Assessment of Prevention of Disability and Prevention of Worsening Disability Services at 9-Selected Townships in Mid-Myanmar

Ishida Yutaka, Kyaw Myint and Yoshinori Aoki
Bureau of International Cooperation, International Medical Center of Japan, Ministry of Health Labor and Welfare, 1-21-1, Toyama, Shinjuku-ku, Tokyo, 162-8666, Japan
E-mail: y-ishida@i.imcj.go.jp

A 5-year JICA leprosy Control and Basic Health Services Project (4/2000-3/2005) introduced POD/POWD service package at 9-selected townships in Mid-Myanmar in 2004. It consists of routine case assessment, self-care, footwear, ulcer care, reaction management, reconstructive surgery and referral system. Baseline case assessment was conducted between Oct 2003 and March 2004 and totally 10,528 RFT cases were registered and assessed their eye, hand and foot conditions by WHO disability grading. Result showed 35.1% was identified as WHO Grade II disability (7.1% in eye, 28.4% in hand and 25.8% in foot). Follow-up of these services from June 2005 for 18months showed among services introduced, reconstructive surgery and referral system were found not well done. Routine case assessment by the Impairment Summary Form (ISF) score has conducted since Aug 2005 almost every 6 months. By May 2007 assessment data was collected four times for clinical monitoring and more than 3,800 cases were assessed every time. Some data was found not reliable and not suitable for analysis because of misunderstanding of the method by field examiners. A smaller scale data (N=938) showed 10-20% of “Worsened” in three years even though services were available and also some impact of services (30% of “Improved”).

Semmes Weinstein Monofilaments; Sense and Sensibility

Max H Halous and Willem J Theuvenet
E-mail: wjtheuvenet@wxs.nl

In the need to detect early nerve function loss and to monitor the results of neuritis treatment, Semmes Weinstein monofilaments are widely used. What are the influences of age, use, moisture and temperature on the reliability of testing sensation with the Semmes Weinstein monofilaments?? Conclusions and recommendations are presented.

Sustainable Self-Care for POD in North Malawi

AM Molesworth1,2, LK Sichali1, DT Mwafusirwa1, AC Crampin1,2, PEM Fine2, N French1,2, Karonga Prevention Study
PO Box 46, Chilumba, Malawi2, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT, UK
E-mail: anna.molesworth@lshtm.ac.uk

Introduction: Leprosy has been eliminated from Malawi but disability as a consequence of the disease continues to exist. Karonga Prevention Study (KPS) has recently reviewed the scale of this problem in Karonga District, to establish a sustainable care plan for treated leprosy patients and prevention of their disabilities (POD). Methods: Over 650 leprosy patients in Karonga district who had ever had a leprosy related disability recorded by KPS were followed-up through household visits by two leprosy control assistants (LCAs). Disabilities were assessed and care administered. Results: A total of 250 of the 650 patients were still alive and living within the district by February 2007. Of these, 150 were placed on a “care register”, including 50 with current ulcers and/or a leprosy-associated secondary infection who were eligible for patient-initiated clinic-based active care, and 100 patients with other leprosy-attributable conditions (eg. dryness, anaesthesia, including people requiring protective clothing) - assigned to home-based self-care. About 25 patients required ophthalmic referrals, and a small number (5) with severe difficulty walking required some further specialist advice. Conclusion: Disability from leprosy remains a care issue in Malawi despite its official elimination. Strategies to address issues of coverage of self-care and access to footwear have been identified as a key research priority in POD. Annual follow-up of leprosy patients will confirm whether this self-care strategy is effective and sustainable.
Further Developments that Contribute to Understanding of the Aetiology of Plantar Ulcers

Hugh Cross
American Leprosy Missions, Box 002 2nd Level, Paseo Marina, Ayala Center, Cebu Business Park, Cebu City, 6000 Cebu, Philippines
E-mail: hacross@pltdsf.net

This study contributed evidence to support a general hypothesis that the kinematic function of the subtalar joint may be a predictor of plantar ulceration for people with insensitive feet. Data relating to 144 people was used. Feet included in the study had normal skeletal structure (no bone loss) and no apparent loss of muscle function (intrinsic or extrinsic). Data related to 263 feet were used. Three independent groups were analysed: “Normal” (no loss of plantar sensibility), “Insensible” (unable to detect pressure stimulus) and “Impaired Skin” (Insensibility and ulceration or scars from prior ulceration). F Scan technology (Tekscan Inc., Boston, MA) was used to gather salient kinetic data. Using a simple semantic classification, sub groups of feet were categorised as “Neutral”, “Pronated”, “Hyper Pronated” or “Supinated”. It was found that where people presented with STJ positions other than “Neutral” higher forefoot peak pressures were recorded. The relative risk that ulceration would present on “Hyperpronated” or “Pronated” feet compared with “Neutral” feet was high (5.3 and 2.8 respectively) but “Supinated” feet were not at greater risk of presenting with ulcers than “Neutral” feet. Recognition of the position of the STJ during stance may help to identify people at risk of ulceration and may also serve as a guide to appropriate foot orthotic therapies. Interventions to prevent ulceration or ulcer recurrence should consider such factors.

Rapid Disability Appraisal Tool Kit Used Among People with Disability in South Sulawesi, Indonesia

Wim H van Brakel1, Inge van der Vliet2, Ilse Schuller3, Sani Silwana4, Djunaidi Dahlan5, Kerstin Beise6, Laksmi K Wardhani7, Suryanto Asapa8, Marianne van Elteren2, Daan Ponsteen2, Hernani Djarid9
1 Royal Tropical Institute (KIT), Amsterdam, Netherlands, 2 Vrije Universiteit Medical College (VUMC), Amsterdam, Netherlands, 3 Hasanuddin University, Makassar, South Sulawesi, Indonesia, 4 Netherlands Leprosy Relief Indonesia, Makassar, South Sulawesi, Indonesia, 5 Pusat Latihan Kusta Nasional, Makassar, South Sulawesi, Indonesia, 6 South Sulawesi Provincial Health Officer, Makassar, South Sulawesi, Indonesia, 7 Netherlands Leprosy Relief, Amsterdam, Netherlands, 8 Sub-Directorate for Leprosy and Yaws, Jakarta, Indonesia
E-mail: w.v.brakel@kit.nl

Introduction: The purpose of this study in South Sulawesi Province, Indonesia, was to test and validate a toolkit of instruments for Rapid Disability Appraisal (RDA). Method: We designed a toolkit of instruments to assess different aspects of disability, including only instruments compatible with the International Classification of Functioning (ICF). The RDA toolkit comprises 5 instruments (questionnaire on personal factors, child disability questionnaire, WHODAS-12, Participation Scale and perceived stigma scale). In-depth interviews and focus group discussions were also conducted with people with disability (PWD) and community members. Results: 331 PWD and 50 controls were included in the study. Most RDA interviews were completed in under 1 hour. Inter-interviewer reliability of the scales was good. Associations between personal factors and WHODAS, Participation Scale and stigma scale scores were as expected. Strong associations were also found between levels of activity, participation and stigma. Activity and participation were affected among 57% and 60% of PWD, respectively, without big differences between people with leprosy and PWD; 21% reported stigma. Qualitative analysis revealed a remarkable difference in the level of stigma against people affected by leprosy and people with other disability. Conclusions: ICF-based rapid disability appraisal is possible using the RDA toolkit. It is suitable for use with people affected by leprosy and with people with (other) disability. Keywords: disability, leprosy, rapid appraisal, ICF, disability measurement, stigma.
Effectiveness of a Community Based POID Program

G Norman, Hugh Cross, Y Sathiyaraj and G Sudhakar
Department of Community Health Schieffelin Institute of Health-Research & Leprosy Center, Kargiri, India
E-mail : normangift@yahoo.co.in

A community-based Prevention of Impairment and Disability (POID) program was initiated in 2000 in 3 out of the 4 blocks that comprised the Gudiyatham Taluk, to provide home based care, educate patients on self care, identify and train members of the family/community as care givers and provided aids & appliances where appropriate. This program was not extended to block 4, after services were vertical services discontinued in 1997. The aim was to study the effectiveness of this community based POID (CBPOID) program in terms of the disability profile, activity limitation, participation restriction, the knowledge and impact of self-care, and use of appropriate footwear. The methodology used was to compare two groups of 120 patients in each group - 40 patients from each of the grades 0, 1 & 2 randomly selected - one group living in 1,2,3, blocks who were provided care through the CBPOID program and a comparison who were not provided care through the program. Patients were assessed using a standard disability assessment form, the SALSA and Participation Restriction questionnaire. The data is being analyzed for changes in WHO disability grade, EHF score, SALSA and PR score. The results will be reported.

