From 1983 through 1988, 657 MB patients clinically cured with DDS monotherapy together with BI of 2 or more at any site smeared previously were re-treated with RFP, Bo63 and DDS in combination. Four hundred and eighty seven of them were males and 170 were females. Their age ranged from 17 to 70 years and their disease duration ranged from 1 month to 39 years. Cured individuals not re-treated were used as control for this trail.

All patients were administered RFP and Bo63 1 200 mg each once monthly with supervision and DDS 100 mg daily self-administered. This treatment was continued for 12 months and was completed within a period of 15 months. Six hundred and twenty cases (94.37%) of them completed regularly the prescribed course but 37 did not due to the occurrence of side effects or complications. Exclusive of 2 who died and 1 migrated out of Shanghai after completion of re-treatment, the remaining 654 were followed up for a period of 7-12 years (494 cases for more than 12 years) and the total follow up period was 8 926 person years, no relapses occurred. But there were 23 identified as relapses among the 137 control individuals, giving an overall relapse rate of 16.79% and an average annual relapse rate of 1.29%. The authors suggested that for a more reliable conclusion, these cases should and will be followed up until 20 years after completion of re-treatment.

CLINICAL

CL01

MARKERS FOR REACTION

WR Faber, T vd Pool, PK Das.
Academic Medical Center, Amsterdam, The Netherlands.

Serum samples were taken before reaction, at reaction and during antireactional treatment in a prospective study.

The following markers were studied: TNFα, produced predominantly by macrophages (normal value < 40 pg/ml); IFNγ, produced by activated T cells (normal value < 15 pg/ml); neopterin, produced by macrophages activated by IFNγ (normal value < 10 nmol/ml) and soluble TNFα receptor (= sTNFαr normal value <1.5 ng/ml).

Four patients with reversal reaction (RR) and one patient with several episodes of ENL and one episode of neuritis were studied.

TNFα , IFNγ and neopterin were simultaneously increased in two and TNFα , IFNγ in the other two RR. Levels decreased or normalized during antireactional treatment with prednisone.

Only TNFα was increased at ENL on two occasions; on the third occasion i.e. an exacerbation of ENL during prednisone treatment given for a neuritis TNFα level was normal.

sTNFαr levels varied but were increased in nearly all samples.

In general, patients in reaction showed elevation of markers investigated. Laboratory markers may be helpful to support the diagnosis of reaction in leprosy patients.

CL02

NEUROLOGICAL ASSESSMENT OF A COHORT OF CHILDREN BORN TO MOTHERS WITH LEPROSY AND HEALTHY CONTROLS (A9 STUDY) - 1. CLINICAL AND CONVENTIONAL TESTS

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In a prospective (1975-1997) study (A9) of mothers with leprosy and healthy controls, and their children, 15/99 of children were found to have very early leprosy at puberty (1990). Despite MDT 13/15 showed new nerve damage (1993). In 1993, 40% of the A9 cohort who had easily palpable/slightly enlarged nerves without suspicious skin lesion showed early neurodysfunction. The aim of this study was to investigate if early nerve enlargement was a prodromal sign of leprosy.

Subjects: A9 cohort children: 85 (51 females and 34 males); distribution according to leprosy status of the mother multibacillary leprosy (MBK:47), paucibacillary leprosy (PBK:22) and non-leprosy (NLK:16). [K=kids!]. Control group: no known family or household leprosy contact (NKLCK:18).

Nerve enlargement: The A9 cohort had 45% with early/definite nerve enlargement (MBK 55%, PBK 36%, NLK 54%) compared with 25% NKLCK. Male:female ratio for nerve enlargement was 25:17, except in MBK (11:12). The ulnar nerve was the most frequently enlarged.

Sensory and motor nerve impairment (graded sensory testing (STG) and voluntary muscle testing (VMT)): A9 cohort had i) 32% sensory nerve impairment (MBK 40%, PBK 29%, NLK 14%) compared with NKLCK 13%, and ii) 12% motor nerve impairment (MBK 12%, PBK 14%, NLK 7%) compared with NKLCK 7%.

Nerve Conduction Velocity: measurements in 30 children who had evidence of neurodysfunction were all within limits of normal for the reference laboratory.

CL03

NEUROLOGICAL ASSESSMENT OF A COHORT OF CHILDREN BORN TO MOTHERS WITH LEPROSY AND HEALTHY CONTROLS (A9 STUDY) - 2. TESTS OF SMALL NERVE DYSFUNCTION

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The aim of this study was to see whether neurodysfunction could be detected before irreversible nerve damage had occurred in the A9 cohort and healthy controls. The Thermal Threshold Tester (Triple-T: Medelec Ltd (see poster)) detects small nerve dysfunction in thinly myelinated A (cold) and unmyelinated C (heat) fibres. The Laser Doppler blood flow meter (MicroFlo DSP: Oxford Optronix (see poster)) assesses function in autonomic (vasomotor) unmyelinated C fibres by recording skin blood flow response to inspiratory gasp (LD-IG) and cold challenge (LD-CC) in tips of index and fifth fingers.

Triple-T: The A9 group had significantly increased hot and cold thermal thresholds (MBK 70%, PBK 70%, NLK 75%) indicating small fibre damage compared with NKLCK (18%).

LD-IG and LD-CC: LD-IG showed abnormal traces with established and subclinical nerve damage. The fall from resting blood flow (baseline) to the lowest point of the curve in response to LD-IG and LD-CC is expressed as % of the baseline. The mean LD-IG and LD-CC % fall in index and fifth fingers showed no differences between A9 and control groups. The percentage of children having i) abnormal LD-IG were MBK 22%, PBK 19%, NLK 17%, NKLCK 37%; ii) abnormal LD-CC were MBK 38%, PBK 33%, NLK 36%, NKLCK 33%.

CL04

ASSESSMENT OF THE A9 STUDY NERVE FUNCTION TESTS, HYPOTHESIS AND APPLICATIONS FOR LEPROSY ERADICATION

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The prospective (1975-1997) study (A9) of mothers with leprosy and healthy controls, and their children, showed 15/99 of children with very early leprosy at puberty (1990). Despite MDT 13/15 showed new nerve damage (1993), while 40% of the A9 cohort with easily palpable/slightly enlarged nerves without suspicious skin lesion showed early neurodysfunction. In 1997 70% of the cohort had abnormal thermal thresholds, 32% had sensory impairment and 12% motor impairment. These findings from a well documented cohort are indicative of a significant level of as yet undiagnosed subclinical leprosy among teenagers and young adults in the "leprosy villages", potentially explosive and crippling in the event of widespread immunosuppression.

Hypothesis: Abnormal thermal thresholds, an effective measure of early small nerve fibre damage, are the first evidence of subclinical leprosy (which at present is not treated).

Application: Thermal Threshold Tester is simple to use, with high specificity and sensitivity. There is a strong case for using the A9 cohort with numbers augmented from surrounding villages, to carry out a controlled drug trial with appropriate MDT against placebos in both affected and unaffected populations to see whether treatment i) restores thermal thresholds to normal, and ii) prevents development of new cases and especially the nerve damage which causes disfiguration.

CL05

FACIAL "BURNING SENSATION" IN MIDDLE-AGED FEMALE LEPROSY PATIENTS - A DIAGNOSTIC BLIND SPOT.

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Facial skin is so richly supplied with sensory nerves, chiefly Vth [Trigeminal]nerve, that even new active tuberculoid lesions may lack sensory loss. Three leprosy textbooks omit Vth nerve sensory loss, except conjunctival. For most leprologists this nerve escapes attention.

We report six women (5BL,1BT/BL) from the A9 Study who presented with facial burning or pain, duration two weeks - two years. Three diagnosed "menopausal/ neurotic" received valium without relief. "Burning sensation in the face" in middle-aged women falls on unsympathetic ears as "menopausal". Graded sensory testing (STG) revealed sensory loss of 300g in three and 50g in three. All six women had evidence of neuritis elsewhere and were treated as relapse / reaction with MDT and steroids: on follow-up, one had recovery to 50mg and a second to 4g facial STG.

Nine other self-referring A9 women (7BL, 1BT, 1LL) were similarly assessed: 5 had faces fully sensitive to 50mg filament (1BT c/o "facial burning " but had generalised post-partum reaction); 3BL had 2 or 3 points sensitive to 200mg and felt 50mg elsewhere - two had new eye problems and one generalised neuritis; 1LL, long-standing burned-out case felt 200mg all over her face.

Conclusion: Facial burning sensation requires urgent investigation with STG especially in "menopausal" women.

CL06

MARTIN-GRUBER ANASTOMOSIS: ANATOMIC AND ELECTRO-PHYSIOLOGIC STUDIES.

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"Lauro de Souza Lima", Reserch Institute, Bauru-SP, Brasil

Forty forearm of human cadavers were dissected and studied. In 12,5% (5 cases) were found to have a MARTIN-GRUBER anastomosis (MG.A), two on the right side and three on the left side. From the total of five cases, two of this anastomosis occurred among the branches reserved to the flexor digitorum profundus muscle, one from the branch of the anterior interosseous nerve, and two directed from the median to the ulnar nerve.

Regarding to the electrophysiological study, 128 forearms of normal adults were studied and 20 (15,6%) showed evidences of MG.A. From this 20 forearms of 15 subjects, 5 (33,3%) presented bilateral MG.A and 10 (67,7%), unilateral.

In this study, the MG.A was found in agreement with the percentagens of the literature.

CL07

THE INFLUENCE OF HIV-1 INFECTION ON LEPROSY PATIENTS TREATED WITH MULTIDRUG THERAPY (MDT) IN WESTERN KENYA

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An evaluation was done among 19 HIV positive and a similar number HIV negative leprosy patients who were put on MDT between 1989 - 1992, to determine the influence of HIV-1 infection on physical status, clinical status of the lesions, complications, occurrence/presence of reactions, occurrence of relapse and progression to ARC/AIDS and/or death. At the time of evaluation, it was found that 8/19 (42%) of HIV positive cases had died of AIDS related causes while one control 1/19 died of breast cancer. On the clinical status, 2/19 (10%) of the cases were reported to have reactivated and 2/19 of the controls had signs of reactivation. The development of deformities was not much different between cases 2/19 (10%) and controls 3/19 (15%). At least 2/19 (10%) of the cases were found to have developed ARC. It is therefore apparent from this study that 5 years after stopping MDT, most HIV positive cases do succumb to death. However, the effect of treatment with MDT in terms of regression of the lesions appears to be similar for both HIV positive leprosy cases as well as HIV -ve leprosy cases.

CL08

BACTERIOLOGICAL POSITIVITY OF PATIENTS IN COMMUNITY OVER A PERIOD OF 13 YEARS

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Newly recorded patients with Positivity for AFB (Myco Leprae) at The Leprosy Mission Control area, Vizianagaram, Andhra Pradesh, South India are under study for 13 years of Multi Drug Therapy (MDT) implementation from 1984-1996.

The present retrograde study deals with newly recorded 367 LL & BL patients with Positive Bacteriological Index for AFB among the total newly recorded patients of 4563 giving 8.04%.

The Bacteriological Positivity of patients is analysed year wise and also population wise at Risk. The study showed that there is reduction of infective patients every year during Multi Drug Therapy implementation minimising the risk to the Community under study.

CL09

Sensory & Motor Function Follow up of Hands of MB Patients under MDT

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The sensations and motor functions in hands of 52 MB pts. registered at the hosp. were examined with Nylon Monofilaments with graded diameters and by standard motor power testing method respectively.The results of examination done initially and after every three months were expressed in numerical scores. Out of 52 MB cases, 26(50%) were +ve.

Pre-MDT analysis showed, normal sensory scores(scores=45) in 8(15%) pts, while 24 (46%) had bilateral and 20(39%) had unilateral sensory loss.Amongst those with sensory loss, 22(50%) had slight loss(scores > 35) while only 7(16%) had gross sensory loss (scores < 10). The follow up showed higher %-age of improvement in sensory scores among the pts. treated with corticosteroides during 2 yrs period of MDT.

Pre-MDT motor function testing showed 37 (73%) pts with normal motor functions(scores=28). Out of 15 MB pts. with grade II deformity, 13(90%) were smear negative.Follow up of motor function scores did not show worsening in any of the patients.

The simple method of quantifying sensations using Nylon Monofilaments and motor functions by standard methods are useful even in the field conditions.

CL10

RETROSPECTIVE ANALYSIS OF 194 LEPROSY CASES IN YEMEN

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In Arabian Peninsula, leprosy is considered more as a social problem connected with strange imaginary stories. According to WHO reports, Yemen is considered as the mostly affected area in the Middle East.

To obtain a general idea about the social aspect and epidemiological and clinical pattern of the disease in the country, the files of 194 leprosy patients registered for MDT during 1993 will be analysed with a leprosy profile and community beliefs in Yemen.

CL11

DENTAL PROBLEMS OF LEPROSY PATIENTS IN BANGLADESH

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Leprosy patients in Bangladesh are not spared the usual dental problems in developing countries. This study is an attempt to further delineate the various dental problems and their prevalence among the leprosy patients in Gaibandha and Jaypurhat. These two districts, located in the Rajshahi division of the country, have a combined population of 3 million. The study consists of a survey of the patients attending the leprosy clinics of the Gaibandha-Jaypurhat Leprosy Control Project. Patients are categorized with regards to their sex, marital status, PB/MB status, disability grade (and which particular organ is involved), and their particular dental problems: dental caries, periodontitis, pyorrhea, gingivitis, etc. Other oral problems like candidiasis, oral cancer, osteomyelitis, etc. are also noted. Particular relationships to common habits like brushing teeth with neem twigs, chewing of betel nut and supari (local food items), oral hygiene, etc. are identified. Comparisons are made with a control group of general patients seeking treatment at the Dental Clinic in the Bogra Mission Hospital. The incorporation of basic dental health education materials into the conventional messages of leprosy workers is explored.

CL12

INCIDENCE OF NEURITIS AMONG PAUCIBACILARY LEPROSY PATIENTS DURING TREATMENT AND SURVEILANCE

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180 Paucibacilary leprosy patients who did not have deformity or neuritis at the time of diagnosis were followed up during the treatment period and two years of sarveillance to detect neuritis. These patients were given PB/MDT for 6 months and some patients were continued upto 12 months on treatment if they had signs of activity. Neuritis is defined astrain and/or tenderness of a nerve trunk and/or sensory impairment.

Out of 180 patients only 2 patients(1.1%) developed neuritis. In both cases MDT has continued for 12 months. In the case of the female patient the neuritis developed after she became pregnant.

