÍODO DE 2000/2001**

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Estudo retrospectivo e descritivo dos oitenta e quatro (84) pacientes que obtiveram alta por cura do Serviço de Hanseníase do Hospital Regional da Asa Norte (HRAN), Brasília – DF, Brasil, entre 2000/2001.

Tem como principal objetivo estudar comparativamente o grau de incapacidade física (0, I e II), no início e final do tratamento de hanseníase, discutindo as condições de alta dos pacientes, traçando um perfil da qualidade da assistência prestada pelo Serviço.

Analisa-se também, algumas variáveis tais como episódios reacionais e classificação operacional que interferem na evolução das incapacidades durante o tratamento.

Utiliza indicadores epidemiológicos e operacionais preconizados pelo Ministério da Saúde para avaliação do Serviço.

**PPOD 44****HANSENÍASE: CIRURGIA DE PREVENÇÃO E REABILITAÇÃO/ HUCFF/UFRJ**

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Desde 1992 o HUCFF tem se solidificado como referência para a região metropolitana do Rio de Janeiro, na assistência ao paciente portador de hanseníase. Enquanto órgão formador de recursos humanos, tem se organizado no sentido de integrar uma solicitação da demanda (o Brasil é o segundo país em número de casos), com a responsabilidade de formar profissionais aptos ao diagnóstico e tratamento da endemia.

Cumprindo o objetivo de treinar profissionais das áreas cirúrgicas e de reabilitação, o HUCFF realizou, no período de 30/11/98 a 04/12/98, o primeiro seminário de prevenção e reabilitação cirúrgica em hanseníase, envolvendo os serviços de dermatologia, ortopedia, serviço social e medicina física, bem como a Secretaria Municipal de Saúde/RJ.

Ao longo deste período de 3 anos foram realizadas 47 cirurgias, em pacientes submetidos ao pré e pós-operatório, no serviço de medicina física, após seleção no ambulatório de dermatologia.

Os autores apresentam a metodologia utilizada no primeiro seminário (foram realizadas 18 cirurgias em 5 dias), o processo de seleção dos pacientes, critérios utilizados, a implantação das cirurgias-fluxo na rotina do hospital, os resultados das cirurgias do ponto de vista funcional para o paciente e equipe, com ampla discussão do processo de pré e pós-operatório fisioterápico, da técnica cirúrgica utilizada, motivação inicial do paciente e suas expectativas quanto à cirurgia.

### PPOD 45

#### HELPING DISABLED LEPROSY PATIENTS WITH ADL – ASSESSMENT

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Leprosy cured persons with deformity or disabilities due to leprosy look forward to a “normal” day-to-day living. It is a known fact that ‘misuse’ and ‘disuse’ of insensitive and paralytic limbs are the main cause for deterioration of deformities and disabilities. The activities of daily life and the occupation of the patient are greatly altered by the type and gravity of their deformity and disability. The study examines the relationship between the ADL and the type and severity of deformity.

Specifically the study examines 209 leprosy patients with Grade-II deformities on the basis of International Classification of Impairments, Activities and Participation (ICIDH – 2 – WHO 1997). It outlines the ADL (Activities of Daily Life) of the patients in terms of self care, work and leisure activities and relative impact on the deformities and disabilities. Further, the study analyses the role and the impact of the socio-economic factors on their daily life. It suggests deformity related remedial steps for their ADL – to prevent further deterioration of their condition

### PPOD 46

#### HOW TO ORGANISE REHABILITATION SERVICES

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Disabled persons are located through an organized case finding programme and offered rehabilitation service, if unemployed or under employed.

An expert diagnosis is made of their employment needs and of their physical, mental and vocational resources.

Corrective surgery of therapeutic treatment may be provided or secured, if necessary for employment.

Prosthetic devices [limbs, aid etc.] may be provided or secured, if necessary for employment.

Expect counseling or guidance assist them to decide upon a suitable employment objective.

A plan is prepared outlining the steps or service needed to enable the disabled person to secure suitable employment.

Training carefully planned and supervised, is provided to those, who need such preparation for employment.

Maintenance during training may be provide in case of need.

Other necessary services, incident to the solution of personal or family problems are provided or secured.

The culminating factor and essential step in every case is entry in to suitable remunerative employment such placement in followed up to determine its lasting success or to provide any needed adjustment.

### PPOD 47

#### IDENTIFICAÇÃO DE INCAPACIDADES EM PORTADORES DE HANSENÍASE

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A hanseníase é um sério problema de Saúde Pública pelas complicações e deficiências físicas que gera. Este trabalho tem como objetivos levantar áreas de comprometimento em pacientes acometidos pela hanseníase em tratamento no ambulatório de controle e alertar profissionais da área da saúde quanto a necessidade da avaliação de incapacidades. Foram estudados 8 pacientes portadores de hanseníase, em tratamento quimioterápico no Ambulatório de um Hospital-escola, com idades entre 22 a 66 anos, no período de junho a agosto 2000. Utilizou-se o método descritivo exploratório de dados referentes a pacientes portadores de hanseníase em tratamento. O instrumento de coleta de dados foi baseado em um roteiro oferecido pela Secretaria de Estado da Saúde, para identificação das incapacidades, com 53 itens para determinar lesões em órgãos como o nariz, os olhos, as mãos e os pés. Os resultados obtidos mostraram que 87% dos pacientes faziam tratamento multibacilar, 50% já possuíam algum tipo de lesões em nariz ou mão ou olhos ou nos pés. No nariz as maiores ocorrências foram obstrução e formação de crostas; nos olhos, a diminuição da produção de lá-

grima e a perda da sensibilidade; nas mãos e nos pés, os nervos foram os mais lesados. Concluiu-se que a prevenção de incapacidades é um fator importante para a avaliação do portador de hanseníase, pois detecta elementos que não aparecem nas suas queixas.

**Unitermos:** Enfermagem, hanseníase, prevenção de incapacidade.

### PPOD 48

#### IMPLEMENTATION OF COMPUTERIZED HAND SCREEN

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Along with the efforts that have gone into eradicating HD, surveillance could be improved by the identification of patients who have peripheral nerve changes. Monitoring of peripheral nerves for changes and early treatment is an integral part of the prevention of disability in Hansen's Disease. The Hand Screen has been utilized at the National Hansen's Disease Programs for the last twenty years to document sensory and motor function in the hand. Data from the screen has been analyzed to establish the level of disability in the United States HD population and to review treatment outcomes. An electronic screen form is in development to allow the direct input of screen data into a database for subsequent analysis. The system utilizes an internationally available software program (Microsoft Access) for the input of information in the simple form of the Hand Screen and for the storage of data. The program allows easy entry of information, printing, and sharing of reports. Data is displayed in tables and can be easily exported for statistical analysis to review treatment outcomes and for surveillance activities. The process of the development of the screen, the input of data as well as the application of stored information will be presented.

### PPOD 49

#### INSTITUTIONAL STUDY ON NEW IMPAIRMENTS SEEN AMONG PATIENTS WITH ESTABLISHED NERVE FUNCTION LOSS

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Fifty-one patients with leprosy were admitted to LEPROA - HOINA Reconstructive Surgical Unit with nerve function loss during the period 1<sup>st</sup> Oct' 2000 to

30<sup>th</sup> Sept' 2001. All these cases were referred from different SET projects of Orissa for correction of their established deformities. During our initial assessments it was also found that these patients had disease involvement impairing other nerves besides those causing their deformities.

All the cases were commenced on steroids as per guidelines of 1mg/1kg body wt. to the maximum of 40 mg, with an initial trial period of one month. If no improvement was shown then the steroids were tapered off over 6-7 weeks. However with improvement the same dose was continued for a further 2-4 weeks and then tapered to ensure an administration period from 3 to 6 months.

Routine physiotherapy and protective splints were also given. All the patients who were included in the study additionally taught to rigorously care for their anaesthetized areas of skin.

At the end of treatment 27 cases were found to have improvement in motor status and 18 cases were shown to have improved sensation. 15 cases showed improvement in both areas. Three cases were given steroids only for tenderness of multiple nerves and all recovered completely without any surgical intervention.

11 patients reported that they had difficulties in daily activities at the time of detection of nerve function loss. Six of these had recovered by the end of treatment.

### PPOD 50

#### INTEGRATED REHABILITATION THROUGH VOCATIONAL TRAINING OF THE DISABLED INCLUDING LEPROSY - AN EXPERIENCE IN BOMBAY

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Physical handicap due to disabilities caused by a disease often perpetuate lack of confidence and dependency among the disabled persons including leprosy-affected persons. Regaining self-reliance is a slow process and does not occur spontaneously unless an opportunity is given to acquire technical skills. As literacy levels are admittedly higher among urbanites, the computer technology is penetrating even into the heart of the slums. Computer literacy as a qualification for job prospects becomes the felt need of normal individuals as well as the physically disabled including leprosy victims living in the slums. Our initial attempt to rehabilitate the handicapped youths along with leprosy cured in an integrated manner by offering vocational training in computer have enabled them to secure gainful employment and thereby improving the quality of their lives (Ganap-

ati et al, 1998). 42 disabled persons, of whom 13 were disabled due to leprosy, living in the slum has undergone 6 months computer training till January 2002. The training is conducted in collaboration with the local Computer Institutes situated in the slum as well as at the BLP's Vocational Training Centre. The training fees were raised through public donations.

A questionnaire study revealed that out of twenty trainees, nineteen (95%) trainees preferred computer training as it has better scope for jobs than the other vocational trades. Although 6 (30%) trainees secured job in the related field using the acquired skills, all the trainees felt that the training had given them the basic foundation necessary to pursue further career oriented training.

We present our experience on how the NGOs can help the disabled leprosy patients and handicapped persons through computer training, which have enabled them to lead a productive life.

### PPOD 51

#### INTEGRATED, HOLISTIC REHABILITATION ENDEAVOURS IN P.R. OF CHINA

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In this mountainous province of Yunnan in China, the Government reports 15,000-18,000 persons as being disabled as a result of former leprosy. Around 500 new patients are detected each year. 3,500 of the disabled who were treated prior to the introduction of MDT, live in isolated 'leprosy villages', many in mud housing built during the 1960s and little repaired, some lacking clean water and electricity. The remaining persons with nerve impairment were treated by MDT and live at home, most in isolated villages, many facing discrimination. The government has focused attention to new case finding and cure. With fewer new cases, skin department staff are now busy coping with other skin diseases and giving AIDS education. Thus they are able to give little care to the cured, disabled. The Disabled Persons Federation are giving support by ways of grants for surgery and aids such as some footwear, wheelchairs and walking sticks.

This paper outlines the leprosy work of Project Grace which is an international, Christian umbrella group with teams working in seven areas of the province in cooperation with the Government Poverty Alleviation Department. Their work is varied. Most teams run courses to train village doctors and school teachers. Some organise community development projects, and they have an expanding rehabilitation programme in support of the deaf, of

some younger persons disabled by poliomyelitis, of persons with serious burn scars and of persons with below-knee amputation.