Burden of Leprosy Disabilities in Rural India - A Study in villages Near Bombay

R Ganapatia, A Ladda2, VV Pal1 and A Tripathi1
1 Bombay Leprosy Project, 2 Sion-Chunabhatti, Mumbai, India, TB & Leprosy Division, Govt. of Maharashtra, India
E-mail : rganapatia@yahoo.com

We have earlier reported on the disease burden caused by leprosy disabilities in Shahapur, a “taluka” situated about 100 km from the metropolis of Bombay (Ganapatia et al 2007, Pal et al 2007). In the population of 2,78,524, a total of 286 patients with disabilities were identified by engaging rural volunteers working under trained supervisory staff. The area of Shahapur taluka was wide. We could not cover the entire population, some villages being located in inaccessible hilly terrains. As Primary Health Centre (PHC) is expected to play in future a crucial role in the management of leprosy in an integrated set up, we started an investigation focusing only on the population covered by four PHCs (out of nine) in Shahapur. We intensified the campaign of identification of disabilities. In the population of 1,49,000, covered by four PHCs alone, 294 (Grade II-246, Grade I-48) patients were unearthed. Conclusion : The intensive identification of disabilities in 4 PHC populations is far more than the crude figure reported for the “taluka” as a whole. Such a heavy load of leprosy disabled has not been reported in the literature and this calls for intensive training of PHC staff and appropriate management of patients.

Self-Care Kit – A Key Modality of POD for Healing the Plantar Ulcers at Home

Atul Shah and Neela Shah
Comprehensive Leprosy Care Association Remi Bizcourt, GR-01, Veera Desai Road, Andheri West, Mumbai 400 058, India
E-mail : clcp@vslnl.com

Majority of admissions in the temporary hospitalization ward or in the leprosy hospitals are for ulcers on the feet. It has been almost a decade since “Self-care Kit” was introduced by NCLCA as key modality for healing the wounds and ulcers at home. NCLCA’s “Self-care Kit” is a zippered bag containing antiseptic liquid, foot scraper, antibiotic ointment, a moisturizing cream, sterilized gauze, scissors, bandages and an adhesive tape. Step-wise empowerment training is given in the use of the self-care kit at as “Group Therapy” session, which consists of use of the kit at home. Finally, patients are given the MCR footwear wherever indicated. At the field level, coming together of patients with different skin conditions and deformities at a group therapy session also act as motivating factor for practice of the self-care. Follow-ups show that after achieving cure or visualizing the good result by the use of the Self-care kit, the patients feel more in control of their disabilities. Cost is low especially when compared to the amount that a patient has to spend to reach the hospital daily for dressings. The cost to service provider is also low when compared with admissions. In essence, the field area approach adopted for management of disabilities in feet with “self-care kit” is a simple and pragmatic solution for the vexatious problem of ulcers and wounds in leprosy. Presented at the SEARO Conference at Myanmar in 1999, it has been adopted and replicated by government and NGOs alike with locally available materials. However, its adoption is needed at still wider scale for empowering patients in prevention of disabilities.
Osteoporotic Fractures in Leprosy-Affected

CR Butlin, J-F Negrini and H K Roy
DBLM Hospital, Nilphamari, 5300, Bangladesh
E-mail : druth@rediffmail.com

Leprosy may lead to great disability through nerve damage and its consequences. Osteoporotic fractures may cause potentially-avoidable extra suffering and further disability in leprosy-disabled individuals who have an unfortunate combination of risk factors. Patients suffering various complications of leprosy are managed at DBLM hospital in Northern Bangladesh. Among patients admitted over the past 4 years we identified at least 8 who had suffered osteoporotic fractures of vertebra or femur, and considered the risk factors in each case. We reviewed management for these cases with a view to making recommendations to reduce the incidence of such fractures. Sample case histories will be presented. Several patients had multiple risk factors, including long term steroid treatment, prolonged immobility and malnutrition. Even in those who complained of bone pain, some fractures were not promptly diagnosed. Staff are now more alert for this type of case. For avoiding additional disability, the risks associated with osteoporosis needs to receive adequate attention. Measures to prevent falls as well as methods to improve bone density are important. Key words : osteoporosis, leprosy-affected people, disability, prevention.

A New Method to Reconstruct Nasal Lining in Nose Deformities of Leprosy

TN Meyer1 and MAF Grossi2
1Casa de Saúde Santa Fé, FHEMIG, Três Corações; 2SES/MG, Belo Horizonte, Brazil

Introduction : Multibacillary leprosy is a common cause of nose deformities. Nasal lining can be severely injured by direct mycobacterial action. The surgical techniques used to reconstruct the nose must include some form of providing new nasal lining. In this work, a case is presented in which the lining was reconstructed with vascularized oral mucosa. Methodology : An adult male patient with treated lepromatous leprosy and typical nose deformity underwent a two-stage nasal reconstruction. In the first stage, nasal lining was reconstructed with a facial artery myo-mucosal (FAMM) flap, taken from the left side of the oral cavity. Result : Healing proceeded uneventfully, providing new lining to the nasal cavity. Conclusions : The FAMM flap is a valid novel alternative to reconstruct, with vascularized mucosa, the destroyed nasal lining in leprosy. Keywords: Leprosy. Nose deformities, acquired. Rhinoplasty.

Nerve repair by Denatured Muscle Autografts Promotes Sustained Sensory Recovery in Leprosy

JH Pereira, DD Palande, TS Narayankumar, DS Subramanian, G Gschmeissner and M Wilkinson
Department of Surgery, James Paget University Hospitals NHS Foundation Trust, Lowestoft Road, Gorleston, Great Yarmouth, Norfolk, NR31 6LA, UK
E-mail : jerome.pereira@jpaget.nhs.uk

Introduction : To assess the long-term results of nerve muscle grafting for promoting sensory recovery in leprosy. Methods : Thirty-eight leprosy patients with localised irreversible nerve damage, 11 median at the wrist and 37 posterior tibial at the ankle were repaired using freeze-thawed skeletal muscle autografts ranging from 2.5cm. to 14 cm. lengths to promote sensory recovery. Detailed 6-monthly sensory motor assessments were performed. Questionnaires were used to assess quality of life and hand and foot function. Results : Sensory recovery was noted in 34 out of 38 patients and maintained throughout follow-up periods up to 14-years. Following median nerve repairs all patients remained free of ulcers and blisters, 18 out of 11 demonstrating texture perception and 8 out of 11 weighted pins. In the posterior tibial nerve repair group 24 out of 30 showed improved healing of ulcers and texture discrimination in 26 out of 30 repairs. The quality of life and hand and foot questionnaires showed improvement, daily living response was improved 80% after hand operation and 60% after foot operation. Conclusion : This study demonstrates that nerve muscle grafting results in improved ulcer healing and textural recognition; with high patient satisfaction levels. Key Words : Denatured muscle autografts – leprosy nerve damage – sensory recovery – ulcer healing.

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A Literature Evaluation of the Potential of Surgical Nerve Decompression to Reduce Impairment and Disability in Hansen Disease Neuritis

D Scott Nickerson
Nickerson Ties for the DS AM, PO Box 278, Big Horn, WY 82833, USA

Recent onset leprosy neuritis has been effectively treated both by prednisolone and surgical nerve decompression. Both treatments are known to be most effective when used within 3 to 6 months of onset of impairment. There are however limitations to the effectiveness of steroid treatment with significant failure rates of 25-50%, and in some patients steroids cannot be used. Nerve decompression treatments also have significant failure rates. In practice surgery has often been used in last resort fashion when medical treatment for a number of months has failed. Attempts to define best sequencing, surgical techniques, and patient selection have never been settled with strong scientific studies. Expert opinion on when operation is indicated runs the gamut from very early to never, ever. Two reports on a single patient group are widely understood as having settled the issue by showing no additional benefit to surgery in comparison to steroid treatment alone. The significant weaknesses in design and execution of these Panikkar and Ebeneezer studies are examined in detail. The small randomized prospective study of Boucher suggests that in some parameters combined surgery and steroid protocols are superior to steroid alone. A collation of indications for nerve decompression based upon expert opinion of several authors is presented. The various opinions of who should be operated, when surgery should be offered, and how nerve decompression, should be done are discussed. A growing body of literature supporting the use of nerve decompression for pain relief and prevention of complications in diabetic neuropathies is reviewed which likely has relevance in Hansen disease. Several studies are identified which give optimism that improvement may even be achieved in more chronic and longstanding leprosy neuritis impairments. A protocol is suggested which would sequence steroid use and nerve decompression dependant upon rapidity and degree of patient response, the occurrence of relapses, and residual pain levels. This should produce strong scientific evidence which can guide future decision making and achieve best patient outcomes minimizing residual impairment, pain, and disability.

Towards Restoring the Function Faster After Corrective Hand Surgery

Govind Narain Malaviya
National JALMA Institute for Leprosy and Other Mycobacterial Diseases (ICMR), Taj Ganj, Agra, India
E-mail: govindmalaviya@rediffmail.com

The conventional plan for restoring function includes surgical correction, immobilization in plaster cast, suture removal and post-operative physiotherapy. It takes on average 7 weeks from the day of operation in a fully mobile uncomplicated claw hand. Of these 3 weeks are for immobilization and rest for physiotherapy. Some reports are available about early mobilization after tendon repairs but reports on early mobilization after tendon transfers are scanty more so in leprosy. The emphasis in these reports are either on the final outcomes or on comparatives with convention protocols. The details about mobilization and exercise programs have not been given in detail. The present paper describes the protocol for some popular procedures for claw finger correction and opponensplasties, for early mobilization and physiotherapy.