This study shows incidence of neuritis during and after PB/MDT treatment, irrespective of 6 months treatment, is low.

CL13

A CASE OF PHIMOSIS DUE TO BORDERLINE TUBERCULOID LEPROSY.

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A case of borderline tuberculoid leprosy of 2 years duration in a 22-year-old male is reported. The patient developed exacerbation of the lesions and inability to retract the prepuce for one month. On examination, he had anaesthetic/hypoaesthetic erythematous plaques on different areas (about 10 lesions), and also one anaesthetic plaque on the penis, causing phimosis. Skin biopsies were performed from 3 different skin lesions, and circumcision was also carried out. The skin biopsies showed florid tuberculoid granulomas. The excision biopsy of the prepuce showed granulomatous and round cell infiltrate almost replacing the dermis. The nerves were infiltrated or surrounded by infiltrate. The patient received multidrug therapy, including daily rifampicin, and the plaques gradually flattened. Repeat biopsies done one year later from 2 subsided skin lesions showed only mild to moderate periappendageal round cell infiltrate. One large, unrecognizable nerve was seen infiltrated with epitheloid cells and round cells. Sequential clinical photographs during treatment will be shown, and also pre and post-treatment photomicrographs of this patient.

CL14

A PROPOS D'UN CAS DE LEPRE LEPROMATEUSE MASQUEE

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Service de Dermatologie C.H.U. Hédi Chaker TUNISIE.

Introduction : La lèpre est une maladie infectieuse chronique à expression cutanée et neurologique. Elle peut aussi se révéler par des manifestations Ogénéra.es et viscérales isolées. Le diagnostic de lèpre est rendu difficile par la diversité et parfois l'atypie des lésions cutanées ou par une présentation inaugurale extra-cutanée. Nous rapportons un cas de lèpre lépromateuse ayant donné lieu à un erreur de diagnostic.

Observation : Mme M.A., âgée de 29 ans, suivie depuis 1994 pour une polyarthrite évoluant dans un contexte fébrile, un nez tuméfié chaud douloureux et une inflammation des pavillons des oreilles. Sur le plan biologique existait un syndrome inflammatoire. Le bilan immunologique était négatif. La biopsie de la cloison nasale montrait des signes de périchondrite. Le diagnostic de polychondrite chronique atrophiante (PCA) était retenu. Une corticothérapie à une dose d'attaque de 1 mg/k/j puis d'entretien de 10 mg/j avait entraîné la disparition des signes sans nouvelle poussée. deux ans après, elle a été rehospitalisée pour une fièvre avec épistaxis spontanés et polyarthrites. L'examen cutané montrait une raréfaction des sourcils, des lésions nodulaires érythémateuses et infiltrées siégeant au visage, aux lobules des oreilles et aux faces antérieures des jambes. Ces lésions étaient asymptomatiques. L'examen neurologique montrait une hypoesthésie dans le territoire du nerf sciatique poplité externe. La biopsie d'un nodule montrait de nombreuses cellules de Virchow avec des bacilles de Hansen (BH) en globi. Un traitement spécifique anti-lépreux a entraîné une régression des lésions.

Commentaires : Le diagnostic de la lepre est difficile dans les pays à faible endémicité lépreuse. Notre observation illustre la confusion d'une LLp avec la PCA. La PCA associe une chondrite de l'oreille externe, du nez et laryngo-trachéale et parfois des polyarthrites et des lésions cutanées à type d'érythème noueux et plus rarement à type d'aphtose buccale ou génitale, de phlébite superficielle, de pseudofolliculite, de livédo, de purpura, d'hyperpigmentation, etc. mais jamais de nodules cutanés ou sous cutanés (lépromes) comme la LLp, la chondrite dans ce cas correspondrait soit à une réaction inflammatoire de contiguité soit accompagne les manifestations inflammatoires articulaires. Les corticoïdes prescrits avaient agir sur les phénomènes inflammatoire, auriculaire et articulaire expliquant les rémissions transitoires, et ce n'est qu'après 2 ans d'évoluation avec l'apparition de signes plus spécifiques (chute des sourcils, lépromes de la face des lobules des oreilles et des extrémités) que le diagnostic de LLp était suspecté puis confirmé par l'examen histologique et bactériologique.

CL15

ABSTRACT PUPIL CYCLE TIME AND AUTONOMIC DYSFUNCTION IN LEPROSY

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Pupil cycle time (PCT) was measured in 81 subjects (162 eyes), all under 45 years of age, to evaluate the autonomic innervation of the iris. This study included 9 tuberculoid (TT), 19 borderline tuberculoid (BT), 9 borderline borderline (BB), 10 borderline lepromatous (BL) and 16 lepromatous (LL) leprosy patients without any intraocular involvement undergoing multidrug therapy and 18 healthy volunteers. Mean PCT was prolonged in BB, BL and LL patients when compared with mean PCT of healthy volunteers and the difference was statistically significant ($p<0.05$). Some others functions of the autonomic nervous system were tested (blood pressure and pulse response to standing, body temperature, lacrimal and pupillary responses) and symptomatic involvement was also reported.

CL16

AN INVESTIGATION ON OCULAR LEPROSY IN 1,897 PATIENTS

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The results of an investigation on ocular leprosy in 1,897 patients showed that

- the ocular morbidity from leprosy was associated with the course of disease, occurrence and management of leprosy reactions, self-care status of patients etc.
- ocular complications caused blindness in 11.38% of the patients with ocular problems;
- corneal involvement and iridocyclitis were found to be the main causes of the incidence of blindness and reduced or absent corneal sensation, lagophthalmos and ectropion were found to be main conditions causing corneal changes in ocular leprosy; and
- leprosy reactions played a key role in the occurrence of iridocyclitis.

In order to reduce ocular complications from leprosy, the authors suggested that the patients should be detected as early as possible, leprosy reactions should be timely managed, self care training should be given to patients and one of their family members at least and surgical corrections should be provided for those with paralytics lagophthalmos and ectropion if necessary.

CL17

13 YEARS OF LONGITUDINAL FOLLOW_UP STUDY OF EYES IN LEPROSY.

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Regular eye examinations are conducted. MDT was started in late 1982. 5,513 patients were registered for MDT (MB 3,309 PB 2,204) and 3 041 completed treatment (MB 1,868 PB 1 173). The rest were referred to various control units. These records were verified and 1,457 patients were examined and 217 MB patients were followed up for 3 to 14 years. Routine screening was done once in 6 months with Slit Lamp. Observations were recorded and analysed.

Eye complication did not occur in non Lepromatous patients except for lagophthalmos. Eye complications in Lepromatous with short duration of diesease were fleeting in nature and minimal, subsided within six months of MDT and did not recur again.

Eye complications like Iritis/Scleritis in Lepromatous of long duration lasted for 6 Years and lead to blindness in a few with severe pre-existing lesions. Inspite of regular MDT eye complications appeared even after 1 to 2 years of MDT to persist for many years. During the past 7 years eye complications were not seen among new cases except for lagophthalmos and steroid induced cataract leading to blindness in some. An occasional iritis/Scleritis was seen in Mono Relased patient. Early detection of leprosy is very important in preventing eye complication. Judicious use of steroid will minimise steroid induced eye complication like cataract. Treated patients will require surgery for cataract. lagophthalmos and general ophthalmic care should be a part of the care-after-cure package.

CL18

AN EPIDEMIOLOGICAL SURVEY OF EYE BLINDNESS AND LOW VISION IN 1045 LEPROSY PATIENTS

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In order to find out the prevalence, the causes as well as the distributions of blindness and low vision in leprosy, an epidemiological survey of blindness and low vision caused by leprosy among 1045 cases of leprosy was carried out in Taixing City, Jiangsu. The result showed that the prevalence of bilateral blindness was 7.76%, unilateral blindness 1.1%; bilateral low vision of various degrees 9.28%, unilateral low vision 5.84%. The prevalence of eye complications in different groups of patients was quite different. it was higher in females than in males, multibacillary patients higher than paucibacillary patients, in—patients higher than out—patients. Corneal disease was the commonest cause of blindness in this group, to the second was iritic disease and cataract. The main cause of low vision was cataract then corneal and iritic diseases. Treatable blindness accounted for 42.7% and treatable low vision 33.9% of the patients studied. 56.62% of cases with eye complications expressed their willingness to be treated. therefore, prevention and treatment of low vision and blindness are very hard.

CL19

LONGITUDINAL STUDY OF OCULAR COMPLICATIONS IN MB LEPROSY PATIENTS UNDER WHO-MDT

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The objective of this study is to determine the incidence of eye complications in MB patients during and after completion of WHO-MDT.

300 newly diagnosed MB patients were recruited and followed up at the Cebu Skin Clinic, Cebu, Philippines. Regular clinical, bacteriological and eye examinations were done before, during and after treatment. The study is now in progress for 9 years.

One BL patient developed lagophthalmos before MDT and did not improve on treatment. Two BL patients developed lagophthalmos during treatment, 1 completely recovered but the other only partially. 98 % of the patients showed normal pupil cycle time while 0.7% were lower and 1.3% in the higher ranges. Clofazimine deposits appeared about 6 months of treatment and disappeared about 12 months after treatment was stopped. Surprisingly, 61% of the patients showed no clofazimine deposits, 29% had deposits on the limbus only and 10% had deposits on the limbus and other areas of the eye. Corneal beading affected 5% of patients but disappeared 12 months on treatment. In addition, 2% of patients had hypovitaminosis A. Pterygium was found in 6% of patients. No increase in intra-ocular pressure was noted.

The clinical characteristics of the patients in the study, their demographic aspects and possible risk factors associated with the development of ocular complications will be discussed.

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CL20

DRY EYE IN LEPROSY

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In ten of Guangdong Province's leprosy villages, over an 18 months period, 845 cured cases of leprosy with clinical symptoms of lacrimal deficiency were tested by using Schirmir test on all, while 80 were examined with slit-lamp. Forty percent had <10 mm tears and BVT<10'.

Findings suggest that a high incidence of dry eye maybe caused by leprae drugs which restricts and damages lacrimal glands function, VII nerve damage affects secretion, damaged conjunctiva destroys conjunctival goblet cells, Vitamin A deficiency and presence of eye lid deformity effects tear film. Because of drying of the corneal epithelium, visual acuity is diminished and resistance of the cornea to withstand mild impact and infection occur.

Based on findings of dry eye in Guangdong, use of protective eye devices, tear substitutes, long term use of Vitamin A, and corrective surgery of eyelid deformity is recommended.

CL21

CORNEAL ULCERS IN LEPROSY

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Although corneal ulcer continues to be a serious ocular problem occurring in leprosy patients, it has not been studied extensively in leprosy.

In a retrospective study of 58 leprosy patients admitted with corneal ulcers at our hospital from 1990 to 1996, 11 patients (19%) had a history of injury immediately preceding the ulcer. 3 of them gave a definite history of rubbing the eyes and 5 gave history of injury with a vegetable matter. 25 patients (43%) had lagophthalmos and in those patients in whom corneal sensation was estimated 72% had decreased corneal sensation. In 5 patients there was blockage of the naso - lacrimal duct. The most common organism cultured from the ulcers was pneumococcus. No anaerobic organisms were cultured. Mycotic filaments were found in 5 ulcers. The majority of ulcers were located in the central cornea and in the inferior temporal quadrants. Vision improved after treatment in 2 patients, remained static in 35 and deteriorated in 21 patients.

The importance of identifying risk factors that can give rise to corneal ulcers, early recognition of ulcers and appropriate treatment to be given are discussed.

CL22

CHANGES IN THE MANIFESTATIONS OF LEPROMATOUS LEPROSY OBSERVATIONS OF A FIELD WORKER

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The changes in the manifestations of Lepromatous Leprosy over a period of 20 years, 1976 to 1996 is presented.

Leprosy has not only declined in numbers but also in the severity especially after the introduction of MDT.

Lepromatous Leprosy presented as Nodular, diffuse infiltration (Polar varieties) and also as large symmetrical patches (sub-polarforms) during the monotherapy days. With the introduction of MDT in 1983, we have noted the changes from multiple nodules to few nodules and then to single nodule and no nodule. Diffuse infiltration all over the body to symmetrical patches then to localised infiltration.

With early case detections, more and more single lesion cases are detected.

The case histories of 4 of our patients manifesting with single lesion which proved positive for skin smear are presented.

This paper intends to alert field workers regarding mono lesion cases that may be "Localised Lepromatous Leprosy".

CL23

ADRENAL FUNCTION IN MALE LEPROTICS

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The present work was dsigned for screening the hormonal profile of the suprarenal gland in leprosy, namely, cortisol, dehidrepiandrosterone- sulfate (DHEA-S) delta-4-andros-tenedione and testosterone. In addition, the concomitant clinico-endocrinological manifestations, if any, associating those of the disease were also studied. This was carried out by the recruitment of 60 male leprotics (21, paucibacillary and 39 multibacillary) and 16 healthy males as control group.

The values of cortisol in both paucibacillaty and multibacillary groups were insignificantly higher than that of controls and the value of paucibacillary group was insignificantly higher than that of multibacillary group. The values of DHEA-S in both paucubacillary and multibacillary groups were higher than that of the controls, with statistically significant difference with that of the paucibacillary grooup ($P<0.05$). No statistically significant difference between both paucibacillary and multibacillary groups.. The values of androstenedione in both paucibacillary and multibacillary groups were significantly higher than that of controls ($P<0.05$ and $P<0.01$, respectively). On the other hand, the value of paucibacillary group was significantly lower than that of the multibacillary group ($P<0.01$). The values of testosterone in both paucibacillary and multibacillary groups were significantly lower than that of controls ($P<0.001$ for both). On the other hand, the value of paucibacillary group was insignificantly higher than that of the multibacillary group.

The results of this screening study have provided an argument for further studies to be held for thorough investigation and assessment of the adrenal function in leprotics.

CL24

TESTICULAR FUNCTION IN PATIENTS WITH LEPROSY

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This study was carried out in order to identify and define abnormalities in the testicular function of chronic leprosy patients. Ten patients between 29 and 50 years of age with an established diagnosis of leprosy by the Ridley and Jopling criteria, and 20 male historical controls were included in the study. Full clinical andrological assessment, hormone profile investigations, and testicular ultrasound were carried out in patients and controls. Seven patients with leprosy presented with sexual dysfunction, abnormal testicular volume and/or gynecomastia. Baseline hormone levels of FSH and LH were significantly increased in all the leprosy patients. Moreover, 3 cases showed decreased testosterone levels, an abnormal E2/T relationship, and a low percentage in the testicular reserve test. A positive correlation among erection dysfunction, hypospermia, hypergonadotropism, and abnormal sperm concentration was found in 5 leprosy cases. One third of the cases with abnormal results presented with an established testicular

damage, and one third with variable degrees of abnormalities undergoing progression. Mild incipient damage was found in the remaining leprosy patients. The testicular ultrasound and the testicular reserve tests reported high sensitivity to disclose progression of functional damage. We suggest that hormone replacement therapy should be considered for selected cases with long term treated leprosy.