This paper describes how the project is now initiating work together with persons disabled or socially isolated as a result of leprosy, integrating that support where feasible with that for the other disabled persons served by the project. Support is holistic and includes measures to minimise physical impairment, to maximise function, to improve income in ways that give minimal risk of injury, to improve social participation, to mend or replace some older, mud housing and in some areas to improve access to safe water. Plans are under way not only to work with village doctors but also to train some leprosy disabled persons as village doctors

### PPOD 52

#### IS LEPROSY MORBIDITY LESS? THREE DECADES OF HOSPITAL EXPERIENCE

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Though there is low leprosy prevalence all over, the deformities and ulcers is a major concern today. Thirty years of hospital data regarding the number of patients treated in O.P.D., I.P.D., deformities status and positive cases was analyzed to evaluate the change in the trend.

No. of patients per year								
	1972	1982	1990	1992	1995	1996	1997	2000
Total Out-Patients	4704	6974		4892				4668
Total In-patients	2383	2547		2500				2023
Ulcer treatment	1493	1775		1716				1514
Positive cases			184			102		81
Grade II deformity						1730	2512	3160

On Analysis, New active untreated cases are still present. No reduction in the number of patients with deformity and ulcers. Reaction cases are less. After the closure of Control Units, patients with severe ulcer and deformities attend the hospital despite availability of government treatment centres nearby.

Points to Ponder:

1. Strict vigil is needed in the field by skeletal staff to diagnose fresh cases and early nerve involvement.
2. Voluntary reporting and self-care practices are re-emphasised.
3. Complicated cases need care in specialized centres which are to be supported for sustained work.
4. History has taught lesson about hurried closure of programmes (e.g. resurgence of TB and Malaria).
5. Consumption of resources is high to restart than to maintain.

### PPOD 53

IS THERE A RELATIONSHIP BETWEEN LIGHT TOUCH-PRESSURE SENSATION AND FUNCTIONAL HAND ABILITY?

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**Introduction:** The Semmes Weinstein Monofilaments are designed to test light touch-pressure sensation. Thresholds measured by this tool have been related to levels of functional sensibility. It is known, that loss of sensation does not influence merely functional sensibility, it has also an impact on motor precision, control of grip force and fine coordination. For this reason a correlation between the sensory thresholds measured by Semmes Weinstein Monofilaments and manual function tests would add an important predictive functional value to this tool.

**Objective:** The purpose of this study was to investigate and compare the level of light touch-pressure sensation as tested with Semmes Weinstein monofilaments with the level of functional hand ability.

**Methods:** Thirty leprosy patients with some loss of sensation and 30 healthy controls were tested with Semmes Weinstein Monofilaments to determine their sensory threshold on the palms. All subjects were measured by the Medical Research Counsel muscle grading scale to exclude any motor impairment. Then their functional hand ability was tested via the Functional Dexterity Test and the Jebsen-Taylor Hand Function Test.

**Results and Discussion:** Statistical analysis comparing the sensory thresholds and their relationship to the scoring on the manual function tests will be performed. The results will be reported and discussed.

### PPOD 54

KUSHTROG KAYAKALP KARYAKRAM (RECONSTRUCTIVE SURGERY CAMPS) – THREE YEARS EXPERIENCE IN GUJARAT STATE (INDIA)

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Under the banner of Kusthrog Kayakalp Karyakram, Reconstructive Surgery Camp approach was successfully done in Gujarat, India. Three Mega Camps continuously 300 hours non-stop in January 1999, 500 hours non-stop in January 2000 and 300 hours non-stop surgery camp in January 2002 were organized at S.S.G. Hospital, Vadodara. In January 1999, 514 deformed leprosy patients were operated, in January 2000 total 1001 deformed leprosy patients were operated and in January 2002, 467 patients were oper-

ated during these mega camps. The eminent surgeons from all over India had attended these camps. The detail results and planning of these camps will be discussed in the Congress.

### PPOD 55

LAGOPHTHALMOS IN LEPROSY - A CURRENT STATUS REPORT FROM EASTERN INDIA

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Next to Cataract, Lagophthalmos is one of the major ocular complications in leprosy encountered in Eastern India where 8 0% of the Leprosy sufferers are PB patients and 20% are MB variety. But most of these leprosy sufferers remains untreated due to the lack of proper eye health care delivery system for lagophthalmos surgery and patient's apathy towards surgery. In a random rapid epidemiological assessment conducted in this part of the country in the October-November 2001, 125 patients with lagophthalmos in one or both eyes were examined. The associated ocular lesions include corneal exposure in 60%, cataract of different degree in 30%, exposure keratitis in 40%, hyposthetic cornea in 70%, corneal opacity in 56%, panuveitis in 10% and phthisis bulbi in 10% of cases. Lagophthalmos surgery was found to be performed only in 26 patients. With a few exception of Temporalis Muscle Transfer (TMT), the lagophthalmos correction was mostly limited to tarsorrhaphy. The Lagophthalmos Surgical Coverage (No. of operated eyes with lagophthalmos  $\times$  100 divided by Total No. of eyes with Lagophthalmos + No. of operated eyes with lagophthalmos) was only 15.7%. So there was an urgent need to provide proper surgical care for these neglected leprosy sufferers with lagophthalmos and high risk eyes. In this respect a special unit of Ocular Leprosy has been developed recently in a Non Government Eye Hospital to conduct screening camps by mobile team of Eye health Care personnel at the different aftercare leprosy colonies and clinics so as to identify and motivate the patients to undergo mass surgery in a camp fashion in the base eye hospital. The encouraging outcome of this model show an average outcome of five to six cases of lagophthalmos surgery per week.

### PPOD 56

LEPROSY FOOT DISABILITY IN NEPAL

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**Aim:** To document existing foot disability suffered by person affected by leprosy in Nepal, and to highlight factors most likely to endanger their feet.

**Methods:** Two hundred and fifty seven leprosy patients who received protective footwear were enrolled in this study. Five hundred and fourteen feet were examined and recorded. Data collected included altered foot mechanism, geographical location and occupation.

**Results:** Of the 257 subjects, 218 (85%) were male and 39 (15%) female. The average age was 42, ranging from 11 to 71. Grade 2 disability (WHO) was found on 75% and 25% had grade 1 disability. More than 2/3 (73%) had fairly normal gait (heel strike, midstance and toe off). Ninety-two (36%) of those examined had either unilateral or bilateral foot drop and 45 of these (49%) had surgical intervention. Almost 30% of feet (146/514) were found to have single or multiple claw toes. The forefoot was observed to be most liable to plantar ulcers: 50% of ulcers were found on the metatarsal head, 26% on toes, with heel (16%) and lateral border (8%) less commonly affected.

Sixty percent of those enrolled were farmers, 7% labourers, and 7% housewives. Sixty four percent lived in the Terai (plains), while 36% in hilly regions of the country.

**Conclusion:** This study has sought to document foot disability among Nepali leprosy patients, and to examine factors which may contribute to foot destruction. A further follow up study on the same subjects after a period of time is planned, to compare whether the state of foot disability remains the same or deteriorates further.

### PPOD 57

#### LEPROSY VILLAGE IN SHANDONG PROVINCE—PAST, PRESENT AND IN FUTURE

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In the late phase of leprosy control program in Shandong Province, there are few old and disabled ex-patients affected by leprosy in the 54 leprosy villages/leprosaria. This makes the running of these leprosy village/leprosaria more costly. In this paper, we reviewed history of the development and the roles of leprosy village and leprosarium. And then we analyzed the present situation of leprosy-affected people living in these leprosy villages/leprosaria in Shandong province, using the information collected from a questionnaire-based survey. Finally, we made

some suggestions and recommendations for policy makers concerned and leprosy control managers, in order to improve the present situation and better use of existing resources.

### PPOD 58

#### LESÃO DO NERVO FIBULAR EM HANSENÍASE: RESULTADOS OBTIDOS ATRAVÉS DE UMA ABORDAGEM FISIOTERAPÊUTICA

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A hanseníase é uma doença infecto-contagiosa, provocada pelo *Mycobacterium leprae*, de evolução crônica, caracterizada por manifestações dermatoneurológicas. O nervo fibular quando acometido acarretará alterações sensitivas, motoras e autonômicas, dentre as quais a motora é a mais incapacitante, causando o pé caído por paralisia ou paresia da musculatura dorsiflexora e/ou evertora do pé. O fisioterapeuta, profissional integrante da equipe de tratamento atua auxiliando o diagnóstico precoce das neurites, através de uma avaliação específica e traçando um programa cinesioterapêutico, que associado ao tratamento medicamentoso, promove a recuperação do paciente. Objetiva-se demonstrar as principais características da lesão do nervo fibular, devido à hanseníase, bem como a frequência desta lesão no Hospital Clementino Fraga/PB, enfatizando a importância da fisioterapia neste agravamento. Fez-se revisão bibliográfica e análise da incidência dessa lesão nos anos de 2000 e 2001. Oito pacientes apresentaram paresia/paralisia dorsiflexora até o mês de Maio de 2001, estando em fase de estudo o período de Junho a Dezembro do citado ano. A partir disto elaborou-se uma conduta fisioterapêutica baseada em cinesioterapia (exercícios, marcha com uso de órtese e preparação para cirurgia). A hanseníase é uma doença curável, porém suas complicações nem sempre podem ser revertidas totalmente, dependendo da intensidade do dano neural, da precocidade do diagnóstico e de um tratamento eficaz.

### PPOD 59

#### LIPOENXERTO PARA AMIOTROFIA DO 1º ESPAÇO INTERDIGITAL

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A técnica consiste em retirada do enxerto gorduroso da região para – umbilical com incisão transversal de

5 cm de comprimento. Retira-se o lipoenxerto de aproximadamente 10 ml, conforme a necessidade da área receptora. Sutura por planos da área doadora, e faz o preparo do lipoenxerto retirando todo o tecido conjuntivo. Faz-se uma incisão de 4 cm na prega interdigital palmar do 1º espaço entre a pele volar e dorsal (na área de intersecção) e diseca-se o espaço cutâneo onde injeta, com uma pinça o lipoenxerto. Sutura-se o subcutâneo e a pele. Com 7 anos de follow up não foi observada reabsorção do enxerto.

### PPOD 60

LONG TERM EVALUATION (17 YEARS) OF A PERSONAL TECHNIQUE FOR OPPONENS PLASTY

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Low median nerve palsy is usually accompanied by low Ulnar nerve palsy causing Ulnar and Median Claw and Opponens palsy.

None of the techniques wherein Intrinsic muscles are used pro Opponens can be applied to leprosy because all the Intrinsic are usually paralyzed. In hypermobile fingers, the route of the graft and the attachment as suggested by Bunnel and Brand- may lead to a 'Swan-neck' of thumb (Tsuge) because -we believe- one of the tails presses dorsally over the Metacarpophalangeal (MP) while the hyper-flexion of the distal phalanx is not attended to.