Post-Operative Follow-up of Foot Drop Patients a Retrospective Study

A Subramanian
Sacred Heart Leprosy Centre, Sakkottai, South India
E-mail: Shlc_kmb@sancharnet.in

Introduction: Foot drop, a known complication of leprosy, cause altered gait, uneven pressure and plantar ulcers. A retrospective study was undertaken in Sacred Heart Leprosy Centre, Sakkottai, South India, to assess the results of Tibialis Posterior tendon transfer (TPT2T) to correct foot drop. Method: 200 patients who underwent TPT2T were included. All patients had adequate pre- and post-operative physiotherapy. The surgical procedure is the standard (i.e.) disinsertion of Tibialis Posterior Tendon, brought out at leg, divided into 2 slips, tunnelled circumtibial to dorsum, sutured to EHL and EDL tendons. Post-operative range of movement from active plantar flexion to active dorsiflexion was taken as improvement achieved. Results: Total n = 200 patients (Males 178, Females 22): Age in years 10 - 25 = 41 (20.5%) s in years in years: 1 - 5 = 159 (79.5%) 6 - 10 = 31 (15.5%) > 10 = 10 (5%) Follow-up period in years: 2 - 10 = 89 11 - 20 = 63 21 - 30 = 48 Improvement observed: Nil range = 5 (2.5%) Poor Upto 10 degrees = 56 (28%) Fair 11-25 degrees = 84 (42%) Good > 25 degrees = 55 (27.5%) Excellent Discussion: Surgery restored gait in majority - In 30 patients who had ulcer - recurrence was less after surgery. - In severely deformed foot, surgery helped to fit PTB. Conclusion: Foot drop correction is a mandatory component in leprosy care. Key Words: Foot drop, Tendon transfer surgery, Dorsiflexion, Range of movement.
Feasibility of Conducting Reconstructive Surgery in Integrated Approach – An Experience in Orissa

A Kameswara Rao, D Porichha and PV Ranganadha Rao
LEPRA Society, N-1/89, IRC Village, BHUBANESWAR-751 015, Orissa, India
E-mail: kamesh@roorleprasociety.org

Introduction: Leprosy leads to disability which continues as a life long problem, if not treated early. Through Reconstructive Surgery (RCS) some of the disabilities can be corrected and the lost form and functions are restored. LEPRA Society is extending RCS facilities in Orissa since 1994 in a vertical set up. To sustain the programme in the mainstream, this Society as ILEP coordinator for the state has started facilitating these services from 2006 in various pioneer leprosy institutions, medical colleges & NGO hospitals of the state. This paper aims to present the experience of re-constructive surgeries undertaken from January 2006 to August 2007 in an integrated approach in Orissa. Methodology: It was piloted in 6 institutions and found 3 promising institutions to continue the same in ensuing years. The programme implementation is in line with DPMR plan announced by GoI (yet to be launched). As mentioned in the project plan all suitable cases were referred by the concerned health workers through proper channel after imparting required training for various categories. All the post operative cases are subjected for follow-up till 5 years. Results: The details of corrections are given in the following table.

<table>
<thead>
<tr>
<th>Type of correction</th>
<th>Male</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rt.</td>
<td>Lt</td>
<td>Total</td>
<td>Rt.</td>
<td>Lt</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Ulnar claw</td>
<td>52</td>
<td>29</td>
<td>81</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>111</td>
</tr>
<tr>
<td>Opponense</td>
<td>09</td>
<td>08</td>
<td>17</td>
<td>03</td>
<td>03</td>
<td>06</td>
<td>23</td>
</tr>
<tr>
<td>Foot drop</td>
<td>39</td>
<td>16</td>
<td>55</td>
<td>10</td>
<td>04</td>
<td>14</td>
<td>69</td>
</tr>
<tr>
<td>Lagophthalmos</td>
<td>02</td>
<td>07</td>
<td>09</td>
<td>02</td>
<td>03</td>
<td>05</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>60</td>
<td>162</td>
<td>30</td>
<td>25</td>
<td>55</td>
<td>217</td>
</tr>
</tbody>
</table>

Among the 198 cases operated, the male population is 153 (75%) and the rest 45 (25%) is female. Age ranged from 13-52. Of the 217 surgeries conducted, 134 (61.7%) were on upper limb, 69 (31.8%) on lower limbs and the rest 14 (6.5%) on eyes. As mentioned in many references, ulnar was the commonest nerve affected since 51.1% ulnar clawing corrections were performed amongst the total. Dominance of right side deformity correction is observed in 60.8% when compared to left 39.2% which is 1.5 times higher. The initial follow-up results reveal satisfactory results in about 80%. Conclusions: RCS can also be done in integrated system. Ulnar clawing stands as the most common deformity requires RCS. Key words: RCS, ILEP, DPMR, Upper limbs, Lower limbs, Ulnar clawing, deformity.

Reconstructive Surgery of the Foot in Leprosy

J Joshua
The Leprosy Mission Premnanda Memorial Hospital, 259-A, A P Chandra Road, Manicktala, Kolkata, West Bengal, India
E-mail: jerry.joshua@tlmindia.org

Reconstructive surgical procedures of the limbs in leprosy were originally envisaged as tendon transfer procedures of the hands and feet and soft tissue reconstructive procedures and bone grafts of the hands and feet. However over the last 20 to 25 years, there is a perceptible trend to classify only tendon transfers as reconstructive surgical procedures of the limbs. This paper seeks to explore the various options available for reconstruction and salvage of disintegrating feet in leprosy apart from the procedures for foot drop correction and claw toe correction. An attempt is made to look again at these procedures such as arthrodesis, cutaneous flaps, neurovascular flaps and osteo-cutaneous flaps and reintroduce them into the armamentarium of the reconstructive surgeon working in the field of leprosy. It is concluded that these options should be considered before the foot is condemned to an amputation, and recommended that training in reconstructive surgery should also include experience and orientation in this method of thinking. Keywords: reconstructive surgery of foot, reconstructive surgery in leprosy.
Factors Affecting Success of FDS (Flexor Digitorum Superficialis) Transfer to Replace Opposition of the Thumb

Das Premal and BJLK Kumar
The Leprosy Mission Hospital, Naini, Allahabad, UP, India
E-mail: tmnaini@tmindia.org

Introduction: Loss of opposition of thumb complicates the hand coordination of the patient with median nerve paralysis. Opposition can be replaced by Opponens replacement (Ring finger FDS procedure or EIP transfer) and also restore the appearance of the thumb. However there are several factors, which affect the success of the procedure. Results: In this paper, amount of opposition level increased and improvement in grasp contact, pinch contact and muscle power after FDS transfer are described and correlated with specific patient factors based on leprosy patients who underwent FDS transfer during 1998-2006. About 100 patients were studied, all with Ulnar and Median paralysis and assessment was made 6 weeks after surgery. Key words: FDS transfer, thumb opposition.

Medial Planter Artery Flaps in Heel Ulcers - Outcomes and Patient Satisfaction

CS Robertson and JR Shalini
The Leprosy Mission Hospital, Shahdara Nand Nagri, Delhi, India
E-mail: tmshahdara@tmindia.org

Heel ulcers are one of the major causes of amputations in leprosy patients with anesthetic feet. Conservative management with rest and Plaster of Paris has limited benefits with high rate of re-ulcerations. We have used medial planter artery flap for heel ulcer coverage in 22 patients with 1 flap necrosis and 1 re-ulceration. All the 20 patients are very satisfied and ulcer free at 1 year follow-up. Key words: heel ulcer, medial planter artery flaps.

Restoration of Opposition of the Thumb by Extensor Digiti Minimi Transfer in a Case of Partial High Median Paralysis

August Beine
Sivananda Rehabilitation Home Kukatpally, Hyderabad 500 072, India
E-mail: sivanandahome@gmail.com

For correction of considerable severe Partial High Median Paralysis (usually combined with Partial Radial Paralysis and Ulnar Paralysis) directive publications are rare (Fritschi (1984) and Srinivasan H (1978) and in such cases of partial High Median Paralysis the number of motor tendons available for successful transfer is considerably if not extremely reduced. In one such case who had undergone already Abductor Pollicis Longus Deviation Graft Operation modified for stabilizing CMC and MCP joints of “intrinsic minus” thumb (Beine A (2005) we did an innovative surgical procedures using extensor digiti minimi for opponens replacement, which worked combined with the earlier done procedure extremely well, restoring opposition of the thumb.
A Clinical, Histopathological, and Immunohistochemical Evaluation of Sensory Impairment Recovery and Nerve Regeneration in Leprosy Cutaneous Lesions

AC Castra, Magalhães GO, Rangel E, Illarramendi X and Antunes SL
Oswaldo Cruz Foundation / Leprosy Laboratory, Av. Brasil 4365, Manguinhos 21040-900 – Rio de Janeiro – RJ - Brazil
E-mail : santunes@ioc.fiocruz.br

Recovery of sensory impairment (SI) of leprosy cutaneous lesions, assessed by sthesiometric tests, and nerve regeneration, evaluated via immunohistochemical labeling of PGP9.5 and NGF receptor neural markers after MDT, were correlated with DNDI, a histopathological dermal nerve damage index, in 35 leprosy patients. Results: Thermal and pain sensations were the most frequently affected neural functions. Tactile sensation was the least recovered after MDT. No correlation was found between SI and DNDI. However, epithelioid granuloma in the infiltrates correlated positively with the presence of thermal sensation impairment and lower recovery levels after MDT. The dermal occupation rate by PGP- and NGF-immunolabeled nerve fibers in the 1st and 2nd biopsies taken from a restricted group of 11 patients were not significantly different, suggesting that the basic recovery process is not a regenerative one. These study results indicate that MDT has a varied albeit indirect influence in the recovery of sensory impairment.