CL25

A STUDY OF MORPHOLOGICAL CHANGES IN ADULT LEPROSY PATIENTS.

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The association between different body builds and several diseases known to occur. However, no such study seems to exist to understand the morphological changes of leprosy patients despite having evident bony changes and deformities of body of leprosy patients. The present study is an attempt in this direction.

For this, 320 families(151 leprosy & 169 normal) belonging to poor SES have been studied from leprosy endemic area situated in south-east coastal part of India. The ages of leprosy in normal adults vary between 18-40 years. This age group has been selected purposely as changes due to senescence more or less static in this age group. The comparative morphological changes thus observed between leprosy afflicted and normal adults may probably be on account of leprosy only.

These morphological changes between these two groups will be measured through various body measurements such as, body weight, height,lengths, griths & breadths. These measurements are being taken using standard methodology and instruments. The various indices will be formulated to observe proportionate changes. The findings of this study will be discussed in detail.

CL26

EVALUATION OF FACIAL NERVE BY MAGNETIC RESONANCE IMAGING (MRI) IN LEPROSY PATIENTS.

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The facial or seventh cranial nerve is responsible for eye closure. In leprosy, the damage of facial nerve causes lagophthalmos, particularly affecting the lower lid. The MRI is a technique, which is able to identify the affected segment of facial nerve, especially the intratemporal canal tract. It has been used for analysis of this nerve lesion in Bell's palsy. The diagnosis of facial nerve lesion could help the patients to prevent ocular sequelae. In the future, the MRI could be an important method to detect an early lesion, indicating the segment to be submitted to a surgical decompression. The authors studied 8 patients (1 LL, 5 BL, 2BT) with and without leprosy reaction, one patient presented clinical signs of facial nerve lesion. By the MRI, we could observe some irregular thickness of facial nerve in different segments, particularly in the mastoid bone intracanalicular tract. The patient with lagophtalmos and reversal reaction presented a thick nerve and an enhancement of ganglionar segment after the paramagnetic contrast injection. The same aspect had been demonstrated in Bell's palsy. We conclude: 1) the etiopathogenesis of the contrast enhancement in the symptomatic acute facial palsy in leprosy could be due to a neuro-vascular mechanism as it had been described in Bell's palsy 2) the presence of the contrast enhancement is not a specific signal of acute lesion, but indicates the nerve lesion 3) MRI could detect early lesion in facial nerve in patients without clinical symptoms.

CL27

LIPID METABOLISM IN LEPROSY PATIENTS

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Blood levels of total lipids, cholesterol, triglycerides, and low density lipoprotein were studied in leprosy patients. The patient group for this study consisted of 40 treated leprosy patients classified as lepromatous (LL/BL) according to Ridley-Jopling scale, 22 males and 18 females between the ages of 55 and 65 years. The control group included 12 healthy endemic controls of identical age who had no contact with leprosy patients. Blood samples from patients and controls were taken in spring-summer season at strictly determined time intervals: 8:00 - 10:00 a.m. In lepromatous leprosy patients levels of total lipids, cholesterol and triglycerides were shown to approach those in healthy donors of identical ages, though to tend to decrease in active stages of the disease. At the same time in these patients low density lipoprotein level was significantly decreased as compared to controls. It was found out that patient's lymphocyte ability of spontaneous incorporation of ^{3}H-thymidine in vitro was inversely related to ratio of total blood cholesterol to triglycerides. This finding supports the view of Memon et al. (Int. J. Leprosy 1997; 65: 1-11) that certain factors of lipid metabolism may contribute much to leprosy pathogenesis. Besides, in patients with inactive lepromatous leprosy given DDS therapy blood levels of intermediate and final products of lipid peroxidation were estimated with using ultraviolet spectro-photometric methods. The results obtained showed that intensity of lipid peroxidation in the patients mentioned above was significantly decreased. This might be either the result of antioxidant effect of DDS or decreased contents of low density lipoproteins which are the most liable to oxidation among lipid-protein structures of blood. The possibility of interrelation between above factors cannot be ruled out.

CL28

INTRA-OPERATIVE ELECTRONEURODIAGNOSTICS TO DETECT THE MOST PROXIMAL LEPROUS NEUROPATHOLOGY IN SCIATIC NERVE

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Using intra-operative spinal root stimulation, the most proximal site of a leprosy induced neuropathology of the tibial nerve was found. Patients with leprosy affecting the posterior tibial nerve behind the medial malleolus causing significant anaesthesia of the foot were investigated by spinal root stimulation of mixed compound nerve action potentials (MCNAP) which were then recorded from the exposed tibial nerve. In nearly all cases the MCNAP amplitudes were reduced or disappear at or before the bifurcation of the sciatic nerve in the mid thigh. This was always the case even though the nerve macroscopically looked normal. Epineurotomy within these apparently unaffected segments revealed mild fibrosis of the intra fascicular epineurium in 9 of the 10 cases. There was macroscopic and histological evidence of discontinuity from distal to proximal (skip lesion), in that there was less fibrosis deep in the proximal calf. Evidence for such a proximal leprosy nerve lesion was corroborated by the finding of mild wasting of the proximal calf musculature, (Gastrocnemius and soleous), muscles not normally thought to be involved by leprosy nerve damage.

CL29

MANAGEMENT OF STEROID RESISTANT PATIENTS WITH SEVERE EPISODES OF PAINFUL ENL WITH REPEATED FRESH TRANSFUSION AND MINIMAL DOSE OF RIFAMYCIN AND CLOFAZIMINE.

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Recently we reported successful management of Mitsuda negative borderline and lepromatous leprosy patients with MDT plus active immunotherapy by low dose Convit vaccine. There was quick clinical cure, reversal reaction, early bacterial negativity and Mitsuda conversion. It is recognised that there are few leprosy patients with repeated episodes of ENL, who cannot be controlled by large doses of steroids. Here we report management of active BL/LL patients with steroid resistant severe repeated epidoses of ENL by rifamycin and clofazimine plus repeated transfusions of fresh blood (containing lymphocytes) (3-10 units) donated by healthy Missuda positive donors over a period of 3-10 weeks. We observed that this method of chemoimmunotherapy could reverse the downhill course of the disease, reduce the bacterial load and interrupt the painful episodes of ENL, which cannot be controlled by steroids and MDT.

CL30

RISK FACTORS FOR ERYTHEMA NODOSUM LEPROSUM IN LEPROMATOUS LEPROSY

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A retrospective study of a large cohort of previously untreated borderline lepromatous (BL) and lepromatous (LL) patients presenting at Anandaban Hospital between 1989 and 1996 was performed to measure the prevalence of erythema nodosum leprosum (ENL), the time of onset and the contribution of 9 clinical and laboratory factors to the risk of developing ENL.
A preliminary analysis showed a prevalence of ENL of 57/326 (17.5%) in new patients. ENL reactions occurred an average of 7 months after the commencement of MDT (range 0-27 months). Patients had an average of two episodes (range 1 to 9). LL patients had a significantly higher prevalence of ENL (29%) than BL patients (9%, $p<0.001$). Patients with diffuse skin infiltration (OR=5.0, $p<0.001$) Bacterial Index greater than 4+ (unadjusted OR=3.2, $p<0.01$), skin nodules (OR=2.6, $p<0.01$) or positive for IgM anti-PGL-1 antibodies (OR=2.0, $p<0.05$) were at increased risk of developing ENL. Age, sex, the number of body areas with disease, the morphological index and the number of patches were not significant risk factors. The identification of clinical features at presentation associated with high risks of developing ENL will be valuable in patient management and in minimising leprosy disability.

CL31

It is known that lesions in type I reaction may ulcer. However since times of Ryrie in Malasya, there are no studies about the occurence of this phenomenon in some leprosy cases. We will present 10 of such cases which were studied under clinical, bacteriological, histopathological and immunological aspects. Patients were submitted to a clinical I and of neurological examination and pictures were taken from their lesions. Smears for determination of BI and MI were taken from six sites and two biopsies were collected for histopathological studies. In all of them a Mitsuda test was performed.
The results obtained were variable probably because among these cases there is reactional bordeline cases and reactional tuberculoid cases, that is, cases with different grades of cellular immunity.
Theses results will be discussed as wel as the probable mechanisms involved in the occurance of the ulcerations

CL32

PERIPHERAL AUTONOMIC NERVE DYSFUNCTION IN ASYMPTOMATIC LEPROSY CONTACTS

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Early detection of leprosy is the prerequisite not only to prevent lasting disability in leprosy patients, but also to reach the proposed WHO goal of world-wide elimination of leprosy. As there is both immunocytochemical and neurophysiological evidence that peripheral autonomic nerve fibers may be the focus of initial nerve damage in leprosy, neurophysiological methods testing for peripheral autonomic function may be useful in detecting evidence of early defects. Recent neurophysiological methods have used vasomotor reflex doppler velocimetry which measures the degree of impairment of fingertip vasoconstriction in response to an autonomic stimulus. Another method is the sympathetic skin response (SSR)which tests for sympathetic sudomotor function by measuring changes in voltage of the skin in response to exosomatic stimuli. Using these test methods, studies have shown that there is a high prevalence of abnormal vasomotor reflexes and absent sympathetic skin responses in leprosy patients.
In asymptomatic leprosy contacts, it is unclear to what extent exposure to the neurotropic M. leprae is associated with the initiation of subclinical nerve damage. To investigate this, we performed vasomotor reflex testing (VMR) and the sympathetic skin response (SSR) in 36 asymptomatic leprosy contacts (25 household contacts, 12 hospital contacts) compared to 47 age- and sex-matched controls in Pokhara, West-Nepal. As for VMR, the flow reduction following an inspiratory gasp as recorded from finger and toe tips showed a mean percent reduction of 57.8 (standard deviation 14.6) among household contacts, 61.9 (17.5) among hospital contacts and 66.8 (7.8) among controls ($p= 0.001$ by analysis of variance). The prevalence of abnormal test results was 54% among household, 42% among hospital contacts and 15% among controls ($p= 0.0005$ by chi-square test for trend). Further confirmation of autonomic nerve dysfunction in otherwise healthy Nepali leprosy contacts was shown by parallel testing with the sympathetic skin response. Contacts had a prevalence of 13.8% of absent SSR, controls 6.3%.
The implication of impairment in vasomotor and sudomotor function in leprosy contacts needs yet to be determined. However, we propose this to be a response to exposure to M. leprae which represents either ongoing nerve damage or nonprogressive residual autonomic nerve damage.The importance of abnormal autonomic testing as a predictor of progression to clinical disease can only be elucidated in prospective cohort studies, ideally complemented with immunological and histological studies.
Our results suggest that both VMR and SSR testing might be of potential value for detecting early leprosy before the occurrence of clinical motor or sensory nerve deficits.

CL33

REVERSAL (DTH) REACTION FOLLOWED BY ENL:

A DISTINCTIVE SUBSET OF PATIENTS.

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We have observed 12 BL or LLs patients who presented with, or developed DTH reactions after the initiation of antibacterial therapy, but who subsequently developed erythema nodosum leprosum (ENL), the DTH to ENL group. During the same time, two LLs patients had ENL followed by relapse-associated DTH, a significant, $p=0.02$, difference in the sequence of the two conditions. The DTH to ENL group had statistically significantly higher BIs at the time of diagnosis of the DTH reaction compared with two DTH controls, seven multibacillary patients presenting with DTH reactions and 14 BL or LLs who developed DTH reactions after starting treatment but had no ENL. DTH-associated histological changes were less well developed in the DTH to ENL group than in either of the two controls. In the DTH to ENL group, 75% required prednisone in addition to thalidomide to achieve a complete remission, in contrast to only 10% of 21 ENL clinical controls. In the DTH to ENL group, the *classical* histological ENL pattern was present in only 36% of the DTH to ENL groups, in contrast to 88% of 33 ENL histological controls. In 8 of 8 of the DTH to ENL patients studied, after the ENL remitted, *M. leprae*-sonicate-stimulated lymphocyte transformation tests gave stimulation indicies within the range of our TT and BT patients.

The DTH to ENL group has a novel lability of host immunologic postures, sharing some features with, but differing in important aspects from, LLs patients who relapse as BT.

CL34

THYROID STATUS IN GENESIS OF LEPROSY NEURITIS

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176 patients across the whole leprosy spectrum were investigated for ^{131}I accumulation in thyroid gland, level of organic ^{131}I in body - by the whole body radiometry; blood plasma levels of triiodothyronine (T3) and thyroxin (T4) - by radioimmune tests. Based on the data obtained all the patients under study were divided into four groups: by % of ^{131}I accumulated in thyroid gland (in per cents of count of the whole body): less than 45% - 1st; 45% and more - 2nd (average contents of organic ^{131}I in body of the patients of these groups were 1,53±0,13 and 2,42±0,30% of the total body count, respectively); by T3 level (in nmoles/l): less than 2 - 3rd group, 2 and more - 4th group. Prevalence of neuritis with marked painful syndrome developed before or after our investigation was significantly higher in the 1st group s compared with the 2nd and in the 3rd group as compared with the 4th ($P < 0,05$). Besides, severity of painful syndrome in patients of 1st and 3rd groups exceeded that in the 2nd and 4th groups. At the same time in some patients of the above groups spontaneous and phytohemagglutinin-induced activity of T-suppressers was studied. Statistical analysis showed a significant direct correlation of Ts activity with endogenous thyroid hormone levels. Thyroid status-dependence of incidence of leprosy neuritis might suggest active influence of thyroid hormones on Ts functions by regulating autoimmune processes underlying the neuritic complicationd of leprosy.

CL35

STUDIES ON REACTION, NEURITIS AND DEFORMITY OF MB LEPROSY PATIENTS.

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We studied retrospectively on the episodes and incidence of complications in B.I. positive leprosy patients who completed WHO MDT treatment and were observed for two years after RFT. All 232 cases were skin smear positive at their first visit to the clinics. The symptoms and signs such as reaction, neuritis and deformity were observed both during the treatment and after RFT.

The classification of the cases was nine BT, 20 BB, 127 BL and 79 cases LL. The male and female ratio was 201 to 31. During treatment, 47% of cases became B.I. negative, 24% remained positive and 29% uncertain.