**Our modification:** aims at correcting these deformities.

The chosen motor tendon - the Sublimis or the Extensor Indicis Proprius- are routed through a small incision just distal and medial to Pisiform bone and split in 3 tails; the pisohamate ligament will be acting as a pulley. One tail is sutured on the dorsal expansion at the level of Interphalangeal (IP) joint, after plicating the dorsal expansion and thus correcting the hyperflexion. The other two tails are sutured at the level of MP joint. Of these, one tail is routed dorsally to MP under minimal tension, while the other is passed ventrally under tension; this will act as a tenodesis of the MP, further will replace -partly- the action of the paralyzed adductor and thus prevent the 'Swan-neck' deformity. In the last 17 years we have operated 595 cases; in 87 cases (prior to 1987) the Brand's technique was used, our technique in all other cases.

**The results:** 508 cases were operated with our technique: 472 (93%) had excellent functional and aesthetic results; 36 (7%) had poor results due mainly to sepsis and not technical errors. We achieve excellent extension of PIP joint and have never had a case of Swan-neck deformity of the thumb following surgery. In order to assess the pre and post operative function of the thumb we use a modified Kapandji

scale. Clinical photos and drawings will highlight the mechanical problems leading to opponens palsy and the significance of the proposed corrective steps.

### PPOD 61

LONG TERM FOLLOW UP OF PATIENTS WITH MALIGNANT CHANGE IN PLANTAR ULCERS IN LEPROSY

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Malignant change is a known complication of plantar ulcers in leprosy. Often the plantar ulcer is chronic and becomes a cauliflower growth or a flat lesion with everted edges. On clinical suspicion of malignancy a biopsy is done. If the ulcer is found to be malignant, it is usually a well differentiated squamous cell carcinoma of the skin. The treatment of choice is a wide excision providing a 5 cms margin.

In this study, 110 cases who underwent surgery for malignancy in plantar ulcer are studied retrospectively. The age, sex, duration of the ulcer, site and size of the ulcer, histology and the presence or absence of metastasis at the time of diagnosis were analysed. Depending upon the site and size of the ulcer either a wide excision and skin grafting (24%) or a radical procedure was done (76%)

Long term follow up of 90 patients is presented. The duration of the follow up ranged from 10 to 20 years. Four patients died of causes not related to malignancy of plantar ulcer. Four patients who had poorly differentiated squamous cell carcinoma developed metastasis. 12 patients were lost to follow up.

Adequate wide local excision and skin grafting where possible or local radical excision give good results in treatment of malignancy arising in plantar ulcers.

### PPOD 62

LOSS OF DORSAL SENSATION COMPARED TO LOSS OF PALMAR/PLANTAR SENSATION OF LIMBS IN LEPROSY PATIENTS

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**Introduction:** Loss of light touch sensation in the limbs is a frequent consequence of nerve function impairment. In leprosy programs, sensory testing is routinely performed on the palmar/plantar aspect, usually not on the dorsum.

In Israel, dorsal sensation is routinely tested.

**Objective:** This study compares loss of plantar/palmar sensation to loss of dorsal sensation in hands and feet, and investigates the relationship between them.

**Material and methods:** Data was collected from 125 leprosy patients' files.

These patients were tested with SW Monofilaments. The threshold of loss of sensation was defined as a lack of response to 4.31 filament.

**Results:** Prevalence of loss of dorsal sensation in hands was 63.2% compared to 46% loss of palmar sensation. In feet, the prevalence of loss of dorsal sensation was 70.4% compared to 66.8% loss of plantar sensation, heels excluded. In 31.9% of patients with normal palmar sensation, loss of dorsal sensation was present. In feet, loss of dorsal sensation was found in 12.5% of patients with normal plantar sensation.

**Conclusion:** In hands and feet, loss of light touch sensation on dorsum occurs more frequently than loss of palmar/plantar sensation. Full nerve function assessment will therefore be incomplete if dorsal sensation is not tested, especially in patients with normal palmar/plantar sensation.

### PPOD 63

MAGNITUDE, TRANSCENDENCE AND VULNERABILITY OF THE LATE REACTION IN LEPROSY PATIENTS: IMPLEMENTATION OF A SPECIFIC CARE PROGRAM

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The leprosy, cronical infection disease, is a large public health problem. If not diagnosed and treated, it may cause physical disabilities in Hansen's diseased patients, due mainly to reaction episodes. The leprosy reaction and its grievance, may happen before, during and after multidrug therapy treatment. The aim was to evaluate the magnitude, transcendence and vulnerability of late reactions; calculate the epidemiological and operational control indicators; implement action for monitoring the patients after treatment, through the analysis of charts of 335 leprosy patients in the Jaraguá Health School Center (CSE - Jaraguá) and 256 leprosy patients in the Clinical Center of the University Hospital (HC-UFU). A total of, 84 patients (25%) attended in CSE - Jaraguá and 66 patients (25.7%) attended in HC-UFU, due to reactive episodes after treatment. In terms of transcendence, the disability grade 1 was found in 21.2% and grade 2 in 25.8% of patients that presented reaction after treatment in the HC-UFU. In the CSE -

Jaraguá the disability grade 1 was found in 15.5%, grade 2 in 6% and grade 3 in 2.5%. About the vulnerability, the implementation of the Associated Macroregional Referral Center in UFU, involving both the CSE - Jaraguá and HC-UFU, was able to subsidize the implementation of a specific leprosy control program for follow up of these leprosy patients after treatment in city district and region.

### PPOD 64

MANAGEMENT OF LAGOPHTHALMOS

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205 Leprosy cured persons with ocular complications were treated in Surgical Unit, HOINA Leprosy Research Trust, Muniguda, Orissa, between 1997 July to Aug' 2001. They were referred from different Projects of LEPRO India viz. Koralep, Junlep, Bolep, HOINA and Mayurlep. Out of 205, 56 persons had Lagophthalmos. 36 had bilateral and 10 had unilateral. 10 cases were unfit for operation due to other ocular complications. In total 62 eyes were operated for Lagophthalmos giving benefit of doubt to 10 persons having one eye incomplete paralysis. The patients operated were predominately males and elderly age group (40-50 Yrs.). 52 were MB cases. 60 operations of TMT-2T (Johnson's method) were done and 2 lateral tarsorrhaphy in rest 2 cases. The maximum period of follow up was +3 Yrs.. Results were analysed after last follow up. Integration was good in all cases. Think blink was fair in maximum number of cases. Only 2 cases needed retightening of suture and one patient had opening problem. It can be concluded that TMT-2T Johnson's method is a very effective procedure for correction of Lagophthalmos by a skilled and experienced surgeon.

### PPOD 65

MEDIAL PLANTAR ARTERY ISLAND FLAP FOR CHRONIC HEEL ULCERATION

Richard Schwarz

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Green Pastures Hospital, run by the International Nepal Fellowship, is one of three tertiary referral centres in Nepal to which people affected by leprosy are admitted for reconstructive surgery.

Chronic heel ulcers can be a difficult problem for the leprosy patient, necessitating many admissions to hospital with resulting loss of time at work. The risk of subsequent squamous cell carcinoma is also present in chronic ulcers.

To correct the defect and prevent continuing ulceration both removal of underlying bone spurs and coverage with healthy sole skin with underlying fat pad are often indicated. We report nine patients with chronic ulcers of the heel or carcinoma who underwent medial plantar artery island flap from the instep to the heel. Operations were carried out between 1997 and 2001. The average size of the ulcer was 3.5 cm and the average duration was 6.8 years. Eight of the patients had an associated bone spur excised. There was one minor post-operative wound infection and one minor dehiscence, both of which healed without further intervention. Follow-up at an average of 14.5 months demonstrated no recurrence of ulceration.

We would recommend this flap as suitable in the treatment of recurrent or chronic heel ulcers as it removes the ulcer with the associated scar tissue and restores full padding to the heel.

### PPOD 66

#### MEDIAN NERVE REPAIR USING MUSCLE GRAFT IN LEPROSY

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Median nerve paralysis results from segmental (localized) lesions in leprosy. Nerve repair could not be successfully done in these hands as the nerves used conventionally as grafts were also affected by the disease. In this study, denatured autologous muscle, established as graft in the surgery of peripheral nerve injuries was used to repair leprosy affected median nerves in selected hands, primarily to restore sensibility in the palm.

At Sacred Heart Leprosy Centre, autologous muscle was used as graft to repair median nerves in 10 hands with total irreversible paralysis due to leprosy, during the period between 1989 and 1994. Objective sensory assessments with graded nylon filaments, weighted pins and biothesiometry and subjective assessments were done prior to surgery and at six monthly intervals thereafter.

Follow-up data were available for 9 hands, for periods ranging from 7 years to 11.5 years (mean 8.25 years) and were analyzed. For grading the results, both objective and subjective sensory assessments were used as criteria. Results were successful in 5 hands, Grade I in 2 and Grade II in 3. This study showed that the technique of using muscle as graft works in nerves affected by leprosy and remaining part of the nerve including distal sensory apparatus remains viable.

### PPOD 67

#### METHODS TO PREVENT NERVE FUNCTION IN LEPROSY BY DETECTING EARLY SENSORY NEUROPATHY – AN OVERVIEW

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Although the early detection and prompt treatment has considerably minimized the proportion of disability among new cases, invariably certain number of cases develops neuropathy leading to deformity and disability. It is mandatory for instituting special intervention as well as to monitor the response to such interventions to evaluate the nerve function status of individual patients. Since the earliest manifestation of nerve damage in leprosy is mainly sensory neuropathy, it is important to detect and treat before it becomes irreversible. The availability of different methods to evaluate the nerve function loss to judge the actual neuropathy status can be misleading. The reliability and reproducibility of sensory testing is dependent upon a standard method of application. Studies on the use of SWM Filament to detect the early sensory changes indicate that it is sensitive and reliable. However the limitations of such tests have made it difficult to incorporate these modalities in a routine leprosy control programme. Efforts have been made to device a standard tool to make the sensory testing more sensitive and reliable. There is no uniform pattern of sensory neuropathy and the severity of loss in terms of duration and extent is always uncertain. It is also necessary to differentiate whether the sensory loss is directly a consequence of the peripheral neuropathy or due to other factors.

We made an attempt to review different sensory testing methods published in literature to compare their merits and adaptability in routine leprosy control programmes. The advantages and efficacy of various studies will be analyzed and presented with a suitable recommendation.

### PPOD 68

#### MR IMAGING OF NEUROPATHIC FEET IN LEPROSY PATIENTS SUSPECTED FOR OSTEOMYELITIS

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The MRI of 12 leprosy patients with 18 events of suspected osteomyelitis were retrospectively analysed.

All patients had longstanding neuropathic feet with neuro-osteoarthropathy. All patients underwent contrast enhanced MRI with Two Point Dixon Chemical Shift Imaging as fat suppression technique. For the analysis of osteomyelitis primary and secondary MRI signs known from diabetic feet literature were used. Golden standard for the diagnosis osteomyelitis was a positive culture and/or histopathology. Clinical outcome after 6 months, using a combination of clinical criteria, was retrospectively evaluated when the golden standard was not available or not conclusive.