Lin-Lan Li1, Li-Mei Shen1, Hong-Jiang Mu1, Xia Bao1, Wei Ke1, Ying Wang1 and Hugh Cross2
1Institute of Dermatology, Guizhou Provincial Center of Disease Control and Prevention, P.R. China and 2American Leprosy Missions
E-mail : GZLUELE@yahoo.com.cn

Objective: To understand the influence and effect of prevention of disability (POD) for people affected by leprosy in 9 counties of Guizhou Province, Peoples Republic of China. Methods: According to the principles and national criteria of the NCLC, POD Pilot program, 1215 people affected by leprosy were selected, followed up and assessed with the use of disability record forms through which essential indicators were regularly observed. Result: Most improvements of disabilities occurred in the 1st year of the POD project. 55 neuritis cases were detected and treated with prednisolone out of 262 new or active cases, 47 of these improved. Self-care program was instituted among 1130 people who completed a 3 year program. 88.5% of red eyes, 83.9% of hand ulcers and 62.8% of simple foot ulcer cases were healed. 196 people who presented with complicated ulcers were treated, of them, 73 (37.2%) people reported with healed ulcers. Conclusion: The POD project was a cost-effective method to prevent further disability occurrence among people affected by leprosy. Most of people affected by leprosy were satisfied that their disability improvement had been due to self-care. The program had helped them to increase their confidence to implement self-care activities and to reintegrate them socially. More specific professional trainings should be provided for public health workers for the implementation of further projects. Key words: Leprosy; Disability; Prevention.

Anatomical and Functional Outcome of Opponens Transfer of Hand in Leprosy

S.Partheebarajan, Sendhil and Mannam
Ebenzer Schieffelin Institute of Health Research and Leprosy Centre, Karigiri 632 105, India

Introduction: The purpose of the study is to measure the anatomical and functional outcomes of opponens transfer in leprosy. Methodology: All patients who underwent opponens transfer over the period 1995 - 2001 were selected for the study. Charts were retrospectively analyzed and patients were called for assessment according to Sundarraj’s evaluation criteria and also functional assessment of hand like pinch strength, grip strength and fine manipulation were measured. 56 patients were included in the study. Results and Conclusions: According to Sundarraj’s criteria, 76.6% had excellent or good results, 13.3% had fair results and 10% had poor results. There was statistically significant improvement of pinch strength, grip strength and fine manipulation between excellent/good and fair/poor and also between preoperative and postoperative. Age and duration of paralysis had statistically significant influence on the outcome of surgery. Key words: Surgical correction, Opponens transfer, Pinch strength, Grip strength and fine manipulation.
Prospective Assessment of Disability, Surgery and Quality of Life: Design, Methodology and Intake Findings of the PASQUAL Study

Natasja J van Veen 1, Bob Bowers 2, Hemo R Dinabandhu 2, Jean-Francois Negrini 3, David Pahan 2, Jan Hendrik Richardus 1 and Johan P Veema 1

1 Department of Public Health, Erasmus MC, University Medical Center Rotterdam, P.O. Box 2040, 3000 CA Rotterdam, Netherlands, 2 The Leprosy Mission Bangladesh, Nilphamari, Bangladesh, 3 Evaluation & Monitoring Network, The Leprosy Mission International, Apeldoorn, Netherlands

Introduction: Leprosy is a disabling disease. The present study was set up to assess the perception of disabled people about their daily functioning and social participation and how reconstructive surgery might improve this. Methods: PASQUAL is designed as a follow-up study of people with disability. People who are willing to undergo surgery will be included in the intervention group. People who do not undergo surgery will be included in the referent group. This study in northwest Bangladesh aims to include 250 people, aged between 15-60 years, affected by leprosy with nerve function impairments of hands or feet which can be corrected by tendon transfer (claw hand, ape thumb, foot drop). The assessment consist of a participant details form, the SALSA, P-Scale and SRQ-20. The SALSA measures activity limitations and safety awareness, the P-Scale estimates participation restrictions, and the SRQ-20 screens for mental disorders. Patient expectations and satisfaction of surgery will be recorded for the surgery group. Follow-up assessments will be done after one year, and possibly after two and three years. The main outcome measure is difference in ‘quality of life’ scores over time and between groups. Results: We will present and discuss intake findings. Conclusions: This is the first study aiming to evaluate the impact of reconstructive surgery on functioning and quality of life in persons affected by leprosy. Keywords: leprosy, disability, surgery, quality of life.

Volunteer Training of Trainers in SC / POD

Abhijit Joshi
International Leprosy Union Pune, India
E-mail: dr.abhijit@gmail.com

Aims: Volunteer Training of Trainers and PAL’s in SC / POD. Objectives: The objective was to train the trainers with sufficient knowledge of self care and POD so as to enable them to further train other volunteers and PAL’s in Self care and POD. It is expected that these volunteers will, in turn teach other volunteers self care and POD and this process goes on. Highlight self reporting for leprosy diagnosis. Creation of Self Care groups. Target Audience: 1) PAL’s 2. Grass root volunteers working in the field of Leprosy. 3. Volunteers of Bharat Scouts and Guides who are working in the field of Leprosy. 4. Lokdoots. 5. Any other NGO working in the field of Leprosy. Details: One of the main aims was to teach all those who attended this workshop, practical working details of self care and POD. These would be the first level of trainers. These trainers will then teach other people in the community, volunteers, and people working with PAL’s, or Leprosy patients what they have learned at this workshop about SC and POD so that they in turn become 2nd level of trainers. These 2nd level trainers then teach 3rd level of trainers and the process has a domino effect and by this way a vast number of people who have working knowledge of leprosy SC and POD is created. This takes place at the grass root level and there is horizontal and downward spread of knowledge. Workshops thus conducted will train far more number of trainers than those Who actually attend the workshop. The workshop teaches trainers to train others to become trainers including Lokdoots (an Indian term for cured patients spreading the word of Leprosy cure coined by Dr S D. Gokhale...) the following diagram illustrates this. The SC and POD activities that are taught include cases of hand, feet, eyes, skin etc which are discussed in depth, queries addressed, and practical tips given. The participants are given a good working knowledge about the same and problem solving in SC / POD is discussed. Along with these participants are taught how to start self care groups in the community and to teach others how to start self care groups. The limitations of such groups and SC / POD activities are also highlighted. Results: So far up to 2 levels of TOT knowledge spread workshops have been held, i.e. 1st level of trainers were taught and they in turn taught 2nd level of trainers and they in turn taught 3rd level of trainers. Hence the total number of people trained was far far more than the number which attended first training. Conclusions: This type of model is effective in rapid dissemination of knowledge of SC POD in high endemic areas at a far lower cost. Keywords: Self care, POD, Trainers
Disability Status in MB Leprosy Patients After Release from Treatment (RFT) in South India

B Nagaraju, BN Murthy, VN Mahalingam and MD Gupte
National Institute of Epidemiology, Chennai -77, India
E-mail : bathyalan@yahoo.com

Introduction: Leprosy prevalence has come down to elimination stage i.e less than 1 per 10,000 during post-MDT era. Public health administrators felt that in addition to identification of cases through integrated surveillance system, management and rehabilitation of disabled patients is necessary. The literature on development of disabilities in MB patients after RFT is scarce. Hence, this study is carried out. Objective: To assess the disability status after RFT during 5 to 15 years of follow up. Methodology: Experienced leprosy field investigators from NIE blinded for earlier status examined all the patients for current disability. (Disability status was assessed based on WHO guidelines 1980). The information on disability was collected for 370 patients. But the information at three points of time from RFT was available only for 87 patients during 5 - 15 years of follow up. The disability status from one state to the other during the follow up was assessed. Results: a. Out of 15 patients with no disability at RFT, 14 (93.3%) remained with no disability. b. Out of 28 patients with grade I disability at the time of RFT, 8 (28.6%) have progressed to grade II, while only one patient progressed to grade III. 6 (21.4%) patients remained static (grade I disability), while 13 (46.4%) have improved from grade I to normal. No patient has improved from grade II to normal. c. Out of 27 patients have progressed from grade II to grade III disability. 12 (44.4%) out of 27 patients remained in the grade II status. Only one patient has improved from grade II to grade I. Out of 17 patients with grade III disability at RFT, 16 (94.1%) remained at the same status. Only one has shown improvement (grade II disability). These results indicate that misclassification error in assigning the disability grading is minimal.