Type-1 reaction during treatment occurred in 18.96% cases, and the reaction after RFT occurred in 2.58%. Type-2 reaction during treatment occurred in 27.58% cases, and the reaction after RFT occurred in 9.48%. During treatment, 25.43% cases developed neuritis, and after RFT period 3.44% developed it. Concerning deformity cases, at the onset of treatment, 105 cases indicated "No deformity , 65 cases Grade-1, 34 cases Grade-2, and 26 cases uncertain. At RFT, 114 cases indicated "No deformity", 44 Grade-1, 42 Grade-2, and 32 cases uncertain.

Of each cases above, we want to trace how the deformity developed under, if any, particular circumstance, and also we hope to point out if there is any measures we can take to prevent progress of the deformity.

CL36

THE DIVERSE HISTOPATHOLOGY OF SINGLE LESION LEPROSY

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Presently single lesion leprosy is an important subject of discussion due to its tendency of self healing in considerable number of cases and the recent approach to treat these cases with a single dose of multidrug regimen. This simplified approach raises a question on the morphological uniformity of single lesion leprosy. The present study attempts to analyse the range of histological variations in this entity and to find out if these cases are uniform enough to be clubbed together for a single regimen of drugs.

Skin biopsies from 152 patients, having a single skin lesion and registered in Urban Leprosy Centre, RML Hospital are included in this study. The skin tissues are processed, and stained as per standard techniques. Two sections one stained with H & E and the other with Fite Farraco stain are examined in each case. The main histological features recorded were : 1. Granuloma fraction, 2. Density and disposition of Lymphocytes and epithelioid cells. 3. Degree of focalisations, 4. Intensity of inflammation.

As per the histology there were 19 Indeterminate 44 TT and 89 BT cases. Fourteen BT cases showed some extent of type I reactioin. Granuloma fraction varied from 10 to 90%. The indeterminate cases showed varying degree of lymphocytes infiltration, and nerve involvements.

Single lesion cases are not uniform in their morphology. Since histology faithfully reflects the tissue response to *M leprae* or its antigen, ignoring this aspect completely in designing a drug schedule and going only by number may not be completely risk free.

CL37

MONO LESION PATIENTS AN OBSERVATION OVER 13 YEARS

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The Present study deals with 1825 Mono Lesion Leprosy Patients out of 4563 new patients recorded at The Leprosy Mission Control area in Vizianagaram, A.P., South India during 13 years from 1984- 1996.

The retrograde study is taken up to find out the changing profile of Mono Lesion patients over a period. It is to record that 39.99% of patients have single lesions, the Men being 20.3% and Women 19.68%. Mono Lesion patients belong to Tuberculoid 1657 (36.31%), Borderline Tuberculoid 156 (8.54%) and Indeterminate12 (0.65%).

The Data is analysed under Year wise, Age wise, Duration of disease, Multi-Drug Therapy, Surveillance. The study showed that Mono-Lesion patients are of same proportion over these years.

CL38

SINGLE LESION LEPROSY - CASE REPORTS

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In several countries single lesion leprosy is being reported in large numbers. The LCU Miraj has been involved for over 20 years in the National Leprosy Eradication Programmes and recently in a WHO supported multicentric drug trial on monolesion leprosy including Rifampicin, Ofloxacin & Minocycline (ROM). We present case histories of two patients. An elderly male treated with ROM worsened at 9 months follow-up and then put on PB-MDT. While skin smears were reported negative, biopsies revealed a BI granuloma of 1+ and a solidly staining bacillus was seen. In another case on PB-MDT from LCU Islampur, smears were not done as per guidelines for monolesion cases for that centre. He was about to be released from treatment when clinical suspicion made one of the authors suggest a skin smear on the patch. The bacteriological index observed on that patch was 3+ on a single site. The patient was put on MB-MDT. Subsequent follow-up showed that the patient developed more lesions. The authors opine that examination of monolesion cases be done with utmost care. The significance of these findings, their relevance for leprosy control programmes and the role of skin smear examination are discussed.

CL39

PREDICTIVE VALUE OF THREE COMMON SYSTEMS OF CLINICAL CLASSIFICATION IN LEPROSY

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We studied the correlation of the 3 clinical classifications that are in common usage in leprosy, namely, the 1995 WHO classification, the Ridley-Jopling classification, and the classification using a body area system, with the histopathological classification.

121 patients whose clinical and histopathological classifications were done independently while they were untreated as per Ridley-Jopling criteria were included in the study. Their slit-skin smear status were elicited and their body lesions were counted; major trunk nerve function losses were also scored in terms of the motor/sensory loss. Kappa coefficient were used to determine the chance-corrected agreement of the 3 clinical classifications.

The results showed that when histopathological classification was used as the "gold standard" of classifying leprosy, all 3 systems have fair to good agreement. However, the Ridley-Jopling classification has the highest predictive value(0.69). The WHO-1995 clinical classification of counting skin lesions is second (0.63) and the classification using a body area system ranked third (0.43).

CL40

CORRELATION OF CLINICAL, HISTOLOGICAL AND IMMUNOLOGICAL FEATURES ACROSS THE LEPROSY SPECTRUM.

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In this study, 89 patients clinically classified in the R-J scale showed an overall concordance of 89.9% in the histological impression read blindly. The differences were between TT-BT and BL-LL and BB. The Mitsuda response mostly conformed to the clinical classification.

While the lymphostimulatory responses using BCG and its sonicate were high, responses to Dharmendra lepromin were poor despite good skin test responses in BT and TT patients. Leprosin, rML65 and delipidified components accounted for 46.9% in these patients. Humoral responses to 35Kda Protein, PGL-1 were within expected limits. IgG responses to rML65 denoted Mycobacterial presence.

Clinical classification in the field is adequate for purposes of treatment.

CL41

CLINICAL, HISTOPATHOLOGICAL AND IMMUNOHISTOLOGICAL APPRAISAL OF REVERSAL REACTION.

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This study was undertaken to differentiate the vexing problem of reversal reaction from relapse. Clinically the reversal reaction were characterised by increased erythema, swelling, tenderness of the skin lesion when pressed between the fingers and rubbery or Juicy consistency. Presence of oedema and DTH reaction were observed in histological sections.

Monoclonal antibodies directed against T cell subsets in situ in paraffin section stained by immunoperoxidase has enabled differentiation of the reactional from the active state. This is greatly aided by immunohistological staining for mycobacterial antigen.

CL42

DELIBERATIONS ON THE EARLY SKIN LESION IN LEPROSY

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The nature of early leprosy lesions, and the extent to which such lesions can self-heal, remain elusive questions. The Lepra Evaluation Project (LEP) and Karonga Prevention Study provide a unique opportunity to study these issues. Two total population surveys were carried out during the 1980s, each covering more than 110,000 persons, and the population has been closely monitored since then, in conjunction with follow up for a vaccine trial. Body charts have been completed for all individuals at every examination, including the drawing of all skin blemishes, birthmarks, fungal lesions and scars, as well as lesions suggestive of leprosy. Lesions considered possibly attributable to leprosy are reviewed by a medical officer and biopsied if he agrees that leprosy is a possible diagnosis. Whenever an individual is confirmed as a leprosy patient, his/her earlier body charts are reviewed, for evidence of any signs which might have been present at earlier examinations. Approximately 15 % of apparently "new" cases are found, in retrospect, to have (had) evidence of precursor lesions. This paper will describe these lesions, discuss the logic of inferring whether they do in fact represent early leprosy, and estimate (relative) risks that various lesions, in certain age groups and sites, do in fact represent early manifestations of clinical leprosy.

CL43

REACTIONS AFTER INTERMITTENT THERAPY WITH ROM IN PB LEPROSY

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WHO has instituted fully supervised, intermittent regimen with rifampicin(R), ofloxacin (O) and minocycline (M) in certain countries (Pannikar,1997) and single dose of ROM (ROM-1) is already recommended for single lesion PB. Three groups of PB patients were treated as follows.(i) single lesion : ROM -1, (ii) 2 to 9 lesions : ROM - 3(monthly intermittent doses for 3 months) and (iii) ≥ 10 lesions : ROM-6 (monthly intermittent doses for 6 months). The patients under 5 years and over 65 years of age and those with pregnancy were excluded.

While our object is to make long term clinical and epidemiological observations, we report here preliminary observations on the occurrence of reactions during the first year of follow up after starting therapy.

REGIMEN	Cases	Reaction(%)
ROM - 1 (1-lesion)	240	4(1.7)
ROM - 3 (2-9 lesions)	190	14(7.4)
ROM - 6 (>10 lesions)	34	5(14.7)
TOTAL	464	23(5.0)

19 (83%) out of 23 patients developed reaction within the first six months.

There seems to be a gradation of the percentage of type 1 reactions in PB leprosy, as we progress from single lesion to more severe forms, the risk being determined by the extent of the disease before treatment with ROM.

CL44

A DOUBLE BLIND, CONTROLLED, DOSE COMPARISON STUDY OF THALIDOMIDE IN THE ACUTE TREATMENT OF ERYTHEMA NODOSUM LEPROSUM (ENL)

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Patients with acute, histologically confirmed ENL are randomized to thalidomide in a dose of either 100 or 300 mg/day given once daily for 7 days; those who respond are tapered off over a period of 2 to 6 weeks. Patients are seen daily in the clinic for dosing and assessment of ENL and adverse events. Laboratory studies, and physical, ophthalmologic, and neurological examinations are performed at baseline and at the final study visit.

The study is presently ongoing. The blind will be broken in August when 25 to 30 patients will have participated. The efficacy and tolerability of the two treatment regimens will be compared. At the most recent interim review, 18 patients had been entered. All were Filipino males with a mean age of 27 years. At entry, they had numerous inflamed lesions, ranging in number from 48 to >500, and systemic signs and symptoms including fever, malaise, arthralgia, and anorexia. After 7 days of double blind treatment, 10 patients had no new cutaneous lesions; acutely inflamed lesions decreased by more than 80% in 6 patients, and 2 patients were treatment failures. Somnolence and rash were the most common adverse events, occurring in 50% and 28% of patients, respectively.

CL45

RESPONSE TO CORTICOSTEROIDS OF ACUTE NERVE FUNCTION IMPAIRMENT IN A PROSPECTIVE COHORT OF LEPROSY PATIENTS

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The Bangladesh Acute Nerve Damage Study (BANDS) is a prospective cohort study aimed at investigating the epidemiology of acute nerve function impairment (NFI) in leprosy and its response to treatment 2,665 new leprosy patients have been recruited into the cohort and to date observed during 36 months.

Out of the 2,665 patients in the cohort, 409 (15.3%) presented with NFI at the time of registration, and 398 (14.9%) developed NFI during or after MDT. Of these, 351 patients with acute NFI or other reactive events received a standardised course of prednisolone for 4 months. Nerve function was monitored by sensory and motor testing of the ulnar, median, radial, facial, lateral popliteal and posterior tibial nerves. Nerve function scores taken at the start and completion of treatment with prednisolone and at 1 year's followup, are analysed.

The results of treatment are presented according to the nerves that were monitored in terms of full and partial recovery, no change, and deterioration. In approximately 60% of the cases there was partial or full recovery of nerve function. In the remaining cases recurrent leprosy reactions and deterioration of nerve function necessitated further treatment of NFI, either by repeated treatment with steroids or by other interventions such as surgical nerve decompression.

CL46

THE EFFECTS OF PROPHYLACTIC CORTICOSTEROIDS ON THE INCIDENCE AND TIMING OF NERVE FUNCTION IMPAIRMENT IN NEWLY DIAGNOSED MULTIBACILLARY LEPROSY PATIENTS

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Acute nerve function impairment (NFI) is known to occur frequently in multibacillary (MB) leprosy patients in the first few months after receiving multi-drug therapy (MDT). A pilot study was initiated to test the hypothesis that corticosteroids given at the time of diagnosis can reduce the incidence and severity of NFI in newly diagnosed MB patients.

Newly diagnosed MB leprosy patients with no contraindications to MDT or corticosteroids were given prednisolone 20mg/day at time of diagnosis for 3 months tapering to zero in the fourth month, along with their MDT.

The incidence, timing and severity of NFI events are compared with an untreated historical cohort taken from comparable leprosy patients included in the Bangladesh Acute Nerve Damage Study (BANDS) cohort. Preliminary analysis of results after 12 weeks' followup indicates that the incidence of NFI/reactive events requiring higher doses of prednisolone for treatment are reduced by 50%.

CL47

PREVENTIONOF NEURITIS AND DEFORMITIES IN TUBERCULOID LEPROSY PATIENTS BY PROPHYLACTIC THERAPY WITH CHOLORO QUINE AND LOW-DOSE PREDNISOLONE

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Tuberculoid Type leprosy patients during the MDT Therapy developing complications due to Neuritis irrespective of occurence of Type I Reaction was found in majority of PB TT patients

A study conducted on a population of 1.3 million of CULES Project, 351 TT Patients were selected. Out of them 72 patients were affected with Type I Reaction given Low Dose Prednisolone (10-mg OD) and chloroquine (150 mg BD) and observed for results during the followup period for six months. The other group of 279 patients were given only chloroquine in the same dose for six months period. Among the reaction patients 65 cases were stayed free from recurrencce of Type I Reaction. Among the 279 patients 246 cases were reported No Reactions or Neuritis during the six months followup. Remaining 33 patients who presented with Type I Reaction during the MDT Therapy early Neuritis with Dermal Nerve Thickening responded well after given tapering dose of Prednisolone for six weeks

We conclude that patients on risk of getting Neuritis and Type I Reaction if given Prophalactic Therapy with Chloroquine (150 mg - BD) for six months and Low-Dose Prednisolone (10 mg - OD) 3 days per week were greatly reduced the incidence of Neuritic complications in TT Patients and minimised the occurence of deformity.

CL48

THE EFFICACY AND SAFETY OF THALIDOMIDE FOR ENL: A LITERATURE REVIEW

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We conducted a comprehensive review of the published literature on the efficacy and safety of thalidomide therapy for ENL. Following the landmark observation of Sheskin, a computerized search utilizing MedLINE and seven other databases revealed relevant publications in six controlled clinical trials, twenty-six open label trials and fifteen case reports involving a total of 1,848 patients. The six controlled trials utilized 201 patients and 280 courses of thalidomide and were placebo (5) or aspirin (1) controlled. Each of these controlled clinical trials had clearly defined enrollment criteria, employed a scoring system for the severity of the reactional state and the assessment of response, and found thalidomide superior to placebo or aspirin. In the total published literature thalidomide was found to be effective in over 90% of cases and in both sexes and a wide age range. Fever and skin lesions generally resolved in days, while other manifestations (neuritis,

lymphadenitis, and orchitis) also responded, albeit more slowly (1-2 weeks). Also patients previously on corticosteroids responded, though again slowly. In earlier studies daily doses of 300-400mgs were utilized, but lower doses of 100-200mgs are often effective. Maintenance thalidomide, often effective in even lower in dosage, prevented recurrent ENL.