MRI was positive for osteomyelitis in 17 of 18 events and negative in 1 event. Compared to the golden standard and/or clinical outcome there was agreement in 16 of 17 events positive for osteomyelitis and in 1 of 1 event negative for osteomyelitis.

We conclude that MRI can serve as a one step diagnostic strategy to diagnose osteomyelitis in leprosy patients with a longstanding neuropathic foot and neuro-osteoarthropathy suspected for osteomyelitis.

### PPOD 69

#### MRI IN CLINICALLY ASYMPTOMATIC NEUROPATHIC LEPROSY FEET

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MRI examination was performed in clinically asymptomatic neuropathic feet of leprosy patients. Ten adult leprosy patients with normal or nearly normal shaped neuropathic feet, without a history of osteomyelitis or clinical symptoms of inflammation at the time of MRI were analysed. All patients underwent the MRI protocol with the inclusion of Two Point Dixon Chemical Shift Imaging as fat suppression sequence.

In 90% of the patients MRI-abnormalities were found in the MTP 1 region. Abnormalities ranged from degradation and interruption of the subcutaneous fat, plantar fascia, and small fistula to effusion/synovitis in the MTP 1. Bone marrow enhancement was seen in 3 patients.

Our study reveals significant MRI findings, which may possibly be related to the development of ulcerations. We conclude that with the use of MRI important changes are found in clinically asymptomatic neuropathic feet of leprosy patients. The conse-

quence of this study could be that more attention is paid to the clinical examination and longitudinal follow up of leprosy patients with asymptomatic neuropathic feet.

### PPOD 70

#### NASAL RECONSTRUCTION IN LEPROSY

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Green Pastures Hospital, run by the International Nepal Fellowship, is one of three tertiary referral centres in Nepal to which people affected by leprosy are admitted for reconstructive surgery.

Destruction of the nasal septum and nasal bones by mycobacterium leprae and subsequent infection is still regularly seen in leprosy endemic areas. The social stigma associated with this deformity is significant in many countries. Different procedures have been developed to reconstruct the nose.

Patients operated on at Anandaban Hospital (Kathmandu, Nepal) and Green Pastures Hospital (Pokhara Nepal) between 1986 and 2001 were reviewed. There were 49 patients with an average age of 47.5 years, operated by 6 different surgeons. Deformities were mild (14), moderate (23) and severe (12). Bone grafting with skin flaps was done in 14 cases, bone grafting alone in 10 cases, flaps alone in 7 cases and cartilage grafting in 10 cases. In 3 patients a prosthesis was inserted and in 3 patients a gullwing forehead flap was performed. Grafting with conchal cartilage was associated with the best cosmetic results and had minimal complications. Bone grafting either with or without flaps was associated with a 50% complication rate, of infection or graft resorption. In mild to moderate deformities cartilage grafting is recommended while for more severe deformities cone grafting with fixation and skinflaps is recommended. In very severe cases reconstruction with a forehead flap gives good results. These procedures should only be carried out by an experienced surgeon and peri-operative antibiotics must be used.

### PPOD 71

#### NEED FOR REHABILITATION OF LEPROSY PATIENTS

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As in other diseases or conditions associated with disability and/or deformity, rehabilitation services are also needed for leprosy patients. The introduction

of effective methods of treatment-medical, surgical and physical has brightened the prospects of cure of the disease. As a result, rehabilitation of a leprosy patients has now become practicable. Cure of the disease does not have much meaning for the patient if he still remains socially and economically dislocated.

The general principles of rehabilitation of leprosy handicapped persons are no doubt the same as those for other handicapped persons. However, there are two significant and vital differences. First, while other handicapped persons do not carry any stigma and/or are not socially dislocated, leprosy is unfortunately associated with a stigma and patients suffering or having suffered from this disease are apt to be socially ousted and considered as outcasts from society.

In other diseases, the question of rehabilitation is considered after the treatment of the patient has been completed, but in leprosy the process of rehabilitation should start as soon as a diagnosis of the disease has been made. Because of the immense difficulties in rehabilitation after he has been socially and economically debilitated or dislocated, efforts should be made to prevent debilitation.

There are vast numbers of leprosy patients representing an enormous waste of human resources who are disabled physically, socially, spiritually, vocationally or economically. We are to prevent this from occurring in the first place.

### PPOD 72

#### NEW CONCEPT IN FOOT WEAR FOR LEPROSY PATIENTS WITH PLANTAR ULCER

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Custom made Microcellular rubber foot wear with rigid sole has established their importance in healing plantar ulcers and prevent recurrence.

Arch support has the important role of increasing weight bearing area and scooping is helpful in making the ulcer to take less weight.

Our concept incorporates all the above plus use of silicone gel inside the arch support and scooping is done on the bottom side rather than the foot contact side of the MCR.

The silicone gel is incorporated in the area of scooping and the sole. That is in between the insole and the sole. This help in creating a water bed like effect in the areas where it is required. This has the positive effect of decreasing the friction effect as well as reducing the weight bearing. Such effect is given where ever it is required.

The criteria involved, methods, patient acceptance and the benefits will be discussed.

As seen in 500 patients will be discussed, Colr slides os the whole procedure will be shown.

### PPOD 73

#### NOSE RECONSTRUCTION IN LEPROSY

Tufi Neder Meyer

Sanatórios Santa Fé and Santa Izabel, FHEMIG. Três Corações, MG, Brazil

Among the many deformities caused by leprosy, facial ones are the most evident and stigmatizing, as they are easily seen. Patients with facial deformities, even when bacterially cured, see themselves, and are seen by other people, as still being sick. Leprosy causes loss of eyebrows, excessive facial wrinkling, eyelid paralysis, ear and nose deformities. These last ones are ugly and mark their bearers. They are caused by direct bacillary destruction of nasal lining and framework, generally sparing the skin. Surgical reconstruction includes a new lining for the nasal cavity and a new framework. The author presents nine cases of nose reconstruction in leprosy. Lining reconstruction was achieved by nasolabial (Farina's) flaps. A new bone support was built either with ulnar, tibial or skull grafts. A complete sequence of surgical techniques illustrates this presentation. Before and after pictures are exhibited. One complicated case is also detailed. Nose deformities, which are very stigmatizing, can be satisfactorily corrected through the utilization of presented techniques. Surgical reconstruction must be a part of leprosy patients' rehabilitation.

### PPOD 74

#### ORTHOTIC INTERVENTION IN NEUROPATHIC FOOT OF LEPROSY AND OTHER DISEASES

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Total of 124 patients of leprosy (65 with ulcers, 52 with callosities, 5 with knee and calf pain and 2 with corns) and 26 non-leprosy patients (9 with rheumatoid arthritis, 4 each of polio and diabetes mellitus, 6 with corns and 1 each with tabes dorsalis, calcaneus spur and pain at first metacarpal head) were assessed clinically and radiologically. Harris mat footprints were taken. Custom made orthotic devices were prepared from MCR. Harris footprints were taken with orthosis in place. These devices were fitted in appropriate footwear. Patients were followed up six monthly for one and half year. They were reassessed and given new orthotic devices and footwear at every follow up. Clinical photographs were taken periodically.

cally to record the findings. In leprosy group ulcers showed healing in 55 patients, improvement in 6 patients and development of new ulcer due to nail injury in 1 patient. All showed reduction in callosities. Size of corns was reduced and patients were relieved of pain. Non-leprosy patients were relieved of pain and could walk comfortably. Patient of tabes dorsalis could walk with stability and with minimum support. Those with corn showed reduction in size. Diabetic ulcers showed complete healing and were free from recurrence. The benefits obtained from orthotic devices are attributable to redistribution of planter pressure achieved.

### PPOD 75

PAUTAS DE INTERVENCIÓN DEL EQUIPO DE PREVENCIÓN DE INCAPACIDADES Y REHABILITACIÓN EN LA ENFERMEDAD DE HANSEN

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La lepra es una enfermedad discapacitante e invalidante al presentar un compromiso específico de los nervios periféricos denominado "neuropatía hanseniana", al ser las células de Schwann el blanco específico del *Mycobacterium Leprae*.

Esto implica que la persona que lo padece tiene un alto riesgo de presentar disfunciones sensitivas-motoras y vegetativas que comprometen su autonomía.

La patología neurítica responsable de la mayoría de los casos de la discapacidad, requiere de control y seguimiento permanente por parte del médico y de la intervención precoz del equipo de Prevención de las incapacidades y rehabilitación (PIR).

El objetivo principal de este equipo es "mantener las capacidades funcionales intactas a fin de evitar la pérdida de independencia de la persona".

Para el logro de este objetivo se implementan pautas de intervención específica que se desarrollan a través de cuatro programas

1. de educación
2. de prevención
3. de recuperación funcional
4. de reeducación funcional.

Se desarrollan en este trabajo los mismos y se evalúan los resultados de 7 años de actividades inherentes a esta propuesta.

### PPOD 76

POST OPERATIVE OUTCOME OF CATARACT EXTRACTION WITH POSTERIOR CHAMBER INTRA OCULAR LENS IMPLANTATION IN LEPROSY PATIENTS AS COMPARED TO NON-LEPROSY PATIENTS

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A retrospective analysis of the post operative outcome of a sample number of leprosy and non leprosy patients who underwent cataract extraction with posterior chamber intra ocular lens implantation over three years in the eye unit of ALERT will be presented. Sample groups will be studied with respects to age sex and type of leprosy. Postoperative outcome will be divided into visual outcome and post-operative complications

### PPOD 77

PRELIMINARY PROBE ON INVOLVEMENT OF GRASS-ROOTS LEVEL HEALTH DOCTORS IN POD AND REHABILITATION FOR PALS

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**Purpose:** To probe the feasibility of involving the grass-roots level health doctors in the prevention of disability (POD) and rehabilitation for the persons affected by leprosy (Pals).

**Method:** Taking the advantage of the opportunity supplied by Handicap International Organization's project, to retrain the health doctors while involving them in the POD and rehabilitation for the Pals from community.

**Result:** Totally 108 pals have been assessed about the disability. 15 Pals have been found with disability grade 2, which covers 13.9% of the total number, 16 Pals with disability grade 1, covers 14.8%. The situation of all of the pals with disability have been proven to be much more better than before.

**Conclusion:** The active involvement of the grass-roots level health doctors will be surely favorable to POD and rehabilitation for Pals. Reinforcement of the doctors training and a mechanism to improve the doctors' motivation is essential for our work in the future.