A Follow Up Study of Recurrent Planter Ulcers in Leprosy in Kolkata

S Saha, A Pathak, N Mahato and J Joshua
The Leprosy Mission Premnanda Memorial Hospital, 269-A, A P Chandra Road, Manickta, Kolkata, West Bengal, India
E-mail : tmkolkata@tmindia.org

Introduction: Chronic heel ulcers are frequently seen problems in anaesthetic feet in leprosy. Many flaps have been described in the management of small defects of the heel. These range from simple local flaps to micro vascular free flaps. Methods: In Premnanda Memorial Leprosy Hospital, in the course of seven years (between January 2000 and December 2006) we have seen a total of 245 heel ulcers in anaesthetic feet due to leprosy. 162 surgeries were performed on 129 cases. Procedures included calcaneal paring alone (8 cases), local rotation flap(51 cases), medial planar artery island flap (49 cases), cross thigh flap (14 cases), and reversed sural artery flap (6 cases) as the first procedure. Results: 32 cases underwent more than one surgery. The duration of ulcers prior to the surgery ranged from 1 month to 15 years. The follow-up period ranged from 1 month to 4 years. Healing time after the surgery ranged between 16 and 45 days. Complications seen included wound infection (9 cases), haematoma formation (2 cases), recurrence of a sinus (21 cases), partial flap necrosis (10 cases) and eczema of the flap (6 cases). Recurrence was seen in local rotation flaps (10 cases) and in reversed sural artery flaps and cross thigh flaps (11 cases). Recurrence was not a problem with medial planar artery island flaps. Keywords: planter ulcers, ulcers in leprosy, follow up of ulcers.

Disability Assessment of The Newly Diagnosed Leprosy Cases in Uttar Pradesh, India

MN Casabianca, GR Babu, MV Jose and S Abraham,
The Leprosy Mission office, TLM, CNI Bhawan, 16- Pandit Pant Marg, New Delhi-110001, India
E-mail : reception@tmindia.org

Introduction: In the Post Elimination Era Disability Prevention & Medical Rehabilitation gains greater importance. However, information on Disability Burden is not easily available except in small projects. This study presents the analysis of 1805 new cases assessed from all the 70 districts in the State. Methodology: Case validations using a Standard Proforma are carried out by District Technical Support Teams along with the District Nucleus staff. New cases registered within one to three months were assessed for their Disability Status both Grade-I and Grade-II. Currently data on Grade-I is not collected and Grade-II is found to be only 1% which is way below the National average of 6%. The data collected for 3 months is analysed. Results:

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New cases assessed</td>
<td>1805</td>
<td></td>
</tr>
<tr>
<td>Grade-I Disabilities</td>
<td>152</td>
<td>8.4%</td>
</tr>
<tr>
<td>Grade-II Deformities</td>
<td>82</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

Conclusion: The analysis revealed that Grade-I disabilities could be 8 to 9%. Secondly Grade-II deformity rates of 1% is an under-estimate, thus emphasizing the need to train the health staff in Proper Disability Assessments.
POD Through Integrated Approach in Nellore District

Piet Paul Hemerijckx, Prabhakara Reddy, Rama Devi CV, Sarojini G, Keskar R, Charles U, Perumal R and Murali T

1Damien Foundation Urban Leprosy Centre, Bakhavachala Nagar, Nellore – 524 004, Andhra Pradesh, India
2District Technical Support Team, Nellore, 3Additional DMHO (Lep & AIDS), Nellore,

E-mail: diulonlr@sanchanet.in

Prevention Of Disability (POD) in National Leprosy Eradication Programme (India) is limited to POD camps once a year. Systematic activities are implemented in Nellore district in India by collaborative efforts from district leprosy office and NGO. Health workers and Person Living With Leprosy-related Disability (PLWLD) are trained in self-care practices in 14 out of 61 PHC in Oct 2005. A team of Para-medical staff and physiotherapy technician with experience in POD visited health sub-centres once a quarter and provided on-the-job guidance to health workers in supervision of PLWLD. The progress is monitored by the team using a checklist once a quarter. PLWLD practising self-care has been maintained at around 71% and 78.6% of health workers are supervising PLWLD. Plantar ulcer healed in 61/138 (44.2%). MCR footwear (280 pairs) has been distributed to the needy. Continuous supervision and support resulted in sustainable POD activities in an integrated set-up. Key words: POD, self-care, integrated, leprosy.

Early Interventions, Helps to Reduce Disability

Praveen Satna

E-mail: dr_praveen_satna@yahoo.com

Introduction: A study was carried out in Grade I & II disability, Neuritis and Reaction cases. The study was centered around males mean age -52 and females mean age -44 years. The class in focus – maximum in labour class (50%), B.P.L. (75%), uneducated class (68%) with no primary education. (Table-I) Aim of the study was to impart knowledge of self-care; to provide protective aids; to motivate individuals for RCS/other surgery. Methodology: Data was collected from April 1997-March 2007 disability cards/reaction and neuritis cards of individuals. Briefly stating, Grade I -267 cases; Grade II -17 cases; Neuritis-325 cases; Reaction-437 cases (Table – II) Personal periodic intervention was carried out. Group intervention and family counseling were some of the hallmarks of our intensive work in this field. A monthly follow up of individual cases was carried out systematically by medical officers, leprosy and health workers. Interventions given to above-mentioned individuals were as follows- Health education: An early introduction of self-care practices HOPE, POD CAMPS, wound dressing, nasal toileting, splints, grip-aids, decompression surgery/ RCS/ Medical management and other required protective gears. Observations: Outcome of these intensive measures were amazing and rewarding. In Grade I cases of 267 cases, 51-worsened (development of ulcers), 54 cases were static, whereas, 162 cases showed marked improvement. In Grade II, 10 mobile case out of 17, through RCS, at the district level, by orthopedic/plastic/eye surgeons, were almost normalized and they could easily continue with their normal routine. In Grade II, out of 67 fixed deformity cases, 66 showed no change i.e. without cracks, fissures, ulcers. One showed of partial mobility by 10 degrees i.e. without cracks, fissures, ulcers. In neuritis cases, out of 325 cases, early detection and medical/surgical management led to a phenomenal improvement in 324 cases. Only 01 case, five years after decompression were managed medically. Only one case so far was referred to Mission Hospital, Naini (U.P) due to repeated bouts. (Table–III) Conclusions: 1. Early interventions in Grade I disability, by self-care practices HOPE, POD CAMPS and counselling has helped to prevent further disability by 80% 2. In Grade II disability cases it was observed that secondary complications do not occur. 3. Early and good management (Medical/Surgical) of neuritis and reaction cases has brought about a considerable reduction in risk of disability. 4. However, the economic, social conditions of individuals, their work atmosphere, their level of education, standards of living are potent, resistant factors which retard the progress of work and integrated efforts on part of the health personnel. These underlined factors are directly and indirectly responsible for increase in disabilities.
Change of Disability Status Over A Period of Time

Appala Naidu A
Leprosy Society Bhubaneshwar, Orissa, India
E-mail : koraalp@leprasociety.org

Introduction: LEPRA Society started the leprosy project in Malkanagiri in 1992. POD and POWD services have been extended to all the cases as per the requirement. This paper presents the changes in disability status (both improvement and worsening) after appropriate interventions among the disability cases. Methodology: Since inception till December, 2005 the project has registered 3,771 cases for treatment of leprosy. All have been cured with MDT. Among them 674 (17.9%) cases were found to have disabilities; 310 (46%) Gr. I, 364 (54%) Gr.II at the time of registration. All were under chemo & physiotherapy depending upon the duration of onset of disability & clinical condition. Results: Among 674 disability cases, 49 (7.3%) improved, 17 (2.5%) worsened and the others remained static. The status of 18 was improved by RFT while the rest 31 took more time. 20 (40.8%) cases received steroids while the other 29 (59.2%) improved without steroids. Initial Disability status Subsequent disability status Total Gr-2 Gr-1 No disability Gr-2 0 3 3 6 Gr-1 17 0 43 60 Total 17 3 46 66 8 (47%) cases worsened by RFT while the rest 9 (53%) progressively worsened. 8 cases developed motor paralysis has developed motor paralysis and other 9 developed ulcers. Conclusions: The progression of disability in 674 cases of leprosy registered during 1992-2005 is noted and presented. Key words: Disability grade, Impairment, Paralysis.

Dehabilitated Life of Disabled People Affected by Leprosy Among Leprosy Colonies in Kathmandu Valley, Nepal

Shrestha Kancha
Anandaban Leprosy Hospital, P.O. Box 151, Kathmandu, Nepal
E-mail : anandaban@timnepal.org

Introduction: There is a need to determine the profile and quality of life among disabled people who live in Leprosy colonies in Kathmandu valley. Data was collected on a random sample of 61 persons using a questionnaire. Average age of respondents was 49.4 years and 57.4% were illiterate; Most of the people in the colonies belonged to Chhetri and Tamang ethnic groups. The average number of members in a household is 2.97. Majority were single. Average severity of disability (EHF) was 6.67. 93.3% of them did not know that ‘Leprosy is curable’. 75.4% were farmers. 60.6% of Farmer grew grain that was enough for 7.7 months for own consumption. Only 46% had domestic animal for milk and meat products. 95.4% had own house but had poor house environment. 75.4% of the respondents were losing their income because of physical disability, social stigma and lack of jobs. It is concluded that leprosy affected people in the colonies are in need of socio-economic rehabilitation for their economic growth and participation in the main stream of normal community. Key words: dehabilitation in leprosy, dehabilitated life, dehabilitation in leprosy colonies.