Thalidomide treatment for ENL is generally extremely well tolerated. It's serious toxicities, birth defects and peripheral neuropathy, are almost never encountered in leprosy patients. Adverse events occurring in more that 1% of patients include: somnolence (6%), constipation (4%), and edema (2%). The only laboratory abnormality in treated leprosy patients which could be ascribed to thalidomide was mild leucopenia/neutropenia (<1%). Because of thalidomide's reliable efficacy and safety it is the drug of choice in treating chronic recurrent ENL.

CL49

RISK OF STEROID INDUCED DIABETES IN LEPROSY PATIENTS

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Leprosy patients are often treated with corticosteriods as this is the drug of choice for severe Type-I and Type-II Reaction, Neuritis, recent muscle weakness etc. Traditionally all leprosy patients requiring steroids are being admitted in our hospital on the basis of the information that there is risk of diabetes in such patients. This risk has not been so far properly documented. The study was undertaken to determine the risk of diabetes in these leprosy patients receiving steroids- and to know whether this risk was related to dose of steroid or number of courses of steroids or both. The study group consisted of 100 leprosy patients both male and female fulfilling the conclusion criteria. Their blood, urine and sugar was tested at the time of starting steroids, during the course of steroids and ideally within 3 months of stopping steroids. So far out of 87 patients, one patient developed diabetes towards the end of steroid therapy, 11 patients showed hyperglycaemia during the course of steroid but subsequently had normal blood sugar level. This shows that steroids can be used in leprosy patients whenever indicated and patients need not be hospitalised for steroid therapy.

CL50

EFFECT OF LEPROSY ON PREGNANCY AND CHILD BIRTH

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Objectives - To study the effect of leprosy on pregnancy and child birth.
Sample - The study was conducted on 160 adult women leprosy patients, attending leprosy clinics in Safdarjung Hospital, Dr. Ram Manohar Lohia Hospital, Skin Institute and The Leprosy Mission Hospital of Delhi. Patients under treatment were interviewed using structured and pre-tested interview schedule.
Results - 121 (75.6%) of the women patients belong to low & lower-middle income group and live in either slums or single room accommodation. 111 (69.4%) are illiterate and 128 (80%) are economically dependent. 128 (80%) are in their reproductive age group and are married. 121 of them co-operated and expressed their experience. Of them, majority (101, 83.47%) told that there has been no change in their sexual relationship. Only 9 (7.43%) reported infrequent sexual intercourse and 11 (9.09%) had no sex since their disease been diagnosed, of these 3 attributed this to the disease.

70 (54.68%) women became pregnant during their disease. Out of them 41 (58.57%) conceived before anti leprosy treatment was started. 15 (21.42%) conceived during therapy and 14 (20%) both before and after the treatment was started. This shows that leprosy did not affect patient's option towards child bearing.

23 (79.3%) women continued their treatment during pregnancy while 6 (20.68%) stopped. Two of them stopped with the fear that medicines might be harmful for the baby, one did so under the family pressure.

Of the 70 women who conceived during the disease, 11 (15.7%) reported to have undergone abortion. Among them, 7 (10%) had spontaneous abortion 4 (5.7%) did MTP. 61 women delivered during their disease of which 54 (88.52%) had normal babies. Out of the remaining 7 (11.47%), there were two cases of still birth, 2 born normal but died within few days and 3 born with congenital anomalies and died subsequently. Whether it was due to the disease or its treatment, is not clear from the discharge slip. This coupled with 7 cases of spontaneous abortion is a considerable number and needs to be studied further.
Conclusion - Considering the higher percentage of fetal deaths and abortions in the women leprosy patients during therapy despite its proven cause, it is advisable to postpone the pregnancy plans till the completion of anti-leprosy treatment.

CL51

PREGNANCY IN PATIENTS WITH HANSEN'S DISEASE: A REPORT OF THREE CASES

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Three pregnancies occurred within a cohort of 40 patients with leprosy over a six year period. There are few recent reports in the literature which deal with pregnancy in leprosy patients.

In Case 1, symptoms of the disease appeared during pregnancy. In Case 2, reactivation versus reaction occurred during pregnancy in a previously treated patient. In Case 3, the fetus was exposed to three antimicrobial drugs during the first trimester. These cases are placed within the context of the most recent published reports on the subject.

There are several conclusions to be drawn from the study of these cases and the literature review. The pregnant state causes a relative decrease in cellular immunity. This decrease allows M. leprae to proliferate which may precipitate or worsen disease leading to permanent nerve damage. Careful management of reactional states and maintenance of patients on monotherapy dapsone or a multidrug regimen may prevent this nerve damage. Infants are usually much less affected than the mothers; however, selection of the mother's antimicrobial regimen must ensure adequate control of the bacteria while avoiding teratogenicity and in utero side effects.

CL52

CHARCOT'S ARTROPATHY IN LEPROSY

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Charcot's Artropathy is one of the most important complications of neurothrophic osteoarticular lesions in Leprosy with bone destruction of the ankle and alterations of scaphoid, cuboid and calcaneum that originate important disabilitle of difficult treatment.

Eighteen cases of Charcot's Artropathy (frequency of 2,5%) 10 LL, 6 bordeline and 2 tuberculoides are presented.

The inicial and more advanced treatments in which a Arthrodesis is necesary are reviewed.

CL53

PALPATION OF SKIN TEMPERATURE IN THE NEUROPATHIC FOOT

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In leprosy patients with neuropathic feet there is a high risk of new complications as ulcers or neuro-osteo-arthropathy (Charcot deformity). Pain as an early sign for this is missing because of loss of sensory function. Local hyperaemia is also an early sign of ulceration and Charcot-deformity. This hyperaemia can be recognized as a local or diffuse warm foot. In investigations about this subject the temperatures were assessed using either Liquid-Crystal contact thermography or Infrared dermal thermography. In the normal clinical practice skin temperature is recorded by palpation. Therefore, we tested the interobserver reliability of measurement of skin temperature of neuropathic leprosy feet and normal feet by palpation, and the correlation between this and measurement by an infrared thermometer. There was a very high interobserver reliability between the two examinators in

the leprosy group (kappa = 0.79) and a high correlation with infrared thermometry (Spearman's rank correlation coefficient 0.82 with p << 0.002). A field study will be undertaken in which the interobserver agreement and correlation with objective data will be determined between different field health workers, patient's family and the patient him/herself. The results of such an investigation can be a guideline for a therapeutic program for neuropathic feet in leprosy patients in order to prevent further complications.

CL54

DIAGNOSTIC PROCEDURES FOR SUSPECTED OSTEOMYELITIS IN NEUROPATHIC FEET OF LEPROSY PATIENTS

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Increased temperature, swelling and erythema of neuropathic feet may indicate soft tissue infection, osteomyelitis, neuroosteoarthropathy (Charcot Foot) or autonomic disbalance. We investigated 21 neuropathic feet clinically suspected for osteomyelitis with a combination of imaging techniques ie: plain X ray,3 fase bone scintigraphy, leucocyte scintigraphy, magnetic resonance imaging (MRI) with a recently developed fat suppression technique and i.v. Gadolineum, and more recently additionally bone biopsy under X ray guidance. Bone biopsies were processed for bacterial culture and histopathological examination.
Gold standard for the diagnosis osteomyelitis were positive bone culture or clinical outcome, based on previously defined criteria, after a period of 6 months. Of the 10 bone cultures only one grew bacteria, whereas 5 of the 9 bone specimens showed signs of inflammation on histopathological examination. Only a few patients were diagnosed as having osteomyelitis based on the clinical outcome. In general the imaging techniques suggested the diagnosis osteomyelitis in higher numbers. MRI, executed with a fat supression technique and i.v. Gadolieum, seems to have high sensitivity but low specificity.
The diagnosis osteomyelitis in neuropathic feet of leprosy patients is a problem for which no simple diagnostic tool is available. An important diferential diagnosis is the acute fase of neuroosteoarthropathy.

CL55

Detection of Peripheral Dysautonomia in Leprosy: Clinical versus Neurophysiological parameters

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Histological and neurophysiological studies confirm that peripheral autonomic nerve fibres are the initial target of nerve damage in leprosy.
To determine frequency and type of peripheral dysautonomia in leprosy, we examined hands and feet for sudomotor and vasomotor functions of absent sweating as determined clinically, subjective feeling of cold, skin temperature, skin vasomotor reflex (SVMR) and skin sympathetic reflex (SSR). Results were correlated to type of leprosy (paucibacillary, multibacillary), time elapsed since diagnosis and to indicators of sensory (touch sensitivity testing (TST)) and motor nerve dysfunction (voluntary muscle testing (VMT)).

57% and 53% of leprosy cases had clinical and subjective loss of sweating respectively. 40% had subjective feeling of cold in hands/feet with median digit skin surface temperatures showing a trend to lower temperatures in those with subjective cold in a limb compared to controls. Objective temperature difference was only marginally statistically significant for the left hand ($p=0.09$). Overall comparison between leprosy and control group temperature showed no clear differences. But minimum temperature was always lowest for the leprosy group. 60.9% of measured extremities in leprosy sufferers had absent SSR compared to 6.3% in the control group, with all the latter negative SSR occuring in the feet. 61.2% of leprosy cases had abnormal SVMR and mean SVMR was statistically significantly reduced compared to controls. Absent SSR in an extremity was accompanied by significantly reduced SVMR in the same.

There was good correlation between present SSR and present subjective feeling of sweating and clinical detection rate of sweat (70-83.3% and 68.8-88.9% respectively). Subjective feeling of sweating correlates well with the clinical detection rate of sweating (64.9-72.3%). In contrast absent SSR correlates poorly with subjective feeling of absent sweating in the corresponding limb (5.3-28.7%) and subjective feeling of absent sweating correlates poorly with clinical detection rate (11.3-15.6%).

MB type of leprosy has more absent SSR than PB, with no such correlation to SVMR. With increased time since diagnosis of leprosy, prevalence of absent SSR (significant for hands) and SVMR (significant for feet) increases. In parallel to increasing severity of sensory (TST) and motor (VMT) nerve dysfunction the rate of absent SSR and pathological SVMR significantly rises. Abnormal SSR and SVMR frequently occur in parallel but not seldom show separate dysfunction. The anatomical distribution of dysautonomia does not run parallel to that of regional motor and sensory nerve dysfunction.

We conclude that vasomotor and sudomotor peripheral dysautonomia is common and patchy in leprosy and best detected using SSR and SVMR which are better suited for picking up subtle focal dysfunction than clinical parameters.

CL56

FACIAL SENSATION IN LEPROSY: A METHOD OF QUANTITATIVE ASSESSMENT

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Background: Several methods exist for sensory testing of hands and feet of leprosy patients. There may be various ways to test facial sensation, but these have neither been formalized in publication nor systematically applied to sensory testing of the face despite the fact that the trigeminal nerve and the great auricular nerve which supply sensation to the face are affected in leprosy.

Methods: In a sample of leprosy patients, face sensation threshold measurements were done using a set of three semmes Weinstein (S-W) monofilaments that gave a force of 0.05-0.07, 0.2 and 2 g. Sensation was tested by 3 examiners and intra and interobserver testing was used as a means of validation of the findings.

Conclusions: Within the limitations of this study, the results indicate that use of S-W monofilaments is a fairly reliable and repeatable method for sensory testing in the face. During follow-up, a single filament with a force of 0.05-0.07g (2.83 marking number in S-W filament or any other filament with a corresponding gram force) could be used to assess sensation. A simple procedure of quantifying sensation in these nerves is suggested. A method to incorporate trigeminal or great auricular nerves sensory testing into the existing sensory assessment charts is also discussed.

CL57

M.LEPRAE IN PERIPHERAL NERVE – 4 YEARS AFTER COMPLETION OF MDT-PB

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Multi Drug Therapy (MDT) is believed to render leprosy cases non infectious. Pauci Bacillary (PB) leprosy cases are usually skin smear negative. This group of patients are expected to possess varying degree of Cell Mediated Immunity (CMI) against M.leprae when compared to MB leprosy patients. MDT is expected to kill all the bacilli and the CMI will clear these bacilli. We report on a PB leprosy patient who have received MDT-PB regimen (WHO). Four years after completion of MDT, he developed fusiform swelling in peripheral nerves. Histo Pathological Examination (HPE) of this lesion revealed presence of M.leprae. Is this an event of relapse? He was treated with oral steroid therapy and the bacilli could not be demonstrated in subsequent HPE from the same site. The course of disease, details of investigations and management are discussed.

CL58

"FLU" SYNDROME ON MONTHLY RIFAMPICIN DOSE FIRST CASE REPORTED FROM YEMEN

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"Flu" syndrome is rarely reported on monthly rifampicin doses given to leprosy patients. Although it is not uncommon with intermittent administration for tuberculosis it is resulted mainly due to the effect of the drug on the liver which is unlikely to occur when the drug is given only once monthly.

The first case of "flu" syndrome reported from Yemen will be presented.

CL59

THE DIAGNOSIS OF PURE NEURAL LEPROSY AMONG PATIENTS WITH SYMPTOMS OF PERIPHERAL NEUROPATHY: A FOLLOWUP STUDY. Sckacel M.,* Antunes SLG.,** Jardim M.,* Nery JAC.,** Sarno EN**.
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This investigation was carried out on a group of 43 patients clinically followed in the Souza Araujo Outpatient Service, Instituto Oswaldo Cruz, in the period from May, 1992 to August, 1996. They presented exclusively neural symptoms at first reference, which raised the diagnostic suspection of pure neural leprosy. The symptoms were distributed on the patients according to the following pattern: sensorial loss: 29; paresthesia: 20; nerve enlargement: 11; nerve pain: 11; Motor involvement: 12. Nine patients had the diagnosis of leprosy confirmed during the follow-up period by either the appearance of specific cutaneous lesions (2 borderline tuberculoid, 2 lepromatous leprosy, 3 reversal reactions), or by the turning up of neuritis (2). The average time elapsed between the beginning of follow-up and the diagnosis was 4.8 months, ranging from no time (diagnostic at first reference) to 12 months. These patients were submitted to MDT-WHO for paucibacillary or multibacillary patients. Among the leprosy-confirmed patients, seven had sensorial loss, six had paresthesia, four had nerve enlargement, two had nerve pain, and five showed motor involvement. These symptoms were never found isolated in these patients. One patient presented decrease of eletroneurographic sensitive response of the sural nerve. .Three patients went through nerve biopsies (previously to diagnosis) but no signs of leprosy neuropathy were detected. Clinical evaluation of neuropathic patients with close neurological and eletroneurographic followup was found to be the most effective method for detecting pure neural leprosy. The nerve biopsy did not contribute to the diagnosis of leprosy neuropathy in this investigation.