[**Key words**] the health doctor POD and Rehabilitation for Pals

**PPOD 78****PREVENÇÃO DE INCAPACIDADES**

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A hanseníase representa um grave problema de saúde pública no Brasil. A cada ano, são registrados no país cerca de 40 mil novos casos da doença. Trata-se de uma patologia infecto-contagiosa crônica causada pelo bacilo de Hansen. A transmissão acontece via contato direto e prolongado com pacientes bacilíferos não tratados. O bacilo apresenta afinidade pela pele e nervos periféricos, o que pode levar a alterações sensitivas, motoras e autonômicas que predispoem a incapacidades físicas severas. Dessa forma, ressalta-se a importância das técnicas de prevenção, controle e tratamento das incapacidades físicas na hanseníase. O projeto de extensão "Prevenção de Incapacidades" tem como objetivo facilitar o acesso dos acadêmicos de fisioterapia às ações de controle das incapacidades físicas em hanseníase. São desenvolvidas atividades no Centro de Saúde Jardim Montanhês (CSJM) e no Anexo de Dermatologia do Hospital das Clínicas da UFMG (ADE/HC/UFMG). No CSJM, além do acompanhamento dos pacientes, tem-se a proposta de treinamento dos funcionários e agentes comunitários de saúde, sensibilizando-os para a busca ativa de casos novos e acompanhamento dos pacientes em tratamento e pós-alta. O ADE/HC/UFMG constitui um serviço de referência do programa de controle da hanseníase em Minas Gerais.

Nas ações de prevenção de incapacidades físicas em hanseníase a fisioterapia pode atuar precocemente através da avaliação neurológica periódica dos olhos, membros superiores e membros inferiores; acompanhamento das reações e/ou neurites; orientação quanto às atividades de auto-cuidados; e abordagem das alterações da função neural durante o tratamento e após a alta. Uma das formas de avaliação da efetividade das ações de controle em hanseníase é o registro do grau de incapacidades físicas, que tem como objetivo traçar um perfil epidemiológico da população assistida.

Com a ação integrada dos participantes do projeto e da equipe de saúde dos serviços pretende-se contribuir com o Programa Nacional de Controle da Hanseníase do MS na tentativa de erradicação da doença.

**PPOD 79****PREVENTION AND MANAGEMENT OF DISABILITY - ANGOLA**

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Disability has been measured for the last 4 years in leprosy patients. The National Leprosy Control Program has trained health workers to recognise and treat leprosy with MDT. It is noted that as the number of newly detected cases rise, the proportion of patients with Grade II disability tends to gradually drop.

On the other hand patients with open ulcers on hands and feet continue to give a horrible image of the disease. Neuritis and reactions are present in approximately 20 % of patients. Prevention of disability is part of the training health staff receive when trained in leprosy care.

Care of ulcers in the Health Centres is frequently forgotten for lack of dressings and dressing instruments. Instrument and dressing Kits have been introduced into 56 Health Centres in 9 Provinces. The impact is measured in the number of ulcers found and the time ulcers take to heal. After one year the number of ulcers has reduced by 50 % and health education has encouraged patients suffering from ulcers to develop self-care groups.

By the end of 2002 it will be possible to manage ulcers and prevent disability in all 18 Provinces of Angola.

**PPOD 80****PROBLEMS RELATED TO PHYSICAL REHABILITATION AMONGST PALS AFTER RELEASE FROM TREATMENT**

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A study was conducted to assess problems related to physical rehabilitation in Subang district, West Java, in 2001. In 8 Health Centres 53 PALS were identified, of which 43 participated in this study. The results show that 37.2% are young adults, presenting as having the highest priority for physical rehabilitation. The majority of PALS are poor with a low level of education, work in heavy manual jobs and walk long distances to works. Of the 43 examined, 9 PALS had additional disability grades while the others had remained 3 years after RFT. Of the 43 interviewed, 38 PALS presented with great hopes of finding help at the HC's. The performance of HC's are poor in

physical rehabilitation, the district general hospital doesn't cater for leprosy and isn't actively involved in physical rehabilitation for PALs. The level of knowledge about physical rehabilitation amongst the PALs was as follows: 74.4% had heard about the possibility of rehabilitative surgery, 65.8% said the result of surgery must be good, 65.1% said that surgery must be very expensive. Of the 43 interviewed, 22 are ready to undergo surgery, under the conditions of: free of charge (100%), hospital must be close to their homes (72.7%), a preference for Subang general hospital (63.6%). The remaining 21 are not ready for the reasons: fear of operation (25.6%), no indication as they only have G-1 disability (16.3%), a feeling of hopelessness (2.3%), have adapted with the presence of deformities (2.3%), must earn a living for the family (2.3%). Currently most patients' needs are physical rehabilitation with ulcer care, septic surgery including protective shoes. Many PALs present with recurring ulcers, but 79.1% have never been referred to the hospital, as the referral system is not working well.

### PPOD 81

#### PROTECTION OF FOOT FROM DEVELOPING THE FIRST ULCER

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Plantar Ulceration is a common complication in leprosy due to peripheral nerve damage causes impairment of sensory, motor and sudo-motor function of the hands and feet, may occur in all types of Leprosy often the ulcer become infected with micro organisms that produce recurrent episodes of cellulitis of the surrounding tissues, osteomyelitis and destruction of bones results in deformities.

In our hospital out of 108 patients admitted during the year 2000. 63 were admitted for ulcers and most of which were plantar ulcers. As we see ordinarily, ulcers will not be so common, if the patient takes care of his feet. But once the patient allows an ulcer to form in his foot, the foot becomes more prone to develop a recurrent ulcer. Thus it becomes necessary to take all precautions to prevent the formation of the first ulcer, this is what Paul Brand refers to as "The Doctrine of the first ulcer".

Anaesthetic foot patient should take some steps like avoiding long walks and fast walking. Wearing MCR chappal, trimming his toenails, everyday hydrotherapy and oil therapy for 15-20 minutes and most important is patient should examine his feet everyday to see whether any fissure or break in the skin has occurred etc.

Rest is the most important thing in the treatment of ulcers of foot. Depending upon the severity of ulcer-

ation the treatment should be followed. What ever may be the intervention advocated to treat the plantar ulcers, the ideal intervention is to emphasis more on selfcare.

### PPOD 82

#### QUANTIFICAÇÃO DO GRAU DE MELHORA DA FORÇA DE PREENSÃO EM PACIENTES PORTADORES DE HANSENÍASE SUBMETIDOS À NEURÓLISE DOS NERVOS ULNAR E MEDIANO: APRESENTAÇÃO DE CASO

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**Introdução:** Nos últimos anos, as doenças do punho vêm merecendo destaque na literatura científica, com progressivo aumento do número de trabalhos clínicos e experimentais. Na avaliação dos resultados dos pacientes hansenianos submetidos à neurólise, são utilizados vários parâmetros clínicos, entre os quais destacamos a força de preensão palmar.

**Objetivos.:** Avaliar o grau de melhora após neurólise em um paciente hanseniano com seqüelas motoras da mão.

**Métodos:** Realizou-se um estudo de caso com um indivíduo jovem portador de hanseníase apresentando grau 2 de incapacidade nas mãos. O paciente foi submetido a avaliação da força de preensão na mão direita através do dinamômetro-JAMAR (posição 2), durante o pré e pós-operatório de neurólise dos nervos ulnar e mediano.

**Apresentação do Caso:** ANPS, 19 anos, sexo masculino, estudante, destro, procedente de Brasília/GO, MH Multibacilar, encontra-se na 8ª dose de PQT, Q.P: dormência com paresia de musculatura intrínseca e extrínseca na mão direita. Apresenta-se com neurite nos nervos ulnar e mediano direito há mais de 3 meses. Grau máximo de incapacidade 2 para as mãos com perda da sensibilidade protetora, garra móvel e reabsorção discreta.

**Resultados:** Houve melhora significativa da força de preensão palmar após a realização do procedimento cirúrgico (neurólise).

**Conclusão:** O uso do dinamômetro Jamar consiste em um método confiável na quantificação da preensão palmar de pacientes submetidos à neurólise dos nervos ulnar e mediano.

### PPOD 83

#### REASONS FOR REFUSAL OF RECONSTRUCTIVE SURGERY IN LEPROSY

Dr Mannam Ebenezer and Mr Premraj Isaac

The objective of the study is to determine the reasons for refusal of surgery and to identify ways to overcome them. In this study 75 patients belonging to the leprosy control area of Schieffelin Leprosy Research and Training Centre, Karigiri with impairments requiring reconstructive surgery and who refused surgery were interviewed. All these patients were advised to undergo surgery during their regular visits to the leprosy clinic. A significant observation is that only 23% seem to have understood the benefits and risks of surgery.

The reasons for refusal included long duration of hospitalization (42%), loss of wages (18%), both long hospitalisation and loss of wages (20%), non availability of a family member to care (14%) and fear of surgery (6%). Of the patients who refused surgery 86% said that they had adapted with their impairment to carry out ADL and their vocation although at a lower level of efficiency. The reasons for refusal of surgery were also analyzed according to age, sex, occupation, literacy, type of paralysis and bilateral involvement the major reason being long duration of hospitalization (62%).

This study brings out the need to reduce duration of hospitalization in our situation to enable patients to undergo reconstructive surgery. Alternative methods required to release joint contractures in a shorter time prior to surgery and methods to reduce postoperative period of physiotherapy for re-education needs to be explored.

### PPOD 84

#### RECONSTRUCTIVE SURGERY FOR BACK LOG PATIENTS

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Worldwide implementation of multidrug therapy (MDT) has resulted in a rapid increase in the number of persons cured of leprosy over a short period. A proportion of them have WHO grade 2 disability. In India alone about ten million patients have been cured of their disease since the inception of MDT in 1982. We may expect about two million of the still living eight million among cured persons to be having grade 2 disability. Our experience shows that only a proportion of these persons are fit and willing for surgery straight away and that this proportion may be about  $15\% \pm 5\%$ . Thus we may have about 0.8 to 1.6 million persons who are fit and willing for surgery. The problem now is how to make surgery available to them within a reasonable period. While no systematic efforts to solve this managerial problem have been made on a large scale, various kinds of efforts have been made to tackle this issue at different places at different times and for different peri-

ods by different organizations. The experiences of various strategies are examined here. They may be broadly described as under: (i) special institutions model, (ii) sensitizing and motivating the surgical community, (iii) sensitizing and motivating academic departments of surgical specialties, (iv) incentives to institutions and (v) camp/campaign approach. The first model has mostly outlived its utility. The next three models have had very limited success. The last model has been very successful in the State of Gujarat, but it may not be possible to replicate it in most other States. However, that model well illustrates the importance of political will and widespread participation of the medical and paramedical professionals as whole and wide public support for a satisfactory solution of this otherwise unsolvable problem.

### PPOD 85

#### RECONSTRUCTIVE SURGERY IN THE LEPROSY NOSE, A NEW CONCEPT

G.J. Nolst Trenité, W. Fokkens, K. Ingels, M. Virmond

The typical pathologic-anatomical findings in the leprosy nose are due to the destruction of parts of the nasal skeleton.

In particular destruction of the nasal septum and the anterior nasal spine are responsible for a saddle nose deformity and an acute nasolabial angle with lack of columellar show.

In severe cases there is also a lack of projection of the bony pyramid and vestibular stenosis with typical vertical alar grooves due to scar tissue retraction. In the past different reconstructive techniques were used to reconstruct the nose, from forehead flaps to implantation of iliac bone to restore profile and form with varying success. Ideal would be to restore the normal cartilaginous skeleton. Endoscopic analysis of 40 leprosy patient in Brasil (1994) showed extensive destruction of the internal nasal framework, with makes reconstruction of the septum impossible.