Factors Influencing Development of Planter Ulcers Among Leprosy Affected Person of Nepal

Nati Desar and Karuna Neupane
Anandaban Leprosy Hospital, P.O. Box 151, Kathmandu, Nepal
E-mail : anandaban@timnepal.org

Planter ulcer is one of the common problem in leprosy which leads many further damages of the foot. There are many leprosy patients having planter ulcer even though they have been treat with different intervention to reduce planter ulcer. The main aim of this study is to find out key reasons of getting planter ulcer which will help to introduce appropriate method to reduce the planter ulcer. This study will not cover the actual situation of their living places. This study will be descriptive and prospective. About 100 leprosy affected person with planter ulcer attended in Anandaban hospital will be taken as for the study with 1/3 female patient. Method will be direct interview with patient by using standard questionnaire form. Finding data's will be analyzed with using EPI6 in the computer based programme. Results and findings of the study will be discussed at presentation. Key words: factors in planter ulcers, planter ulcers in leprosy.
A Study on the Trained Poor Artisans with Leprosy and Disability: Towards Sustainable Livelihood by Skill Enhancement

Rajkumar Camillus
The Leprosy Mission CNI Bhawan, New Delhi, India
E-mail: reception@tlmindia.org

Introduction: The study emphasizes that skill enhanced artisans with disability and leprosy in Bankura (West Bengal), Champa (Chattisgarh) & Vadathorasalu (Tamil Nadu) have sustainable livelihood through economic development. Methods: The methodology adopted under this study is “the Social Sciences Research Method”. Data was collected from all the beneficiaries from all the above three areas was assessed. Results: 50% and more trained artisans have enhanced their income to minimum wages level. Nearly 50% of them have gainful employment (more than minimum wages). 70% and more have reported skill enhancement in their craft trade and enhancement in their livelihood. Conclusion: The Study has revealed that the trained artisans with disabilities (who have orthopedic handicaps and disability percentage less than 50%) have gained employment opportunities. There is a sustained livelihood for the trained artisans linked with local resources, needs and demands. Key words: disability, leprosy in artisans, training.

Acceptability and Effectiveness of HDPE Prosthesis Among Leprosy Patients Amputated Below or Above the Knee

K Paul Satish, L Gaius and NK Nanda
The Leprosy Mission Hospital Purulia Leprosy Home and Hospital, P.O. Box no. 9, Purulia, West Bengal, India
E-mail: tlmpurulia@tlmindia.org

Persons with amputated lower limbs require suitable prosthesis to restore near-normal function related to mobility and locomotion. The major difficulty of below-knee or above knee prosthesis relates to the ability to provide flexion at the knee to enable squatting or sitting cross-legged, a position most frequently adopted in developing countries such as India. A low-cost, light prosthesis was developed at TLM Hospital in Purulia, which was tested for acceptability and technical qualities. An interview guide was used to assess satisfaction and problems faced by the person. Observations were made on the locomotion, sitting and squatting position in terms of difficulties, effectiveness and smoothness in operation of the device while fitting and walking. Adaptability to various domestic and working environments were also examined. Technical and other engineering aspects for further improvements were noted. A total of 29 persons were studied, who were fitted with the prosthesis and used for at least 3 months. The device seemed to provide a reasonable degree of satisfaction in locomotion or squatting/sitting on the floor for the patient. It also appears to fulfill the professional standards of safety and durability, etc. Key words: HDPE prosthesis, prosthesis in knee amputations.

A Trial on Trophic Ulcers Using Homeopathic Medicine — A Clinical and Histopathological Evaluation

Dhruva Chakraborty
E-mail: sowhap@rediffmail.com

Hansen’s still remains as an enigma not only because of its continued transmission and rise in new case detection rate but also because of the occurrence of deformities in a great proportion of patients. Although MDT regimen has been effective in killing M. leprae resulting in cure of leprosy patient from infection but it has no impact in the occurrence of trophic ulcer. In the present study a double blind clinical trial in homeopathic system was undertaken on MDT cured patients suffering from trophic ulcer. 107 patients with trophic ulcer were selected for this study. 87 patients in the study group were given orally Mercurius Sol, once in a week, for a period of two years and 20 patients of the control group received placebo. Among the patients of study group, 21 showed complete regain of touch and pressure sensation. 23, 18, 14, 7 and 4 patients showed >80%, >60%, >40%, >20% and <20% regain in sensation respectively. Control group did not show any significant change. Histopathology before onset of treatment revealed hyperkeratosis, collagenous oedema of the dermal layer. Nerve bundles were found to be swollen, oedematous, infiltrated with lymphocytes. Nerve fibres showed degenerative changes. In few cases perineural accumulation with plasma cell, foamy macrophages and lymphocytes was noticed in the dermis. Focal perivascular lymphocyte collection was also seen. Sweat glands were atrophic and pilo-sebaceous glands were absent. At the end of the treatment histopathology showed almost normal dermis containing normal looking nerve twigs and few sweat glands. Blood vessels appeared normal. Perivascular and perineural inflammations were absent. Due to regain of sensation patient could take care of their hands and feet which resulted in marked reduction in the size of ulcer. Therefore, the above therapy was found to be most suitable for cure of trophic ulcer. Key Words: Trophic ulcer, Homeopathic medicine, clinical trial.
A Randomised Controlled Trial of Honey Versus Saline Dressings in The Treatment of Plantar Ulcers Secondary to Leprosy

Tim Lewis, Murdo Macdonald, Kishori Mahat, Niru Shrestha and Sonica Dahal
Anandaban Leprosy Hospital, P.O. Box 151, Kathmandu, Nepal
E-mail: training@tlmlep.org

Neuropathic plantar ulceration is a significant cause of disability and stigma in leprosy. At our own hospital setting (Anandaban Hospital, Nepal) ulcers account for 56% of our total bed days. Our average length of admission for patients with plantar ulcers is 45 days. The main dressing used in Anandaban is saline-soaked gauze. Betadine is also sometimes used for very dirty wounds and acetic acid for suspected pseudomonas infection. Our nursing staffs have also used honey as a dressing for a number of years and so are familiar with its clinical use. Antibiotics are only prescribed where clinically indicated (evidence of spreading infection) and we do not routinely swab ulcers for culture and sensitivity. Septic surgery is regularly performed to debride ulcers as indicated and we make frequent use of plaster of Paris casts, with a window to allow ulcer dressing. Honey has been used in wound dressings for many centuries. A number of recent wound care studies have compared the use of honey-soaked dressings with other topical products. However, we have not found another study where honey was used in leprosy related ulceration. We believe that this study will give important information as to the efficacy or otherwise of honey in wound care as we hope to recruit a relatively large number of patients, in a controlled (in-patient) environment. The other advantage of this study is that the wounds studied will be of identical etiology.

Importance of Bio-Mechanical Assessment of Foot and Orthoses in Ulcer Management

SL Narasimha Rao, Arunabala Chaudhary, PV Ranganadha Rao, Sunderesh Peri and B Vijayakrishna
LEPRA Society, HYLEP, Hyderabad, India

Hyderabad leprosy project covered a population of 2.1 million and registered 1418 patients with deformities due to leprosy during last 15 years. Plantar ulcers constituted a major portion of ulcers. Since beginning of 2003, 155 patients with foot disabilities including 62 with plantar ulcers were registered under revised prevention of deformities programme for treatment. Provision of MCR footwear, ulcer management specific to the clinical condition, training in self-care and counselling to patients constituted the revised programme. Considering the fact that the body weight of the patient is an important factor for causing ulcers, a systematic biomechanical assessment of foot was introduced in the management of ulcers. The assessment was used to classify feet, provide suitable orthoses to facilitate healing. The analysis of biomechanical assessment showed that pronated feet were found in 76 patients Supinated in 30 patients. Orthoses were prepared as part of treating 62 plantar ulcers with plantar orthoses suit the biomechanical status of the foot. Out of 62 patients, 81% of ulcers (50) showed complete healing. Improved self care, use of footwear was observed as contributing factors in ulcer healing during the follow-ups. The role of using orthoses and results in ulcer management will be presented in the paper.

Role of Health Resource Centre in Community Based Rehabilitation in Leprosy

Sanjeev Mahapatra
LEPRA Society, HYLEP, Hyderabad, India
E-mail: sanjeev@roorleprasociety.org

Introduction: Leprosy has a unique social dimension of age-old stigma, with an adverse impact on the physical, socio-economic wellbeing. The rehabilitation of a person depends upon community. It became a reality due to community participation and involvement of Health Resource Centers (HRCs) as vibrant catalysts. This is an innovative approach adopted by LEPRA Society, Bargadh and this paper aims to assess the impact of these Centers. Methodology: Since 2004 till date 20 such Centers have been established in 20 Panchayats covering 6 Blocks of the District. They provided support to the project by means of awareness generation within the community through IPC, Rally, Street Play, meetings dealing with signs and symptoms of leprosy and stigma reduction. The centers also played a vital role in disability care and socio-economic rehabilitation. Results: The Centers are currently taking care of 375 leprosy disabled persons. They could incorporate 188 clients and 367 family members in SHGs and conducted 242 Disability Care Clinics where services were rendered on ulcer dressing, health education, self-care. These Centers could link 512 (M-321 & F-191) cured persons to various Government schemes or assistance, resulting in improved socio-economic status of 254 (49.6%). A study report of the project reveals that 95% of the stigma was reduced due to the active intervention by these Centers. HRCs are also actively involved in counseling to prevent worsening of disability, new case referral and motivation for RCS. The table below show the break-up of persons economically rehabilitated. Conclusion: With the facilitation by the HRCs the leprosy affected persons are socio-economically mainstreamed and the stigma is reduced to a fairer extent Key words: Stigma, HRC, IPC, SHGs, Rehabilitation
**A Study on the Effect of Intensive Health Education in Preventing Injuries or Ulcers in Anesthetic Limbs of Leprosy Affected Persons**

S Sivasanakaran, SK Behura, Shirley Immanuel, Charles Richard, S Partheebaran, Mannam Ebenezer and Sakunthala Karat  
Schieffelin Institute of Health - Research and Leprosy Center, Karigiri, Tamil Nadu, India  
E-mail: rajanpot@yahoo.co.in

Prevention of disability of leprosy is a continuous process that requires special technical skills to identify and to achieve the goal. Selected leprosy patients with anesthetic limbs at the initial stage of disease or at the staring of the treatment. They were given intensive teaching over a period of two to seven months. Five years later these trained leprosy patients were compared with matching set of leprosy patients those who are not included in the study. The results are presented.