CL60

LEISHMANIASIS ANERGICA DE REPÚBLICA DOMINICANA

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Se describen las caracteristicas clinicas, parasitologicas, inmunologicas, epidemiologicas y terapeuticas de una forma de leishmaniasis cutánea propia de la Republica Dominicana. Todos los casos, 41 en total, presentaron prueba de leishmanina negativa, fueron descubiertos en el periodo 1974-1997 por el personal medico y paramedico del programa para el control de la lepra, especialmente en la region Este del pais. No se encontro otra forma clinica de leishmaniasis. Una investigacion en poblacion sana de areas endemicas mostro 156 pruebas de leishmanina positivas entre 893 personas a las cuales se les practico la prueba.

Pruebas de inmunofluorescencia indirecta practicadas en 510 personas de áreas endemicas mostraron titulos positivos en 183. En muchos de estos casos se planteo el diagnostico diferencial con LT y LL.

CL61

LEPRA INFANTIL

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Se estudian las caracteristicas que le son particulares en termino de morfologia de las lesiones, localizaciones anatomicas, evolucion, formas clinicas y posibles fuentes de contagio. La cifra promedio en menores de 15 años, en el periodo 1966-1997 es de un 22.3% sobre un total de 10,232 enfermos diagnosticados. La forma LL presenta un porcentaje de 9.9, el grupo dimorfo representa un 20%, la indeterminada un 18.3%. Lepra tuberculoide un 51.8%. Lepra indeterminada al inicio del programa presento valores altos, para luego acusar un descenso importante y presentar cifras minimas a partir del 1988.

CL62

FIVE KINDS OF DISEASES WITH ENLARGED PERIPHERAL NERVES MISDIAGNOSED OR SUSPECTED AS PURE NEURITIC LEPROSY

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M. leprae prefers to invade peripheral nerves and skin. The enlarged nerve accompanying with loss of associated functions was the most important and common symptom and sign of leprosy, and even was considered as the feature only belonging to leprosy. Only nerve damage but skin lesions was diagnosed as pure neuritic leprosy. Making its diagnosis was very difficult on a clinical basis. This paper reported patients with family hypertrophic neuritis, acute injure peroneal neuritis, intraneural ganglion of the lateral popliteal nerve, progressive spinal muscular atrophy and neurofibromatosis. All peripheral nerves of these patients were enlarged accompanying with loss of associated function and had been misdiagnosed as or suspected as pure neuritic leprosy clinically. We suggested that it was very important for differential diagnosis to go into more detail about history and examination. If indeed, some features of above mentioned diseases still could be found as indications to differentiate them from pure neuritic leprosy, such as obvious family history and extensive, even enlarged nerves with abnormal root-type neural function in family hypertrophic neuritis, acute and injury history in acute injure peroneal neuritis, etc., but predilection of given nerves and their sites, shuttle-like enlarged nerve with trunk-type or branch-type neural dysfunction are very charateristic for pure neuritic leprosy. As above what to say, the enlarged nerve with neural dysfunction was not features peculiar to leprosy, but diagnosis of leprosy should be considered first and further detailed examination should be made for final diagnosis. Neural histopathological examination could be helpful for diagnosis and differential diagnosis if necessary and possible.

CL63

DIFFERENTIAL DIAGNOSIS OF LEISHMANIASIS CUTIS AND LEPROMATOUS LEPROSY - ONE CASE REPORT

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Mr. Xiong, male, 29 years of age, farmer, born in Huaying county, Shanxi province, China. Eight years ago, redness of skin appeared on foreneck and face, yellow and red small nodules developed gradnally on red patches, no abnormal sensation, nodules enlarged in size and increased in number in recent 2 years. Skin condition: red, infiltrated and thickened skin on face with nodules, (liontiasis) (Fig.1). Nodules of various size distributed on upper extremities, armpits, thorax, abdomen, buttocks, thigh, scrotum and penis; many smaller ones on tongue, upper palate and vestibulum nasi (Fig.2). Cubital, axillary and inguinal lymph nodes were sligltly enlarged. No enlargement of the trunk of peripheral nerves was observed. Normal skin sensation. Skin smear AFB negative but positive for L-D bodies (Fig.3). No AFI but a large number of L-D bodies were identified in biopsy sections, matched the appearance of leishmaniasis cutis (Fig.4). Typical L-D bodies could be found in macrophages in nodules electron-microscopically (Fig.5) and its fine constructions were quite clear. The patient was cured by stibiation. No relapse occurs after 2 year follow up. Key points in differentiating lepromatous leprosy from leishmaniasis cutis were discussed.

CL64

THERMAL THRESHOLD TESTER FOR DETECTION OF SMALL FIBRE NERVE DAMAGE BEFORE ONSET OF CLINICAL NEURITIS

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First nerve damage in leprosy occurs in small unmyelinated nerve fibres, followed by small myelinated and lastly in large myelinated fibres only at a late stage of the disease.

Conventional electro-physiological examinations of motor, sensory and mixed nerve conduction velocity reflect activity in the fastest conducting, heavily myelinated nerve fibres, a small proportion of the total. A and C fibres, numerically the largest group of fibres in human cutaneous nerves, are not tested by these techniques.

The Thermal Threshold Tester (TRIPLE-T) measures thermal sensation thresholds to both cooling and warming of the skin by means of a computer controlled thermode applied to the volar surface of the wrist or dorsum of the foot. It thus provides an index of function in the small diameter thinly myelinated A (cold) fibres and unmyelinated C (heat) fibres. TRIPLE-T has been validated in diabetic and small fibre neuropathy. It has a particularly important role in the sequential and quantitative monitoring of small nerve fibre function.

TRIPLE-T detected small fibre damage in 70% children from families affected by leprosy compared with 18% children from non-leprous families living nearby. Its method of detecting nerve damage before clinical neuritis has occurred will be demonstrated

CL65

USE OF LASER DOPPLER FLOWMETRY IN THE DETECTION OF AUTONOMIC NERVE DEFICIT IN LEPROSY.

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Autonomic small diameter unmyelinated C nerves are destroyed early in leprosy. 56% of patients in Ethiopia present with established [autonomic and/or somatic] nerve damage. Present tests of sensory nerve function do not show abnormality until 30% of nerve axons are destroyed, nor can they predict which new patients will develop neuropathy leading to disability.

Skin Blood Flow (SBF) is regulated by autonomic (vasomotor) nerves. Under controlled conditions, specific autonomic provocations are used to stimulate SBF changes. Alteration in SBF is thereby used as a measure of autonomic nerve function.

Laser Doppler Flowmetry (LDF), a non-invasive technique for measuring changes in SBF, samples a nominal hemisphere 1 mm in radius. The system is small, lightweight and adaptable to field conditions. Multiple channel systems allow simultaneous assessments of multiple sites, thus reducing assessment time.

LDF has shown in leprosy patients and contacts significantly impaired vasomotor reflexes of fingers, compared to non-exposed persons (1,2); and abnormal responses following inspiratory gasp where nerve damage is present (3).

We anticipate LDF to answer:

1) Can impairment of small nerve function be graded and does this recover with treatment?

2) How does small nerve function loss relate to development of neuritis and disabilities?

3) How does LDF compare with traditional tests in diagnosing and monitoring leprosy neuropathy?

Refs: 1. Abbot NC, et al Int J Lepr, 1991; 59:537-547.
2. Wilder-Smith E, et al Lepr Rev, 1996; 67:306-317
3. Duncan ME, et al submitted for publication.

CL66

VALORACION DE LESIONES TROFICAS EN ENFERMOS DE LEPRA INACTIVOS CLINICA Y BACTERIOLOGICAMENTE HACE MAS DE 10 AÑOS.

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Se realiza una valoración de las lesiones tróficas residuales (especial atención a las lesiones óseas) en 60 enfermos de lepra controlados en el Sanatorio de Fontilles (España), inactivos clínica y bacteriológicamente hace más de 10 años.

Se valora la evolución de dichas lesiones tróficas desde el momento de la inactividad hasta nuestros días.

CL67

REGISTRATION FORM NEUROPATHIC FOOT.

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Neuropathy of a foot can cause changes in the form and function of the foot. This may lead to ulceration and/or neuro-osteo-arthropathy (Charcot foot). A neuropathic foot commonly occurs in Diabetes Mellitus - often associated with angiopathy - and in leprosy patients.

We designed a diagram in which the neuropathic foot and its complications can be described in a simple and unequivocal way: foot form (F), ischemic factors (I), neuropathic factors (N) and ulceration (U): the so-called FINU-diagram. Regarding foot form, a differentiation is made into no deformities, reversible deformities, irreversible deformities, skeletal deformities and various amputation levels in the foot. Ischemia is evaluated by assessment of the pulsations of the arteries at different levels. Neuropathy is an obligatory condition in order to speak of a neuropathic foot. In the FINU-diagram, there is a differentiation according to the cause of the neuropathic foot between diabetes mellitus and leprosy.
The ulcers were at first classified according to Wagner's classification. Since we do not find this classification to be sufficient practical, this part of the diagram was adapted, using the latest version of the "Dutch consensus statement on the diabetic foot" (1997). This classification contains assessment of the depth of the ulcer, microbiological components and the cause of the ulcer.

On the reverse side of the chart, the site and magnitude of an ulcer can be depicted in a standard drawing of a foot.

CL68

LOW FREQUENCY OF TESTICULAR DYSFUNCTION IN 125 PATIENTS WITH LEPROMATOUS LEPROSY - A RETROSPECTIVE STUDY.

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The association of lepromatous leprosy (LL) with abnormalities of testicular function has been well recognized. In order to assess the occurrency of involvement of the testis in male patients with LL in the last 15 years in the University Hospital of the Faculty of Medicine of Ribeirão Preto, São Paulo, we reviewed the data of 125 male patients with LL. The diagnosis of LL was made on clinical, bacteriological and histopatological grounds. Complaints related to testicular dysfunction were found in only 7 cases (5,6 %). The age of these patients ranged from 20 to 50 years. Impotence was the most frequent symptom (5 cases). Two patients had a history of orchitis. Leprosy was of more than 4 years in duration in 5 cases. Hypergonadothrofic hypogonadism was confirmed by laboratory tests in 6 patients. The frequency of complaints related to testicular dysfunction in our patients is well below of that described in literature (up to 50 %). This finding might be explained by a lack of a systematic search. Thus, we conclude that this frequency is underestimated, considering the high prevalence of leprosy in our population and the importance of gonadal impairment associated to LL.

CL69

ERITEMA NODOSUM LEPROSUM WITH SPECIFIC BONE LESIONS: CASE STUDY

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Paterson (1964) describes three kinds of bone lesions which may occur in leprosy: 1- specific ones, directly caused by *Mycobacterium leprae*; 2- inflammatory or degenerative ones, as a final result of sensibility loss; 3- osteoporotic ones, mainly due to disuse. The specific ones are seldom observed, and represent 3

to 5 percent of all bone lesions in leprosy. According to Opromolla (Hansen. Int. 21(1):67-74, 1996), they may be related to immune changes, which are characteristic of reaction episodes.

The authors present the case of a Lepromatous leprosy / Multi-drug therapy / WHO patient. In the eighth month of treatment, this patient developed a clinical picture of high fever, malaise, big joints edema with flogosis, painful eritematous nodules disseminated with severe ostealgia. A clinical diagnosis of *eritema nodosum leprosum* was made and anti-reaction treatment was started beside the specific therapy. General examinations were done, as well as X-ray studies which showed extensive bone lesion. Bone biopsy and bacteriological study of surgical piece proved the presence of acid-fast bacilli.

Reason for presentation: discussion of immunopathology of type II reaction (ENL) and its relationship to specific bone lesions.

CL70

7.CONTROL. GRANULOMA MULTIFORME (G.M.)*

* A NON LEPROSY DISEASE WITH A DIFFERENCE- NO KNOWN CHEMOTHERAPY TO CURE IT.

Roland Huskinson

Colchester, England.

The poster presentation depicts photos of this disease (which can easily be mistaken for Leprosy): it can co-exist with Leprosy: is of unknown origin, and for which there is no known treatment. Where the lesions co-exist with Leprosy lesions, they cause the patient little inconvenience; after the initial irritation period is over, which may be only a few months,but in some patients longer. On presentation, lesions tend to resemble the Tuberculoid type, with raised edges; but plaque like lesions of the Major Tuberculoid,and Borderline types of Leprosy may be seen. Lesions come and go at will:with or without Leprosy chemotherapy. An interesting feature of G.M., is that new lesions can appear on the identical sites of resolved G.M., lesions.
There is no loss of sensation in lesions, and no nerve involvement. No M. leprae found in smears. Diagnosis confirmed only by biopsy.
It is important that Field Workers and others, are aware of G.M., to avoid a Leprosy patient's treatment being unnecessarily continued after their Leprosy lesions are resolved: also to avoid G.M., being treated, erroneously, as Leprosy. In both instances thereby questioning the credibility of the Field Worker of examiner.
G.M., appears to be Worldwide, but regionalised in a Country, where observed.

CL71

ANTI-PERIPHERAL NERVE ANTIBODIES IN BLOOD SERUM OF LEPROSY PATIENTS

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Pathological mechanisms of nerve damage in leprosy are still not enough studied, in particular, a role of antibodies towards peripheral nerve antigens is not clear. In this connection we developed ELISA-based test-system for detection of anti-peripheral nerve antibodies (AbPN) in blood serum and assessed its prognostic value in leprosy. As antigen for sensibilization of microtitre plates a sonicate of ischiatic nerves of normal rabbits at concentration of 6 mkg/ml was used. Screening titre of the sera tested was 1:100, antibodies against human total immunoglobulins labelled with peroxidase was used as anti-species conjugate. Blood sera from 40 leprosy patients (LL-33, BL-4, BT-3) and 14 patients with non-leprosy neuropaties were investigated. Preliminary results demonstrated high levels of AbPN in multibacillary patients (LL, BL), mainly in those having high levels of anti-M.leprae antibodies. There was no correlation between clinically proved neuritis and AbPN levels. In case of non-leprosy neuropaties increased levels of AbPN were observed only in patients with proved autoimmune nature of their disease. Our data agreed with the opinion of existence of antigens in M.leprae and peripheral nerves, but pathological mechanisms of neuritis in paucibacillary leprosy forms still remain to be solved.