From initial surgical procedures to restore function and form we learned that the soft tissue envelope could be freed and used after dissection of the scar tissues.

Depending on the severity of the deformity we were able to reconstruct the nose with autogenous material, (rib cartilage) and composite grafts from the auricle to restore the inner lining and to prevent retraction.

We classified the leprosy nose in four grades of severity of the deformity.

Depending on the severity, conchal cartilage alone (in moderate deformities) to rib cartilage combined with composite grafts (in severe deformities) were indicated for reconstruction.

From 1995 until 2000 23 patients were operated with a follow up from 2 – 5 years. In all but one case there was aesthetic and functional improvement. The technique with dorsal (rib) grafts attached to a columella strut (with extension to rebuild the anterior nasal spine) showed no resorption of the dorsal autogenous rib cartilage implant but a rather high percentage of partial resorption of the columella strut (rib), possibly due to the tension of the soft tissue on this graft. The composite grafts of the auricular survived in all cases.

### PPOD 86

#### REHABILITATION IN THE EYES OF INSTITUTIONALISED LEPROSY PATIENTS

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There are thousands of leprosy patients staying in colony today and new patients are also coming to the colony for their rehabilitation. This fact is disturbing in connecting with Community Based Rehabilitation of leprosy patients. In this direction a study is undertaken to know the opinion about the rehabilitation in the eyes of institutionalized leprosy patients in mine district of Vidarbha – Maharashtra, India. A data is collected from 175 institutionalized leprosy patients and analyzed. In this study, the knowledge of the patients, their experiences in the families and with society, the reasons for their dehabilitation from normal social environment, their opinion about their rehabilitation, their educational, economical and own status in the family and society etc. such factors are studied in detail.

However, it also found that not old or deformed patients are settled in colony but the patients with no visible deformities are also coming today in colony for stay and this is disturbing. It is also found that qualified patients have more psychological problems and today on the verge of elimination the patients are facing familial, social, physical, economical, psychological and medical problems. These patients have no hope about their acceptance in the family and society as one of them and don't believe that the concept of Community Based Rehabilitation will be seen in reality in future completely

### PPOD 87

#### REHABILITATION PROGRAM OF JICA ON LEPROSY IN MYANMAR

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From 1<sup>st</sup>. April, 2000, JICA project named Leprosy Control and Basic Health Services Project was started as a pilot project covered 48 townships (4 townships in Mandalay Division, 19 townships in Sagaing Division and 25 townships in Magway Division).

Now the government of Myanmar is devoting all its powers to eliminate leprosy according to WHO's regimen in the not too distant future. After elimination of Leprosy, it will become to be important to control ex-patients with disabilities and deformities who are unclear the number in more than 230 thousand RFTs at the present. Therefore, we were starting to carry out some programs concerning rehabilitation on Leprosy in collaboration with the government of Myanmar. This project are stating to collaborate to control them within the project sites such as Reconstructive surgical training, Sewing training, Shoe making training, Physiotherapy training and so on using Yenanthar Leprosy Training Centre that was built up in 2001 by the government of Japan. Yenanthar Leprosy Hospital to which this training centre belongs is only one national leprosy hospital in Myanmar that has a responsibility to give medical services to leprosy patients.

Reconstructive surgical training for orthopedic surgeons in the divisional hospitals and district hospitals were conducted as first step of surgical training, Shoe making training for staff of Yenanthar Leprosy Hospital and physiotherapy training for physiotherapists of Myanmar were also conducted by Japanese experts dispatched from Japan. Sewing training for leprosy patients and their members of family were carried out in collaboration with Japanese NGO that are working in Mandalay city, Myanmar.

We would like to show the above activities and evaluation concerning with the rehabilitation on leprosy that we are just starting to carry out from this year.

### PPOD 88

#### ROLE OF POSTERIOR TIBIAL NERVE DECOMPRESSION IN PLANTAR ULCER

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Plantar ulcers continue to be a major problem in leprosy. For various reasons Posterior Tibial Nerve (PTN) damage is neither noticed by the patient nor managed by the doctors early. The consequence is deformities and ulcers causing physical, social, financial and psychological problems to the patients. A study to assess the effects of PTN decompression was done. Patients with sensory loss of more than one year and plantar ulcers of varying duration were operated and followed up for 2 to 16 years. Total patients 78 (Male - 59, Female – 19). Total nerves 100.

**Results:** Fourteen out of 16 patients with two years duration of sensory loss had good sensory recovery and there were no ulcers. Among 44 who had single or recurrent ulcer of less than six months there was no recurrence in 30 and the recurrence was less in 14. Twelve with recurrent ulcers more than one year showed poor improvement. Six patients with sensory loss and ulcer of more than three years did not show any improvement.

PTN decompression has an important role in the management of early nerve damage. If done within two years of sensory loss and ulcer recurrence, the result will be tangible. PTN decompression at a later stage is beneficial to enhance the healing and reduction of occurrence. This surgery can be done in centres with a minimal infrastructure and trained team. By managing the PTN involvement effectively, the manpower and money spent on hospitalization and rehabilitation can be reduced to a large extent.

### PPOD 89

ROLE OF SELF CARE CUM TRAINING CAMPS IN DESTIMATISING LEPROSY – AN EXPERIENCE WITH THE PATIENTS, PROVIDERS AND PEOPLE

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**Back-ground:** Leprosy is better known for deformity it causes to the patient, resulting in social stigma, discrimination and ostracism. This is a concern for all of us but the problem is actually faced by the patients and their families in the community.

In Orissa since implementation of MDT, 794485 cases have been detected and 85% have been cured with MDT. The deformity rate has come down from nearly 17% in 1983 to 1.8% by March 2001. This looks convincing. But there is huge load of already deformed patients who needs both care and cure including community acceptance. To further worsen the situation roughly 800 cases are added each year. Inadequate vertical set up coupled with increasing disability burden calls for immediate attention of all. This is a real challenge to be faced.

**Objective:** To provide both curative and preventive services to the deformed patients through self care practices and counseling.

To equip the service providers with the technical knowledge and skill of disability care through learning by doing approach.

To make aware the community that leprosy is treatable, curable, and touchable and we really mean it ensuring community participation.

**Strategy:** Self-care practices including counseling for recently developed visible (gr-II) deformity cases.

Self-care teachings to the General Health Care providers based on learning by doing exercises.

Community participation ensured.

#### Observations:

Number of camps	12
Patients	338
Health provider	489
Community Participation	Community leaders, teachers, students, NGOs and others participated

**Conclusion:** These camps provided an excellent opportunity for patients, providers and people to interact with each other and enrich their knowledge and skills.

Generate a common understanding of disease and associated deformity.

### PPOD 90

SENSATION TESTING OF HANDS AND FEET: EXPERIENCES WITH THE TRAFFIC LIGHT PRINCIPLE

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Assessment and evaluation of nerve function is important in the diagnosis and management of leprosy reactions/neuritis. Loss of sensory function is an early sign of nerve function impairment and often may precede motor function impairment.

In many projects graded monofilaments are used to (semi)-quantitate the sensory status of the nerves. Often the sensory status of the nerve is visualised by marking the selected points on the diagrams of the hands and feet with the colour that corresponds to the graded filament.

Hands and feet have different levels of normal, diminished, and protective sensation. When interpreting the sensory status of the ulnar, median and posterior tibial nerves, the examiner has to do a mental exercise because the different colours have a different meaning for hand and feet.

A colour pattern is proposed: green, orange and red, based on the colours of a traffic light. This harmonises the interpretation and can facilitate the evaluation of the sensory status of the nerves affected in leprosy. The recording and visualisation of the sen-

sory status respect the different levels of normal sensation of hands and feet. The advantages and disadvantages of this method of evaluating and monitoring sensory function of peripheral nerves will be discussed.

### PPOD 91

#### SERVICES AUGMENTATION FOR INTEGRATION OF LEPROSY (SAIL) AN EPOCH MAKING VENTURE IN A DEVELOPING COUNTRY

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**Introduction:** The Government of India has set forth a parameter for integrating leprosy with general health care services in states where MDT is in operation for 5 years or more and where the prevalence rate has come down to less than 6 per 10,000 population. With excellent leprosy control and elimination activities carried out by the Government of Tamil Nadu during the last two decades, integration of leprosy has become a reality in the year 1997.

Objectives:

- To identify the high risk groups through the existing leprosy and public health staff in Tiruvallur, Coimbatore and Vellore districts.
- To assist in augmenting programs as an integral part of the medical campaign and to implement the field programs effectively through IEC assistance of the existing systems.

**Operational Modalities:** Advance programs were prepared to reach at the public health centres through a circuit plan drawn out and distributed among the PHCs one month in advance. These programs cover a population of over 10,000,000 in 3 districts where we had supplied over 16,000 MCR chappals and over 80,000 POD/Selfcare Kits. The services of SAIL have certainly enhanced involvement of the government health staff in

### PPOD 92

#### “SWIFT” DISABILITY ASSESSMENT – AN NGO BASED STUDY TO OFFER EFFECTIVE POD SERVICES

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German Leprosy Relief Association (GLRA) and Swiss Emmaus Leprosy Relief Work (ALES) are two

International Organisations working for leprosy in India for more than 40 years. Through the projects supported by these organisations, 34607 disability patients were registered for treatment and care.

The objective of the “SWIFT” Disability assessment was to organise systematic special campaign to carry out the quality assessment of disability on a fast pace, so that a realistic picture of the disability particulars will be available from the supported projects. It could also cover all the deserving patients suffering with deformities under the medical, surgical, physio and rehabilitation services on priority basis.

The project physio technician and the field staff of the concerned projects were utilised for this assessment under the guidance of the Technical Advisory Unit (TAU) of GLRA/ALES – India, using a specially designed format. The assessment was done in two phases, an intensive phase of one week followed by an evaluation after one month.

The result showed that some of the old registered patients were not available in the given address for assessment and the number of deserving cases for reconstructive surgery was on the higher side. The teams also could identify the right candidates for different POD services.

### PPOD 93

#### THE ACCEPTABILITY OF PROSTHETIC REHABILITATION AMONG PERSONS AFFECTED BY LEPROSY IN NEPAL

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**Aim:** To review the acceptability of prosthetic limbs among users, their families and their communities.

**Methods:** More than 150 leprosy and non-leprosy patients have had below knee amputation (BKA) and been fitted with prosthetic limbs at Anandaban Leprosy Hospital, Nepal. Sixty-two of these patients (52 leprosy and 10 non-leprosy patients) were interviewed using a standard questionnaire. There were 48 statements divided into seven categories to assess the difficulties faced as a result of the prosthesis in areas such as personal, domestic and social activities.