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**Impact of A Community Based Rehabilitation Project In Improving Social Participation of Leprosy Affected Persons in Rural Maharashtra, India**

Sandhya Prabhakar, Ravi Prabhakar and Hugh Cross  
Vadala Leprosy control & Gorapur rehab project, Vadala Mission, Dist Ahmednagar, Maharashtra, India – 414602 American Leprosy Mission, #002 Mail and More, 2nd Level, Paseo Marina, Ayala Center, Cebu Business Park, Cebu City, Cebu 6000; Philippines  
E-mail: sandhyaprabhakar@rediffmail.com, hacross@pildtisl.net

**Introduction:** Leprosy affected persons in rural Maharashtra still suffer from discrimination, unemployment and miserable living conditions. This study evaluates a CBR program in rural Maharashtra that was designed to improve social participation. **Methodology:** 103 leprosy affected persons were assessed using the P-Scale which measures the extent to which people are restricted from social participation. Measures were taken, before and after a community rehabilitation program. (The scale has a range of scores from 0 to 72). The CBR Strategy used was formation of self help groups with people affected by Leprosy & general community, Micro-credit for small scale business, housing, farm development, as well as awareness programs in the community. **Results:** The scores before the CBR ranged from 11 to 72, with mean (SD) of 27.5(10.9). After CBR, the scores ranged from 3 to 42 with a mean (SD) of 12.9(8.0). Pair wise differences showed a mean (SE) difference of 14.6(0.9) and the 95% confidence interval from 12.8 to 16.4. The reduction of total score was statistically highly significant ($P<0.001$). The impact by age group, gender and grade of deformity is computed and the implications of the findings discussed. **Conclusion:** Properly designed and implemented CBR programs can make a significant impact on reducing discrimination and social participation restrictions as well as increasing the quality of life of leprosy affected persons.

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**Salvage Surgery for Severely Deformed Hands in Leprosy**

A Salafia and G Chathran  
Vimala Dermatological Centre, Mumbai, India

Mobile claw-hand and mobile opponents palsy are readily dealt with, by various techniques, by a number of surgeons; however severely deformed hands and metacarpal hands are, usually, left unattended. The reasons are many, one of which is the fact that most patients do not understand how to do and how useful, after surgery, will their hands be. We have operated 9 deformed hands with procedures like ‘Pollicization’ Gillies’ cocked-hat surgery, bone grafting and JESS distractors with the aim of giving a “functional hand” though not a beautiful one. The whole presentation will be illustrated with photos, pre & post and intraoperative. The results: quite satisfactory for the surgeon and the patients soon after surgery, but on a long follow-up, we have noted that two patients had had damaged theirs hands due to improper use and - most of all – to the fact that an “insensitive” hand is always prone to damage. Yet this does not discourage us from carrying on this type of surgery; however patients need counseling before surgery and after.

[149]
Correction of Muscular Wasting in the First Web

A Salafia and G Chauhan
Vimala Dermatological Centre, Mumbai, India

Many techniques have been described to restore the shape and bulky contour of the first web space, for cosmetic reasons. We have noted that the real defect lies with the first dorsal interosseous and the first lumbral; hence we have planned a new technique for this type of deformity. Operative procedure: Local anaesthesia – without adrenaline – is all that is needed; no tourniquet is required because the procedure is quite bloodless. A small incision is made along the radial aspect of the index just proximal to the head of the phalanx, care is taken for the incision to be more volar than dorsal. The incision goes down to the periostium; now, with the help of dissecting scissor, a tunnel is made along the phalanx; the tunnel should be more volar than radial. At this point a tube of medical-grade silicone is cut in the way illustrate in photo N., the length has to be tailor-made so as to fit the length of the index, however, for the majority of patients 5cm is good enough. Next, the tube is anchored to the periostium with one or two sutures of 04 mersilk. Closure is done in layers: the subcutaneous with prolene and the skin with any suitable material. Betadine ointment and soft dressing. The wound is inspected after two days for any reaction and the sutures are removed after 8-10 days.

"Plantar Skin Graft" – A simple Technique for Healing the Ulcers on the Sole of the Foot

Atul C Shah and Sagar Gundewar
Department of Plastic Surgery, J J Hospital, Mumbai 400 008, India
E-mail : olcp@vsnl.com

According to basic principles of plastic surgery lost tissues should be replaced by tissues of similar kind. Thus, best option for replacing glabrous non-hair bearing plantar skin would be plantar skin itself. The instep area provides the donor site without much morbidity. Two techniques are used for harvesting the skin graft. Plantar graft taken from instep as epidermis and dermis and plantar dermal graft taken after elevating the split graft as flap and taking the inner dermal layer as free donor graft. Reintroduced by the first author to large masses at the IAL in 2004, it was studied in detail in dissertation by the second author. In the small study of 15 cases, it was noticed that patients with ulcers were in age group 40-50 years. Males had higher incidence of plantar ulcers as compared to females. Good results were obtained in almost 93% of cases. Graft take was more than 80% in these cases. Healing was eventual outcome in majority of cases. The average duration for healing of ulcer was 2-3 weeks. Some cases were carried out in the camps held under the auspice of NCLCA. At follow up of this camp reasonably good outcome was noticed. The graft showed good color and texture match and minimal donor site morbidity. Plantar skin graft is a viable procedure even if it acts as biological dressing given the fact that majority of plantar ulcer cases are neglected in the rural areas. The technique has the potential to be carried out at community health center level where surgical operations are carried out.

Role of Anterior Ulnar Nerve Transposition in Acute Ulnar Neuritis - Indications, Surgical Techniques and Results - A Preliminary Report

CS Robertson and JR Shalini
Leprosy Mission Hospital, Shadhara Nand Nagri, Delhi, India
E-mail : ttmshahdara@ttmindia.org

20 ulnar nerve, hemic circumferential neurolysis and anterior sub-cutaneous sub facial sling transpositions were done for acute ulnar neuritis with or without neurological deficit. They all presented with severe pain restricting activity with that particular limb and with tender flexion angles of more than 100 degrees. All the patients had instant pain relief and the flexion of elbow became pain free post operatively. It is a simple surgery under local anesthesia and all the patients were given 1 week of low dose steroids instead of a 12-week steroid regime. The results of nerve function recovery seen with anterior transposition of the ulnar nerve are comparable with the 12-20 week regime of steroid therapy without any steroid related problems such as steroid dependency, osteoporosis or Cushingoid features. How ever it requires some amount of surgical skill and has associated surgical complications. Key words: ulnar nerve, acute ulnar neuritis, anterior transposition.
Factors Affecting outcome of Surgical Correction of Claw Hand in Leprosy

Mannam Ebenezer, Kishan Rao and S Partheebaran
Schieldelin Institute of Health Research and Leprosy Centre, Karigiri 632 106, India

Introduction: The purpose of the study is to study the factors that will influence the surgical correction of claw hand in leprosy. Methodology: All patients who underwent claw hand correction over the period 2002 - 2005 were selected for the study. Charts were retrospectively analyzed and patients were called for assessment according to Brand’s evaluation criteria and also assessment of patient satisfaction. 110 patients were included in the study. Results and Conclusions: According to Brand’s criteria, 76.6% had excellent or good results, 26% had fair results and 3.3% had poor results. As far as patient satisfaction is concerned 80% were fully satisfied or satisfied, 17% were partially satisfied and 3% not satisfied. Age, duration of pre operative physiotherapy, degree of joint contracture and long flexor tightness had a statistically significant influence on the outcome of surgery. Keywords: Surgical correction, claw hand, Outcome.