CL72

A METHOD OF ASSESSMENT OF FUNCTIONAL STATE OF PERIPHERAL NERVE SYSTEM IN LEPROSY PATIENTS WITH USING ELECTROACUPUNCTURE DIAGNOSIS

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Peripheral nerve damages in leprosy patients remain a pressing problem of leprology. Monitoring of functional state of peripheral nerves is of peculiar significance. A method of assessment of functional state of peripheral nerves by means of electropuncture diagnosis is presented. This method is based on diagnostic system ryodoraku (Nacatani, T., Yamashita, K. Ryodoraku acupuncture. Tokyo, 1957). Conduction velocity of 24 bioactive points in upper and lower extremities located on 12 main paired acupuncture meridians is estimated. Testing direct current is 200 mcA, voltage - 12 V. Functional state of ulnar nerve is judged by conduction velocity in points IG 4, C 7, TR 4; of radial nerve - GI 5, P 9; of median nerve - MC 7; of fibular nerve - E 42, VB 40; of tibial nerve - R 3, RP 3. After the conduction velocities have been measured the data are statistically processed. With normal values of velocity in bioactive point the results fit in the "physiological corridor". When values of registered current go significantly beyond the physiological limits, disturbances in velocity conduction in a given zone of skin innervation might be suggested. In acute neuritis conduction in corresponding representative points is increased, while in the development of degenerative changes it is decreased. Analysis of the results of electropuncture testing against the data of clinical observations in 48 leprosy patients suffering with specific neuritis showed 92,7% coincidence of diagnosis, suggesting a high significance of the method proposed.

CL73

AN EXPERIENCE OF USING PHARMACOPUNCTURE IN TREATMENT OF CHRONIC NEURITIS IN LEPROSY PATIENTS

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Treatment of peripheral nerve damages in patients with leprosy, especially of long-standing duration, remains to be an important problem of leprology. Therapeutic methods available are not enough effective. Results of pharmacopuncture (acquapuncture) treatment of 46 leprosy patients aged 28-62 years suffering from chronic peripheral neuritis are presented. The method involved introduction into certain bioactive points of upper and lower extremities of commercial aloe extract for injections. A dose of injectionable aloe extract per one point was 0,1 - 0,5 ml, maximally dose of 2,0 ml for all points. For ulnar neuritis pharmacopuncture was done into points IG 8, C 7; for fibular neuritis - into VB 34, VB 40; for median - MC 7; radial - GI 5, tibial - R 3, RP 3. In case of polyneuritis of upper extremities pharmacopuncture was prescribed as follows: points TR 8, MC 5 and in polyneuritis of lower extremities - points VB 39, RP 6. Usual course of treatment included 10-15 procedures each other day. Courses of treatment were repeated, if necessary, in 3 - 4 weeks. Clinical observations showed subsidence of painful syndrome, increase in muscle strength and mobility of damaged joints against the background of pharmacopuncture given. The patients observed general improvement and amelioration of sleep and appetite. Electropuncture testing of bioactive points before and during treatment according to the principles proposed showed increase in their nerve conduction suggesting functional improvement of peripheral nerves.

CL74

AVERAGE AGE OF DEATH AND FREQUENCY OF CANCERS - COMPARISON BETWEEN LEPROMATOUS AND TUBERCUOLID PATIENTS

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In 1983 there were 773 patients in our leprosy sanatorium. According to the Japanese criteria for activity of leprosy, more than 80% patients were clinically cured, but many of lepromatous patients still take dapsone due to prevention or fear about relapse for a long time. Average age of death and frequency of cancers were investigated to clarify the effect of long duration dapsone intake. The patients were classified as lepromatous type (L, including LL and BL) , tuberculoid type (T, including TT and BT), and others (BB and unknwon) based on the medical records.

In the beginning of '83, there were 531 (Male 347, Female 184) L type patients and 232 (M 97, F 135) T type patients. From 1983 to 1997, 157 L type patients and 95 T type patients were died. The average ages of death were L type Male 74.1± 10.0 , T type male 77.0± 10.0, L type female 77.1±9.8, T type female 83.0± 11.1. But the average age of death were not significantly different in the age-matched groups. Relative risk of cancer in L type patient was 1.40 (95% C.I. 0.75-2.53, Cox hazard model), but it is not statically significant. Numbers of female liver cancers and male gallbladder/bile duct cancers were higher than expected number of the whole Japanese cancer frequency. Average age of death of L type patients with cancer was 10.1 years lower than that of T type patients. Further investigation is needed to clarify the relation between the dapsone metabolism and liver, gallbladder cancers.

Number of patients died of cancers

	Male		Female	
	cases	expected No	cases	expected No
Stomach	9	10.1	4	6.7
Colon	4	3.9	6	4.1
Liver	4	5.0	6	2.4
Gallbladder, Bile duct	5	1.7	2	2.6
Pancreas	2	2.4	3	2.3

CL75

TWENTY FIVE LEPROSY PATIENTS WITH HISTOID LEPROMA

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This study analyzed 25 leprosy patients with histoid leproma (HL) in Shanghai from 1970 to 1997, and related references were reviewed. HL were more found in men and were seen in all age. One of 4 primary HL was proved to be resistant to DDS, and 7 HB in secondary were resistant to DDS and TB1 both, showing that occurrence of HL was related with resistant-bacilli.

Skin lesions of HL were polymorphous, nodules and plagues were commonly seen, and always occurred after diffuse infiltration lesions. The most common sites involved were face, neck, extremities or buttocks, but hand, foot, genitalia and mucus membrace were locations seldom invaded. HL in nerve was rarely seen.

Sensory loss of HL was ont severe, and some HL tickle or even too itch.

BI and MI values of HL patients were more higher than those of non-HL patients. Ratio of solid bacilli between HL and non-HLpatients was 49.14 to 1, and their difference was significant statisically.

HL was not easy to be differentiated from other dermatoses and related disorders due to not specific clinically and histopathologically. Final diagnosis could be made by routine skin smear examination with acid-fast staining.

CL76

LEPROSY AND PREGNANCY: A STUDY OF REACTIONAL STATES

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Leprosy in the State of Amazonas, Brazil, still represents an important health problem. In 1995, 1.464 new cases were registered, 36.5% were female of which 60.9% were of child-bearing age.

The objective was to study the clinical comportment of leprosy during pregnancy, taking into consideration that during this period hormonal and metabolic alterations occur and a reduction in resistance could lead to the appearance of reactional states. The study included 38 pregnant patients with leprosy and a control of group oh 50 patients with leprosy who were not pregnant or had no recent history of pregnancy.

In the group of pregnant patients, 50% had multibacillary forms and in the control group 44% had multibacillary forms.

In relation to the presence of reactional outbreaks in the group of pregnant patients there was a frequency of 53.3% cases and in the control group 54%. As to the type of reaction, in the study group isolated neuritis affected 28.7% of the cases and neuritis associated with type 1 lepra reaction in 23.8% with isolated neuritis.

Of the pregnant patients in reaction, 34.2% had reaction during their pregnancy and were already developing reaction in the period before their pregnancy and in 1 patient during puerperium.

In our study did not lead to an increase in outbreaks of reaction, but, reactions in this period are difficult to control and can cause an "at risk" pregnancy.

CL77

NASAL LESIONS ON HANSEN'S DISEASE: THERAPEUTIC AND PROFILATIC PROCEDURES. Moreira JS, Nery JAC, Aprigliano Filho F, Fabri L, Pantoja A, Diniz F and Ribeiro FC. Evandro Chagas Hospital, Leprosy Laboratory, Oswaldo Cruz Foundation, Av. Brasil, 4365 - Manguinhos, RJ - Brazil.

This study reports the follow up of 181 Hansen's patients from eprosy unit who were examined at Otorrinolaringology clinic FIOCRUZ. The most frequent manifestations where nasal obstruction (40%), epistaxis (37%), sinusitis (26.5%) infiltration (100%) and ulceration (23%) of the mucous membrane. Due one of the main manifestations of Hansen's Disease be vasculitis on the mucous membrane, the treatment should be topic anti-inflammatory drugs as corticosteroids or similar. In order to clarify which drug would be more indicated for treatment and profilaxis we have used Diproprionate of the Beclometasona (spray).
The results showed that deproprionato de beclometasona aquoso solution was the only drug that induces total regression of the lesions.
Therefore this is a drug of choice for treatment of nasal pathologies associated to Hansen's Disease, but meticulous evaluation of the all nasal pathologies is hand, and the use of vasoconstrictor drugs must be avoided due their side effects.

CL78

CLASSIFYING LEPROSY PATIENTS BY USING THE NUMBER OF SKIN LESIONS

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A retrospective study has been carried out in order to determine if the number of lesion could be used as a criteria for classifying leprosy patients before starting MDT treatment. 769 patient forms have been analyzed, (389 MB and 380 PB), 19.38% showing no lesion and 28.61% a single lesion. Validity was assessed by computing the relationship (A%) between the number of lesions (less or more than 5) and the skin smear examination (BI positive MB, BI negative PB), sensitivity (SE) and specificity (SP) of the number of lesions as compared to the patient classification. Agreement percentages was 75%. Sensitivities ranged from 62-73%, and specificities ranged from 75-84%. Patients with positive skin smear had a great number of skin lesion (more than 5 lesions) as compared to those being smear negative. These results suggest that, the number of lesion could be an useful tool in simplifying classification for prescribing leprosy treatment.

CL79

DESCRIPITIVE ANALYSIS OF A SERIES OF CASES WITH HIV *M. LEPRAE* CO-INFECTION TREATED IN THE LEPROSY OUT-PATIENT CLINIC. LABORATORY OF LEPROSY. Nery JAC, Galhardo MCG, Perisse ARS, Valentim A, Vieira LMM, Sampaio EP. Leprosy Laboratory and Evandro Chagas Hospital, Oswaldo Cruz Foundation, Av. Brasil, 4365 - Manguinhos, Rio de Janeiro - RJ, Brazil.

As the disease evolves in HIV-positive individuals, a variety of opportunistic infections may develop, some of which are directly related to deficiencies in the

cellular immune response. The potential effects of HIV infection on leprosy has been discussed by many authors, although the association between the two diseases remains uncertain.

In this study 19 co-infected leprosy x HIV positive patients are reported. 84.6% of whom showed AIDS. Some of these patients had first been diagnosed with leprosy and others became HIV-positive after contracting leprosy. Thirteen patients [9 (69.2%) PB and 4 (30.8%) MB] were treated and followed up after discharge. The analysis of the immunospecific response to *M. leprae* (lymphoproliferation test and interferon-gamma production) as well as analysis of the frequency of mononuclear cells in peripheral blood were evaluated in this study.

All patients received the WHO-recommended multidrug therapy regimen.

Of the 13 cases under treatment, 7 (53.8%) were men and 6 (46.2%) were women averaging 41.4 and 36.8 years of age, respectively. Nine (69.2%) patients were classified as paucibacillary (7BT, 2 pure neural leprosy) and 4 (30.8%) as multibacillary (3 BL; 1 LL). Five (38.5%) of the patients presented a lepromin-positive test (>5 mm). Eight (61,5%) presented reactional episodes (6 reversal reaction, 1 erythema nodosum leprosum and 1 neuritis). These patients were treated with thalidomide for ENL and corticosteroid for RR and neuritis. The multidrug therapy was equally effective in all 13 patients with clinical and bacteriological regression in all cases including the reactional episodes.

Only one patient did not make use of the antiretroviral drugs. Ten patients were discharged from MDT. Twenty-three percent of the patients eventually died due to HIV-related complications, and 3 remain in treatment.

The analyses of the in vitro response of PBMC (lymphoproliferation and gamma-interferon production) at diagnosis for both PB and MB patients was negative for *M. leprae*. Even so, among the five patients with reversal reaction, four presented a positive lymphoproliferation response (SI >2.0; Δcpm > 2000) during their reactional episodes. The analysis (by cell sorting) of the frequency of mononuclear cells in peripheral blood showed an inversion of the CD4/CD8 relationship in all cases.

CL80

MULTIBACILLARY LEPROSY AMONG THE 0 TO 14 YEARS OF AGE GROUP DATA GATHERED AT THE LEPROSY OUTPATIENT CLINIC OF THE OSWALDO CRUZ FOUNDATION (FIOCRUZ), RIO DE JANEIRO, RJ - BRAZIL

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Clinical and epidemiological studies carried out in patients dignosed with MB leprosy up to the age of 14 could be used as indicators of trends in the evolution of the disease in endemic countries like Brazil.

According to official data, 10% of the total number of cases detected in 1996 were in this same age group. In the hopes of contributing to a better understanding of the clinical and epidemiological characteristics of the disease in this particular age group, the results of 19 patients classified as BB, BL and LL (Ridley-Jopling are presented. The patients were treated in the Leprosy Outpatient Clinic with the MDT WHO regimen. At diagnosis, the forms, BI and grade of disability.

The frequency of occurrence and type of reactional manifestation were evaluated during the 24 doses of MDT.

The results of the sample studied suggested that no differences existed in the parameters evaluated among the patients of this age group when compared to the adult MB patients.

CL81

ERYTHEMA NODOSUM LEPROSUM WHIT LEUKEMOID REACTION.

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A 44 year old male with L.L.diagnoses in 1994 was admited to hospital beacause of lepra reactivation.He had been previously treated with MB for 2 years.Following reinitiation of triple therapy,he developed severe necrotic erythema nodosum leprosum,polyarthritis,renal involvement and a leukemoidrreaccion,which eventually re solved following treatment with thalidomide and prednisone.Leukemoid reaccion is an extremely infrecuent complication of type II lepra reaccions.The transiet nature of reaction, absence of hepatoesplenomegaly and high leucocyte alkaline phosphatase score allow differentiation of leukemoid reaction from leukemia.Increased serum levels of tumor necrosis factor alpha and other myeloid-stimulating cytokines might be involved in the pathophysiology of this reaction.

CL82

CK, CK-MB, LDH AND ISOCITRIC DEHYDROGENASES IN LEPROSY

Leprosy is a chronic disease where systemic involvement is reported during the course of disease. Throughout the spectrum some studies reported rare occurrence of cardiac problems in leprosy patients owing to the lowering of lipid profile. These people reported lowering cholesterol, immunoglobulins and total-lipid level and attributed this to the host dependence of the M.leprae. On the other hand reports were available showing increased levels of various enzymes like CPK, LDH and others.