**Results:** Over 90% of those interviewed were able to do domestic activities but indicated inability to do field work; half of them possess no lands and cattle. More than 70% were allowed to partake in family and community ceremonies; 28% refused the invitation. Ninety percent had received a positive attitude from the community. Almost all patients managed to go to the toilet with the prosthesis, but found squatting difficult. Half of those interviewed felt physi-

cally able to carry on their work efficiently. Two thirds were capable of earning, while 25% depend upon leprosy and other social organisations. The average use of a prosthesis was 8.9 hours (range: 1-16 hours); walking distance was 3 km (range: 1-10) each day.

**Conclusion:** There is no significant change in the social, religious and cultural lives of patients with prosthetic limbs. Social integration seems to be positive and the nuclear family appears to be strong

### PPOD 94

THE ANALYSIS OF EFFECT FOR 500 CASES WITH EYE, HANDS, FOODS DISABILITIES BY SELF CARE IN 3 YEARS

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**Objective:** To observe the effectiveness after the disability persons who affected by leprosy had eyes, hands and feet self-care.

**Methods:** The disability persons who affected by leprosy were guided termly by staffs to have self-care, then we registered their disability situation according to uniform standard.

**Results:** After observing for three years, total 500 persons, their red eyes were decreased 43.57%, cracks of hands and feet were decreased 33.33%, ulcers of the tenar were decreased 37.14%, the proportion of implementing self-care consciously was 81.0%.

**Conclusion:** Eyes, hands and feet self-care can prevent from and control leprosy disabilities effectively.

### PPOD 95

THE ANALYSIS OF REHABILITATION EFFECT FOR 823 CASES WITH DISABILITIES IN 3 YEARS

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**Objective:** Prevent and stop disability increase, improve and recover the physiological function so to get a higher life quality. **Methods:** teaching the care-self method of the Watson (eye, hand and foot care-self) to leprosy patients and treating the complex foot ulcer in a compositive measure. **Result:** disability was improved obviously, the cured rate of foot ulcer is 73.5%.

**Conclusion:** The Watson method is a effective measure to prevent and reduce leprosy disability. It could

improve patients' physiological function obviously and should be spread out.

[**Key Words**] Leprosy disability rehabilitation.

### PPOD 96

THE APPLICATION OF THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH IN LEPROSY

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In 1980, the World Health Organisation (WHO) published, for trial purposes, the International Classification of Impairments, Disabilities and Handicaps (ICIDH). During the last decade many international organisations have collaborated with WHO in the development of a definitive classification. This is now called the International Classification of Functioning, Disability and Health and will be known by the acronym ICF. In its 54<sup>th</sup> assembly (May 2001) WHO endorsed its international use. The overall aim is "to provide a unified and standard language and framework for the description of health and health related states".

The classification is divided into two parts:

- 1) Function and disability, consisting of the components a) body function and structure, and b) activities and participation.
- 2) Contextual factors, consisting of a) environmental and b) personal factors.

The important health-related terms impairment, disability, activity, functioning and participation are all defined. The classification shows how these are (inter) related and how the experience and evolution of 'health (problems)' is influenced by environmental and personal factors. To be able to assess the need for rehabilitation and to monitor and evaluate the effect of rehabilitative interventions, it is advised that the concept and definitions of the ICF be used.

Leprosy can affect the person in every important domain of functioning. In the past, much emphasis has been given to the assessment and treatment of impairments only. For a comprehensive or holistic rehabilitation, attention needs to be given to all domains of functioning.

Case studies will illustrate how the concepts of the ICF can be used and applied in the rehabilitation of leprosy affected persons.

### PPOD 97

THE COGNITION AND DEMAND OF INPATIENTS WITH LEPROSY FOR REHABILITATION

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The rehabilitation is an important part of leprosy control and also an important point of our work now and onward. In order to exploring and demanding of rehabilitation of leprosy patient, through questionnaires of leprosy patients, through questionnaires made by ourselves, making dialogue with and investigating 96 patients. The result showed that most of the patients know general knowledge of self rehabilitation but lack of deep concern, and doing apart from knowledge. The demanding rehabilitation forms are most from medical professional performance and pamphlets, watching TV and listening tape records. The discussion indicated that the knowledge and doing of rehabilitation for leprosy patients should be in step.

We recommend that the time of rehabilitation should be in advance, contents should be systematically and the forms of performance should be multiplex

[**Key words**] leprosy rehabilitation exploration.

**PPOD 98**

## THE EFFECT OF PREVENTION FOR LEPROSY DISABILITIES

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**Objective:** To assess the effect of actual measure for prevention from leprosy disability.

**Methods:** Comparing the leprosy disability rate between now and before the measure of prevention from disability by using the retrospective research in new cases and relapse patients.

**Result:** Since a composite measure of prevention from leprosy disability was used in Guangxi, the rate of leprosy disability grade II has descended to average 13.02% of near this 10 years from 45.09% of before and the disability rate in new cases has been descended to average 10.95% of near this 10 years from average 23.14% of before 30 years ( $P < 0.05$ ).

**Conclusion:** It is a composite result of many factors for the descending on leprosy disability in Guangxi, of it, measures of disability record form, early detecting and treatment for peripheral neuritis have played a key role.

[**Key Words**] Leprosy disability rehabilitation

**PPOD 99**

## THE FOLLOW UP STUDY OF THE OUT COME OF INTRA OCULAR LENS IMPLANTATION AS A PART OF THE CATARACT SURGERY AMONGST THE LEPROSY SUFFERERS

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At present Cataract is the major cause of blindness amongst the leprosy sufferers of Eastern India. In most of these cases it is due to senility. Complicated cataract possibly due to leprosy process is encountered in 20% of the cases. Extra Capsular Cataract Extraction (Can Opener Technique) with Intra Ocular Lens (IOL) Implantation with a Peripheral Button Hole Iridectomy and Interrupted Sclero Corneal Sutures was the surgery of choice in this study. In a rapid epidemiological assessment conducted in January, 2002, out of 300 eyes of 210 MB leprosy sufferers with operable cataract, 170 eyes of 120 patients were found to underwent cataract operation with Intra Ocular Lens Implantation. The Cataract Surgical Coverage (No of operated eyes with cataract  $\times$  100 divided by Total No of eyes with Cataract + No of operated eyes with Cataract) was 36.6%. However all the 170 eyes of this series was operated by the same operative technique, surgical team, surgical atmosphere of a particular hospital with the single operation theatre and a single specific brand of viscoelastic agents, IOL and suture material and uniform post operative care (a course of oral steroid along with local steroid and cycloplegics). The post operative follow up period varies from two and half years to three months. The mean follow up period was one year. The visual outcome following surgery after mean period was 6/12 and above in 90% of cases. Posterior Capsular Opacity resulted corrected vision upto 6/12 in 5% of the study group. 4% of the cases had vision limited to 1/60 due to corneal opacity following corneal ulceration as a result of hyposthetic cornea, associated lagophthalmos. 1% had PL only due to blood staining of the cornea. Not a single case of post operative endophthalmitis or intractable uveitis was encountered. So Cataract Surgery with IOL implantation is a safe procedure in MB Leprosy sufferers even with the history of reaction.

**PPOD 100**

## THE INFLUENCE OF PSYCHOLOGICAL STATUS OF LEPROSY CASES WITH DISABILITY ON REHABILITATION

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**Objective:** Understand and mastery the influence of psychological status of leprosy cases with disability on rehabilitation.

**Methods:** Studied the influences of sex, age, educational level, disability and having or not close relatives on their mind in 82 leprosy cases with disability by using the disease self—estimate table of SCL-90.

**Result:** The suffering levels of the study object is higher than those in healthy status and the total mean score of psychological response was equal to  $116.55 \pm 47.21$ . The degree of disability has made a direct impact on the patient's mind. As compared with the patients living at home, the patients isolated in leprosia without close relatives have higher scores in compulsion, depression, phobic anxiety, bigoted ideas and psychosis. The longer the disease duration, the more severe the lost and phobic feeling and hostility. The illiterate patients have more serious lost and phobic feeling. According to eight factors in SCL-90, the most sensitive ones are interpersonal sensitivity, depression and phobic anxiety, and the next ones are compulsion, anxiety and hostility. After they firmly believed the diagnosis, a few cases began excessively drinking, became superstitious, gamble-some, hostile and even tending to suicide. Forty-eight of the 74 cases had suicide intentions and four committed suicide themselves (without completion).

**Conclusion:** For the psychological health of leprosy patients with disability it will be necessary to obtain the support of the public in removing discrimination against the patients through popular health education and to find and treat the patients as early as possible in the interests of prevention of the disability.

**[Key Words]** Leprosy Disability Psychological Reaction SCL-90 Form

### PPOD 101

THE INTRINSIC PARALYSIS THUMB; A CHALLENGE FOR SURGEONS AND PHYSIOTHERAPISTS. A SUGGESTED APPROACH.

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A well functioning thumb is depending on stability in its joints to allow sufficient power in its function as an opposing finger in grips as well as sufficient joint mobility for dexterity. The ulnar nerve in its function as a metacarpophalangeal joint stabiliser also serves the first ray through the m. adductor pollicis, the m. flexor pollicis brevis deep head as well as (to some

extent) through the first dorsal interosseus muscle. Paralysis of those muscles, whether due to an ulnar paralysis or a combined ulnar and median paralysis, leads to Z-ing and weakness of the thumb. Stabilising procedures, dynamic or static, encounter risks for crankshaft deformity and/or less than desired dexterity. In an attempt to restore independent movements in the carpometacarpal, metacarpophalangeal, and interphalangeal joints 11 patients (6 with ulnar paralysis only, and 5 with combined ulnar and median paralysis) have had tendon transfers using the extensor indicis proprius routed trans-interosseus, trans-thenar, volar-ulnar to the metacarpophalangeal joint and inserted into the extensor pollicis longus on the basephalanx. The task of bringing back the skills of independent movements of the three joints present certain challenges for the physiotherapist both in terms of training as well as in terms of evaluating the result. The method and results are discussed.

### PPOD 102

THE NEEDS AND COGNIZE ON REHABILITATION FOR 135 LEPROSY CASES

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**Objective:** to know the leprosy patients' cognizing and requirements to rehabilitation.

**Methods:** 135 leprosy patients were investigated by interview and questionnaire, the investigation form designed by national STD and leprosy control center was used.

**Results:** 60-85% patients knew normal knowledge of leprosy rehabilitation, they were lacking of deeper knowledge and can not implement rehabilitation as what they knew. About rehabilitation requirements, most of patients(72%) chose demonstration of doctors and nurses; simple books, 50-70% of them chose watching kinescopes and listening to records.

**Conclusion:** we ought to let leprosy patients implement leprosy rehabilitation as what they knew, which is very important It is suggested that time of rehabilitation should be earlier, contents should be systematization and formats should be diversification.

**[Key words]** Leprosy Rehabilitation Cognize

### PPOD 103

THE REVIEW OF EFFECT FOR INTEGRATING CONTROL OF FOOD ULCERS WITH LEPROSY

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The effect of a comprehensive protection measure on 608 leprosy cases with 423 plantar ulcers for three years was reported. Out of 423 ulcers, 370 ulcers healed, 4 had no changes, 13 deteriorated, 43 were newly-found and 34 relapsed. The improvement rate and the cure rate were 87.49% and 87.47%. The incidence of new ulcer and the relapse rate were 2.80% and 4.13% in the first year, 1.15% and 15.92% in the 2nd year and 3.13% and 4.35% in the 3rd year.