Effect of Microcellular Rubber on Pressure Distribution Under the Walking Foot

Mannam Ebenezer, S Karat, Z Solo, T O’ Shea and S Behura
Schieldelin Institute of Health Research and Leprosy Centre, Karigiri, India

Introduction: The objective of the study is to measure the effect of different Shores (softness) of 12 mm Microcellular rubber in reducing peak pressures at vulnerable areas under the foot. Methodology: Plantar pressure measurements can be measured using various techniques with a mat with pressure sensors placed on the insole and then making the subject to walk. Tekscan is one such machine which when calibrated is accurate and records even minor differences in pressure reduction. The pressures were measured in shoe with and without the MCR insole inserts with the subjects walking. The shores of MCR tested were 10, 15 and 20 degrees. A total of ten subjects were used. Plantar pressures from five normal persons and five leprosy patients with anesthetic feet were measured. Results and Conclusions: The results showed that 10 to 15 degree shores to be optimum and 20 degree MCR was not effective in reducing peak pressures.

Rehabilitation Awareness and Needs in Patients with Disability Due to Leprosy

Yan Liangbin, Zhang Guo-cheng and A Piefer
National Center for Leprosy Control, China CDC (NCLC) 12, JiangWangMiao Street, Nanjing (210042), Jiangsu Province, P. R. China
E-mail: ctabj@vip.163.com

Objective: To determine the rehabilitation awareness and needs in patients with disability due to leprosy. Methods: 4353 patients in 23 fields of 7 provinces were surveyed by interview and questionnaire. Results: 80% of patients knew general knowledge of disability prevention and rehabilitation, and believed that the self-care could prevent disability; but they seldom carried out the daily self-care practice. 90% of patients lacked awareness in early manifestation of leprosy, treatment of the disease, basic cause of disability, and the way to prevent such as plantar ulcers. For needs of rehabilitation education, teaching by medical staff (86%), booklet (81%), video tape (70%) and recording (52%) had been selected. Conclusion: The awareness of rehabilitation and the practice must be combined together. Rehabilitation education should be carried out in advance systemically through different ways. Keywords: leprosy disability; rehabilitation awareness; rehabilitation need.
Three-Year Results of Self-Care in 6442 Persons with Disability in Leprosy

Yan Liang-bin, Zhang Guo-cheng and A Piefer
National Center for Leprosy Control, China CDC (NCLC) 12, JiangWangMiao Street, Nanjing (210042), Jiangsu Province, P.R. China
E-mail: clat@vip.163.com

Objective: To explore the effectiveness of self-care in persons with disability in leprosy. Methods: Self-care training was provided to 6442 cases of persons with disability through medical staff, followed by daily self-care by the patients themselves. The results were then followed up continuously for 3 years by medical staff. Results: 72.52% (4672/6442) cases sustain daily self-care. Redness of eyes reduced 76.82% (327/1411), cracks in hands and feet decreased 93.61% (130/2035) and 90.68% (180/1932) respectively. Plantar ulcers reduced 48.34% (1262/2443). There were no significant increase of bone loss in hands and feet. Conclusion: Daily self-care reduce the disabilities in hands, feet and eyes in persons affected by leprosy, and may also prevent secondary impairment or prevent deterioration of the disabilities. Keywords: disability; self-care; leprosy.

Nerve Damage of the Upper Extremity in Persons Affected by Leprosy

Yan Liang-bin, Zhang Guo-cheng and LI Wen-zhong
National Center for Leprosy Control, China CDC (NCLC) 12, JiangWangMiao Street, Nanjing (210042), Jiangsu Province, P.R. China
E-mail: clat@vip.163.com

Objective: To determine the situation of nerve damage of the upper extremity in persons affected by leprosy. Methods: Active or cured cases of leprosy in 11 counties of Jiangsu province were investigated. Results: 39.86% (5676/14240) cases were found with nerve damages in the upper extremity, with 28.58% (4070) unilateral and 11.28% (1606) bilateral. Nerve damage was more common in active and relapse cases (53.89%), in multi-bacillary cases (65.02%), and in persons had leprosy reaction (78.25%). 35.89% (5111) persons were found with Ulnar nerve damage, 15.52% (2210) with medium nerve damage, and 3.31% (428) with radial nerve damage. Protective sensation was lost in 64.31% (3650/5676) of hands and joint stiffness in 60.65% (3100/5111). 36% (2607/7282) persons have surgical indication, but of them less than 20% (520) willing surgical treatment. Conclusion: Incidence of nerve damage of the upper extremity in leprosy correlates with delayed diagnosis, type of the disease, and the reaction. Ulnar nerve is mostly involved, and often unilateral. 60% of the disability of the hands lost the opportunity for surgical correction, and 80% persons have no confidence in rehabilitation of the hand. Self-care training and functional exercise is need for them. Keywords: leprosy; nerve damage; upper extremity.

Long-Term Results of Posterior Tibialis Muscle Transfer for Foot-Drop in Leprosy

Yan Liang-bin, Zhang Guo-cheng, ZHENG Tie-heng
National Center for Leprosy Control, China CDC (NCLC) 12, JiangWangMiao Street, Nanjing (210042), Jiangsu Province, P.R. China
E-mail: clat@vip.163.com

Objective: To determine the long-term results of the posterior tibialis transfer in the treatment of foot-drop in leprosy. Methods: The patients who received the posterior tibialis transfer operation during 1985 and 1996 were followed-up in the past three years. Walking gait, active dorsiflexion and plantar flexion of the ankle joint, deformities or ulceration of the feet, and patient's satisfaction were recorded. Results: Of the 80 cases (82 feet) followed-up, excellent results were obtained in 51 feet, good in 17 feet, fair in 12 feet, and poor in 2 feet. Among 37 feet, which had interosseous transfer, excellent-or-good results were obtained in 31 feet, while 2 tendons avulsed postoperatively. Among 45 feet, which had circumtibial transfer, excellent-or-good result was obtained in 37 feet, while 3 developed new inversion, 2 toe-drops, 2 tendon adhesion subcutaneously, 3 with ulceration, and 3 had recurrent inversion. There was no significant difference in the excellent-or-good results between the groups of interosseous transfer and circumtibial transfer, and whether the transferred tendon attaching to bone or tendon (P > 0.05). Conclusion: Posterior tibialis transfer with elongation of Achilles tendon gives excellent or good results in foot-drop due to leprosy. The route and attachment point of the transferred tendon should be selected based on whether the foot complicated by inversion, toe-drop, or osteoporosis, and also the interosseous space size. Physical exercises are emphasized to carry out pre- and postoperatively. Keywords: foot-drop; posterior tibialis muscle transfer; leprosy.
Practice and Thought About Rehabilitation Based on Community on the Disabled Affected by Leprosy

Zhang Lianhua, Xu Weiguo, Wang Hongjun and Lu Zezhong
Jiangsu Provincial Center for Disease Prevention & Control, Nanjing 210009, the P. R. of China
E-mail: clabj@vip.163.com

Objectives: To explore experiences of Rehabilitation Based on Community (RBC) on the Disabled Affected by Leprosy (DAL) and to provide the evidence for solving sharp problems appeared form imbalance development of leprosy rehabilitation between Leprosy Village and Common Communitly. Methods: To select 2 towns with more DALs to be pilot areas to set up a Station for RBC in township hospital respectively. Under the leadership of governments on loacal county and township levels, to use the health resources of township hospital to free offer DALs with recovery service periodically. Certainly, the DALs are willing to participate the program, the township hospital and doctor offered service should be paid by local coutry health bureau. Results: The Station for RBC have run in right path and its range of service expanded around the the 2 towns. Most part of DALs have cured or distinctly improved their exposure conjunctivitis, cracks of in numb hands and feet, foot ulcers. The style of the the Station for RBC have been accepted by local people and DALs. Finally, the township hospital and doctor offered service also earned from the Station for RBC service. Conclusions: RBC should be the most important part of leprosy rehabilitation. The general health services offer the rehabilitation of leprosy work is feasible, which only need pay a little. It also reflects and deepens the strategy advocated by WHO on the sustainability of Leprosy Control Program. Key words: Leprosy The disable Rehabilitation Based on Community.

Microfasciculation: a Peculiar Nerve Response in Leprosy Nerve Damage

SL Antunes Sérgio, Lucinéia Alves, Mildred Medeiros, Suzana Corte-Real, Maria Cristina Vidal Pessolani, Márcia Jardim Rodrigues and José Augusto da Costa Nery
Oswaldo Cruz Foundation / Leprosy Laboratory, Av. Brasil 4365, Manguinhos 21040-900 – Rio de Janeiro – RJ - BRAZIL
E-mail: santunes@ioc.fiocruz.br

Microfasciculation, a perineurial response found in neuropathies was studied in 240 nerve biopsies [118 pure neural leprosy (PNL), 31 reational leprosy neuritis (RN), and 91 non-leprosy neuropathies (NLN)]. Live M. leprae-induced desert hedgehog factor (a cytokine involved in nerve fascicle assembly) expression in human Schwann cells (SC) was also investigated. Microfasciculation was found in 18 nerve biopsies (12PNL, 6RN) but not in the NLN group. This finding was strongly associated with perineural damage and with the neuritic process. S100 protein immunoreactivity, neurofilament, nerve growth receptor, and myelin basic protein immunoreactivity were found within the microfascicles. Transmission electron microscopy of three biopsies showed that surrounding fibroblast-perineurial cells were devoid of basement membrane despite NGFR positivity at immunohistochemistry. Dhh expression by human SCs in vitro was downregulated by M. leprae. Perineural damage and downregulation of the desert hedgehog factor may be implicated in the genesis of this reactive lesion pattern. Key word: microfasciculation, leprosy neuropathy.