### PPOD 104

#### THE USE OF PODIATRIC ORTHOSES IN THE MANAGEMENT OF PLANTAR NEUROPATHIC ULCERS IN LEPROSY

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Although the conventional methods of treating the neuropathic plantar ulcers in leprosy has been found effective, it does not compromise with the mechanical factors that is needed for pressure distribution. Podiatry orthoses (Custom insoles and padding techniques) are used widely particularly in most developed countries for the management of foot ulcers in diabetes. The rationale of this intervention is to keep the level of physical stress sustained by the foot below the tissue damage threshold thereby enhances the healing process. Podiatric orthoses can be manufactured from a range of materials, including compressed felt and microcellular rubber [MCR]. We present our experiences of a randomized control study with 20 leprosy patients having non-healing plantar ulcers conducted in Bombay to measure the use of Podiatry orthoses in the management of neuropathic plantar ulcers in leprosy.

20 subjects (10 - Study group and 10 - Control group) with non-healing plantar ulcers were recruited for the study. Size, location, surface morphology, pathological condition and duration were observed at regular intervals. Podiatric orthoses were designed using the self-adhesive compressed felt pad depend on the nature of wounds and provided to the study group patients. The healing rate was measured in terms of reduction in the mean area of plantar ulcers in both the groups. There was no change in the mean area of plantar ulcers in both the groups after 3 months, significant difference was observed after 6 months, however it is not statistically significant. Our finding highlights the importance of self-care measures to be practised by the patients themselves. It was also found that these podiatry devices fitted in the footwear could prevent recurrence of ulcers.

### PPOD 105

#### THUMB WEBPLASTY: TECHNIQUE AND OUTCOME

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Green Pastures Hospital, run by the International Nepal Fellowship, is one of three tertiary referral centres in Nepal to which people affected by leprosy can be admitted for reconstructive surgery.

Patients with prolonged median (or median and ulnar) nerve palsy often develop a contracted web space and may also present with shortening of the thumb. While physiotherapy and splinting may be adequate in mild contractures, many cases will require surgical release. Thumb length is an important determinant of hand function and therefore lengthening of the thumb by deepening the web through web-plasty can be expected to improve function.

This review of the outcome of various types of web-plasty was performed in Green Pastures Hospital, Pokhara, Nepal, between November 2001 and January 2002. There were 14 operations on 11 patients (5 male, 6 female, average age 45 years).

Four z-plasties, eight dorsal flaps, one dorsal release with skin grafting with Z-plasty and one second metacarpal excision were performed. The average web angle was 33° pre-operatively and 56° post-operatively. The average thumb length was 2.7 cm pre-operatively and 4.2cm postoperatively. The average web distance 2.3 cm preoperatively and 4cm post operatively.

Following a dorsal flap procedure thumb length increased from 2.1 to 4.2 cm (+ 2cm) while following Z-plasty thumb length increased from 3.4 to 4.4 cm (+ 1cm). The web angle following a dorsal flap procedure increased from 27° to 53°, (+ 26°), whereas following Z-plasty the web angle increased from 38° to 55° (+17°). All patients were satisfied with the result. There were no post-operative complications. Dorsal flap web-plasties are ideal for creating length and release of severe contractures, and Z-plasties are adequate for mild to moderate contractures.

### PPOD 106

#### TREATMENT OF COMPLICATED FOOT ULCERS WITH A COMPREHENSIVE MEASURE IN 1804 LEPROSY CASES

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To approach the feasible methods to prevent plantar ulcers in leprosy patients according to the agreement between MOH and TLMI. The results of 2599 complicated foot ulcers in 1804 leprosy cases treated with surgical interventions, plastic fixation, supports, dressing, rest, provision of protective footwear and modified insoles were presented. The results showed that 1446 foot ulcers in 1055 cases healed, accounting for 55.64% of the 2599 foot ulcers. The cure rate in those who live in leprosy hospitals was 71.31%, 219 foot ulcers in 172 cases (15.15%) recurred. The recurrent rate in those who live at home was more than 18.35%. The comprehensive measure in treatment of foot ulcers had high cure rate and low recurrent rate. Reduction of workload, avoidance of long distance walking, intensification of education on foot self-care and provision of financial support are the main measures in prevention of recurrence of foot ulcer.

### PPOD 107

#### TRIAL OF HOMOEOPATHIC MEDICINE IN THE PREVENTION OF DISABILITY

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Neural deficits are often found to result in episode of anaesthetic hand and foot which leads to cracks, ulcer, septic hand and feet, joint stiffness, mutilation of hand and foot. These anaesthetic extremities are a major source of disability in leprosy which is responsible for the rehabilitation of the leprosy affected person.

As no treatment is available for regain of nerve function so under NLEP sole emphasis is given to prevent disabilities by practicing hand and foot care. The principle of all disability prevention education programmes is to make leprosy affected persons aware about the protected use of hand and foot though in the field most of the affected persons do not follow the guidelines. To find out some practical solution towards prevention of disability, regain of nerve function to any extent would give real benefit. To augment disability management, a randomized controlled clinical trial was undertaken for a period of six months to study the effect of some selected Homeopathic medicine on patients with anaesthetic hand and foot.

Eighty leprosy cured persons with anaesthetic hand and foot who had been completed MDT or released from surveillance were randomly selected for this

trial. Out of these, forty patients constituted the study group. The patients with cracked foot were grouped in one and treated with a combination of three Homeopathic medicines. The patient with cracked foot and ulcer were treated with another group of medicine. None of the patient was advised to give rest of the affected part. All the patients with cracked foot showed disappearance of the cracks with remarkable change in the texture. The other group with ulcer showed complete healing. The most noticeable change in all the patients recorded was regain of touch sensation and sweating of palm and sole of the feet. The two changes like sweating of palm and sole of the feet and regain touch sensation could take place only if the sensory nerves are functional. Therefore, it can be concluded that this line of treatment can be adopted for prevention of disabilities in leprosy cured persons with anaesthetic extremities.

### PPOD 108

#### ULCER CARE THROUGH CAMP MODE WITH MINIMUM RECURRENCE RATE A STUDY OF 85 POD CAMPS

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**Introduction:** Recurring ulcer is a problem with LAPs. Ulcer reflects on MDT compliance. Image of leprosy is to be changed. Therefore it is priority.

#### Objectives:

1. To develop conviction among leprosy cases with planter ulcer that ulcer do heal (by demonstration, by counseling, by support)
2. To promote adoption of self care practice to cure and prevent ulcers.

**Method:** Counseling, demonstration, practices (training), group discussion, community support (removing apprehensions), rapport development, mutual counseling, encouraging and improving self steam (generating hopes). Ulcer care done in residential camps of 7 days and the main emphasis was to convince patients to heal the ulcer and made concern about no recurrence.

**Results:** A study of 85 POD camps 3192 cases with ulcer in hand, 3629 cases with ulcer in foot (Table-1) ulcer heals within 7 days (Table-2). Recurrence of ulcer in those patients was observed up to 3 years from the period of time. How many adopted self care, how many cover back with ulcers. MDT was not demanded to heal ulcers.

**Conclusion:** Self care, ulcer healing, POD is essential to remove fear and frustration which is barrier in leprosy elimination.

**PPOD 109****USEFULNESS OF ALTERNATIVE THERAPY (HERBAL) FOR MANAGEMENT OF ULCERS AMONG LEPROSY PATIENTS**

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The center has 216 Hansens disease patients who had completed their course of MDT under their care. 120 males and 96 female patients, 42 patients are inmates of the center, 36 patients from nearby patients colony, 36 patients from outside area frequently visiting, and 102 patients who had attended once the center for ulcer treatment. All the patients except 36 had grade-2 deformity of hands and feet. Chronic, complicated ulcers were constant problem, since the project was started in the year 1987.

From the year 1995 Herbal products were been used for ulcer dressings along with self-care practices and antibiotics or surgeries wherever needed. For ulcer dressings (external use) paste was made from Turmeric (*Curcuma longa*), Common salt (Sodium Chloride), Neem leaves (*Azadirachta indica*) (or) custard apple leaves (*Annona Squamosa*).

The results proved that the herbal products when used were found to be useful along with regular ulcer management procedures. These products are locally available, easy to prepare, cheap, no side effects, well accepted, minimized use of antibiotics, and the healing time of the ulcers was reduced.

Methods and results of this alternative treatment have been discussed

**PPOD 110****WHO 'DISABILITY' GRADING: OPERATIONAL DEFINITIONS**

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A 'disability classification' for use in leprosy has been advocated by WHO since 1960. Two revisions of this grading system were subsequently published, a 4-point scale in 1970 and a 3-point scale in 1988. The original purpose was to record a baseline 'disability' status and monitor changes during follow up. The grading system was therefore quite elaborate. By 1988, the main purpose of the grading had changed to being an indicator to estimate delay in case finding. It is assumed that if patients delay in reporting, they are likely to have more impairment at diagnosis, so low rates of impairment in new patients at diagnosis are interpreted as an indication of early case reporting.

Usually, the 'maximum grade', which is the highest of 6 scores listed for eyes, hands and feet, is used as an indicator of severity of impairment. In recent studies, the individual grades for eyes hands, and feet have been totalled to get a 'sum-score'. The maximum sum score is 12 (2 for each eye, hand and foot).

This presentation provides operational definitions for the WHO grading, which are needed as the grades are often interpreted differently in different programmes. If programmes / projects follow definitions that are less prone to misunderstanding and different interpretations, the data they report will be more reliable, and more reliable comparisons with the individual grades, the maximum or the sum-score, can be made between programmes or cohorts of patients over time.

**SOCIAL ASPECTS****PSA 1****A COMPARATIVE STUDY OF SOCIAL REPRESENTATION OF HANSEN'S DISEASE AMONG PATIENTS, HEALTH PROFESSIONALS AND POPULATION IN BRAZIL**

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The term "hanseníase" or Hansen Disease (HD) is considered to be the politically correct term at a nationwide level in Brazil. Using the test of "free-word- association", 119 health professionals, 436 women, mostly housewives, and 94 HD patients, were invited to express promptly their associations to

the word "hanseníase". Their answers coded as short phrases formed by one or two words was arranged by EVOC software in a spatial way, which allows us to understand this structural organization of social representation (SR) of the three groups. In order to apply the model focused on social psychology -the theory of social representation (SRT), the words distribution considers not only their frequency, but also the order in which they were evoked, and its co-occurrence.

The results presented in a special figure, denominated "garfos" shows an aggregate evocation being more pronounced in the population group regarding the elements, patch, skin, insensitivity and disease; but also presenting others as "itching" and "wounds" referring to leprosy RS. The elements such as "cure" and "treatment" presenting in both groups of health pro-