In order to understand the actual conditions of heart of leprosy patients we initiated a project for studying lipid profile, lipoproteins various enzymes like CPK,CK-MB and LDH isocitrate dehydrogenase. These enzymes and their isoenzymes were analysed using various standard methods and electrophoretic techniques through the spectrum in comparison with the healthy controls. Interesting results were obtained indicating involvement of bone,apart from organs like liver, kidney and heart. Results will be presented and discussed.

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CL83

IS THE RESPONSE TO STEROIDS IN NEURITIS MAINTAINED IN THE LONG TERM?

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A cohort of 125 patients treated with Prednisolone for neuritis in an out-patient setting during 1990-93 were followed up for five years.

The aim of the study was to determine whether those patients who initially responded to steroids maintained this response over 5 years. Initial neurological response was monitored using Voluntary Muscle Testing (VMT). Long term outcomes were assessed by the VMT, numbers of further episodes of neuritis, development of motor deformities and ulceration. Preliminary data suggests that those patients who make a good initial response to steroids maintain this response.

CL84

PULMONARY TUBERCULOSIS AND TUBERCULOID LEPROSY

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A 17-year old white female patient born in Itumbiara, GO, and living in Ribeirão Preto, SP, Brazil, a student, reported the onset of fever 4 months before, hemoptoid sputum and loss of approximately 5 kg. Pulmonary tuberculosis was diagnosed and treatment with isoniazide + rifampicin (200 mg + 300 mg, 2 tablets/day) was started. Seven days later she started to present erythematous-infiltrated, papulous to nummular lesions located in the LL and UL, trunk, and face. Examination showed thermal, tactile and painful hypoesthesia in the skin lesions and thermal anesthesia in some. Based on a diagnostic hypothesis of reactional tuberculoid leprosy, a biopsy, the Mitsuda test and bacilloscopy were performed. The Mitsuda test was positive (20 mm), bacilloscopy was negative and histopathological examination showed tuberculoid granulomas preferentially located close to nerve fillets. Faraco staining did not reveal BAAR.
An MDT treatment schedule for paucibacillary disease was started and the skin lesions improved.
The patient was transferred to her town of origin and was lost to follow-up.
Reason for the presentation: Demonstrative. To report the association of two diseases whose course involves deficient cell immunity.

CL85

NECROTIZING ERYTHEMA NODOSUM AND THALIDOMIDE

Mirian Lane O.Rodrigues; Maria H. Takada; Ana Maria F. Roselino, Norma T. Foss.

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A 25-year old black female patient born and living in Ribeirão Preto, SP, Brazil, with a diagnosis of Virchow leprosy was on specific multidrug therapy for multibacillary disease since February 1994. After the 3rd dose, she started to present frequent episodes of erythema nodosum which were treated with prednisone (0.5 mg/kg/day) because the patient had not been submitted to tubal ligation. On the occasion of the administration of the 12th dose she presented anemia, jaundice and necrotizing erythema nodosum. Physical examination revealed a febrile, pale (++/4), jaundiced (++/4) patients with subcutaneous erythematous nodules most of which progressed to ulcers with purulent secretion, some of them being covered with necrotic scabs, located on the buttocks, LL and UL. Folic acid and ferrous sulfate were introduced and tests of hepatic and renal function, G6PD, Coombs test and others were requested. The patient, who had 2 healthy children, was submitted to tubal ligation at the beginning of April 1995. At the end of April 1995, thalidomide was introduced (100 mg at 12 hour intervals). The necrotizing erythema nodosum reaction was controlled with thalidomide, with marked regression of ulcers. The MDT treatment schedule was maintained. The patient presented further episodes of non-necrotizing erythema nodosum which responded well to the use of thalidomide.
Reason for the presentation: To emphasize the good therapeutic response to thalidomide in cases of necrotizing erithema nodosum.

CL86

INGUINAL GANGLIONIC REACTION IN VIRCHOW LEPROSY

Mirian Lane O. Rodrigues; Maria Paula V. Chiossi; Cristiana A. Sassamoto; Cacilda S. Souza; Renata Nahas; Darlene Arruda; Norma T. Foss

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Leprosy often presents clinical manifestations and reactional states differing from the usual pattern. We present here a case with extensive ganglion involvement as the major manifestation of the reactional state.
A 26-year old white male patient born and living in São Sebastião do Paraíso, MG, with a diagnosis of Virchow leprosy was on specific multidrug therapy for multibacillary disease. After the 3rd dose he started to present erythema nodosum and diffuse adenomegaly as well as neuritis and was treated with prednisone and thalidomide. At the time of the 16th dose he presented fever an exacerbation of the inguino-crural adenomegaly on the right and the onset of an erythematous plastron, local pain and an area of inflammation measuring about 7 cm in diameter. A diagnostic hypothesis of a reactional and differential state with avenereal lymphogranuloma was raised and a ganglion aspirate was obtained, which showed the presence of BAAR (3+); histopathological examination of the ganglion revealed necrotizing granulomatous lymphadenitis. The reaction was controlled with prednisone, 1 mg/kg,day, with a marked regression of adenitis.
The MDT schedule was maintained and no recurrence of acute adenitis has been observed thus far (21st dose) at any ganglion site.
Reason for the presentation: to emphasize the importance of leprosy as the differential diagnosis of acute adenitis in endemic regions.

CL87

LATE IMPROVEMENT IN CHRONIC CUTANEOUS LEISHMANIASIS CAN MIMIC LEPROMATOUS LESION OF LEPROSY IN PROVINCE OF KERMAN

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This study has been done on 796 patients affected by cutaneous Leishmaniasis, who have been found among 20695 new dermatologic outpatients from endemic zones of Kerman, from the year 1988 until 1996. Among them only 173 cases have shown more than 2 years delay in improvement of have lupuid recidivency after improvement. The skin lesions of this type of cutaneous Leishmaniasis mimic lepromatous leprosy. Typical findings of pathological cut section and or positive direct smears for Leishman bodies are known to be valuable especially in cases with non healed chronic cases of cutaneous Leishmaniasis.

CL88

LUCIO'S PHENOMENON: REPORT OF BRAZILIAN CASES

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A necrotizing skin lesion associated with diffuse non-nodular leprosy was described by Lucio and Alvarado in 1842. After the histopathological alterations were recognized, this reaction was called Lucio's phenomenon by Latapi and Zamora, in 1948. This is considered to be a type of leprosy reaction associated with necrosis of arterioles, whose endothelium is massively invaded by *M. leprae*. Lucio-Latapi Leprosy and Lucio's phenomenon, which correspond to the level of high susceptibility to the bacillus, are common in Mexico and Central America but infrequent in other parts of the world. In Brazil, despite the prevalence of the disease, few reports of Lucio's phenomenon are available.
We report here a clinical description and the evolution of four cases of Lucio's phenomenon observed in our service: four patients (three males and one female) with lepromatous leprosy characterized by a discrete erythematous-infiltrative process diffusely involving the face and extensive areas of the tegument, with absence of nodules, associated with coalescent purpuric lesions forming plaques and ulcers covered with necrotic tissue, which ascendingly and progressively spread from the distal to the proximal end of the upper and lower limbs. Histopathology revealed focal necrosis of the epidermis, in the superficial and deep dermis, a morphonuclear inflammatory infiltrate rich in foamy histiocytes grouped around skin adnexa, nerve fillets and blood vessels. There was necrosis of sweat glands as well as thrombosis of small arteries with a focal deposit of fibrinoid material on the wall. Large numbers of BAAR bacilli were present, forming globies in the histiocytes and endothelial cells. This set of histopathological alterations is comparable to vasculitis of the Lucio's phenomen on type in the diffuse non-nodular clinical picture of leprosy.

CL89

FIXED DRUG ERUPTION DUE TO RIFAMPIN

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Rifampin is a semisynthetic broad spectrum antibiotic widely used in the treatment of leprosy and tuberculosis. A number of side effects have been reported with Rifampin. However, cutaneous side effects due to Rifampin are rare. Though an urticarial form of fixed drug eruption has been described earlier, the classical form of fixed drug eruption due to Rifampin with residual hyperpigmentation has not been reported as yet. This is a report of a case of classical fixed drug eruption due to Rifampin occuring in a leprosy patient.

CL90

International Leprosy Congress 1998

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Abstract :

We are presenting a patient with unusual presentation of recurrent blistering eruption and ulcers on the acral region for a duration of 2 years before the diagnosis of leprosy was made.
A 63 year old female presented to us with a 1 year history of recurrent blisters and ulcers affecting the hands and feets which were slow healing. There was no history of trauma or injury. There was no documented neurological deficit. No other family members were affected. Skin biopsy revealed subepidermal bulla (may be secondary to porphyria cutanea tarda, epidermolysis bullosa or burn). Direct immunoflorescence and antoimmune markers were negative. Full blood count, urinalysis, ESR and porphyria screen were normal. One year after the initial presentation, she developed new erythematous plaques on the face,arm and upper back and careful neurological examination revealed predominant sensory perpherial neuropathy. There was no nerve thickening. Skin-slit smear were reported as acid fast bacilli --the bacterial index (BI) being 4+ and morphologic index (MI) <1%. The patient was treated with multidrug therapy consisting of dapsone, rifampicin and clofazimine as recommended by WHO for multibacillary cases. The patient responded clinically on subsequent follow up with no recurrence of the blisters.

CL91

LEPROSY IN HIV+ PATIENTS: REPORT OF TWO CASES

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Leprosy is a chronic and insidious disease, which clinical presentation is well described. When the first cases of AIDS (Acquired Immunodeficiency Syndrome) were described, it was supposed that the leprosy incidence would increase with serious forms in these patients, as it has been reported in tuberculosis and other mycobacteriosis. We describe two cases of leprosy in HIV+ (Human immunodeficiency virus) patients.
Case 1: An 27-year-old white woman, CDC IVC group, had erythematous, annular, anaesthetic plaque, with a central superficial erosion. Biopsy of the border revealed tuberculous granuloma with edema. The Mitsuda's reaction was 11mm and the slit-skin smear was negative for acid-fast bacilli (AFB). CD4+ = 174 cell/mm^3.
Case 2: An 27-year-old white man, CDC II group, presented multiple erythematous-violaceous plaques on the thighs, legs and arms. Histological study revealed an infiltrate of foamy macrophages with the presence of AFB. The Mitsuda's reaction was 3mm. CD4+= 207 cell/mm^3.
In the first case, we could observe that even in a cellular immunocompromised AIDS patient a specific cellular immunity against *M. leprae* could be preserved. This patient developed a typical tuberculous leprosy. The second case was characterized by a polymorphous clinical presentation, which has challenged the leprosy classification.

CL92

CHARACTERISTICS OF PATIENTS IN TREATMENT IN THE LEPROSY OUTPATIENT CLINIC OF THE OSWALDO CRUZ FOUNDATION (FIOCRUZ), RIO DE JANEIRO, RJ - BRAZIL. Vieira LMM, Nery JAC, Ferreira MLC, Matos HJ, Gallo MEN. Leprosy Laboratory, Oswaldo Cruz Foundation, Av. Brasil, 4365 - Manguinhos, Rio de Janeiro - RJ, Brazil.

The National Leprosy Reference Centers in Brazil continually carry out clinical and laboratory studies whose results has been of great benefit for the control of leprosy in Brazil. With the purpose of providing detailed clinical, epidemiological, and laboratory data on the patients treated in the Leprosy Outpatient Clinic of the Oswaldo Cruz Foundation in Rio de Janeiro, the results obtained from 1, 392 patients who were treated between Septembeer 1986 and December 1997 are presented. The data were evaluated as follows:
1. Detection procedure
2. Case distribution according to sex and age
3. Distribution according to clinical form of the disease (Ridley-Jopling)
4. BI classification (Ridley scale) and
5. Treatment compliance.

50.9% of the patients had been referred to the Clinic after being diagnosed in the public health care system. In 17.5% of the cases, diagnosis was achieved by way of household contacts. And 59.2% of the total number of patients were men. The age group comprising those between 20 and 39 years of age was predominant (42.1%). Classification according to clinical form was as follows: I (12.2%); TT (0.7%); BT (30.4%); BB (110.4%); BL (21.2%); and LL (27.2%) - 3.2% were not classified.
Among the MB cases, 20.9% presented BI > 4 at diagnosis; and 23.4% presented BI > 3 at the end of treatment. The degree of incapacity was > 1 in 38.1% of the cases at diagnosis and in 32.2% at discharge.
The MDT/WHO regimen was administered in 87% of the cases, of which 81% completed the regular treatment. The default rate was 9.4%. The results observed coincide with those found in National Program, except for the high detection rate among household contacts in this study as well as the default rate, which was significantly lower among the patients in our Clinic.

CL93

AN ANALYSIS OF SENEORY LOSS IN 152 LEPROSY WITH DISABLED HANDS AND FEET

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Loss of sensation is a very destructive complication of leprosy frequently resulting in deformities and disabilities. 152 randomly selected cases with disabled hands and feet were analyzed. The results showed that the frequency of sensory loss in MB cases was 45.59% in hand and 78.43% in foot respectively which was more severe than that of 15.80% and 42.6% respectively in PB patients. On the other hand, the frequency of sensory loss in different nerves was 81.25% (tibial nerve), 56.24% (ulnar nerve) and 44.08% (median nerve). The results also revealed that the presence of 40.90% of sensation loss in the palm of hand was higher than that of 30.66% in finger cushion. Similarly, the presence of 71.07% of sensation loss in the site of head of metatarsal bone was higher than that of 59.21% in the heel. Moreover, the sensory loss in hands and feet were bilateral symmetrical. The authors emphasized the importance of regular sensation test in leprosy patients, espacially in MB cases.

CL94

OBSERVATION OF THE EFFECTS IN 24 CASES OF SILENT NEURITIS TREATED WITH PREDNISONE

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Twenty four cases of silent neuritis were diagnosed from 1990 through 1993. Totally 66 peripheral nerves involved. Prednisone tablets were self administered at home for six months after diagnosis. In all 24 cases of patients with 66 damaged nerves, functions recovered completely in 19 cases (79.1%) and 54 nerves (81.8%), and partly recovered in 4 cases(16.6%) and 16(16.6%) nerves. Only one case with one damaged nerve remained unchanged. No noticeable side effects took place. The shorter the time of nerve damaged, the better the effects of treatment were. For the leprosy control programme to be more fruitful, to improve the diagnosis and treatment level of leprosy workers and basic health workers in preventing early nerve damage, making its diagnosis in time and treating such patients with prednisone at patients' home are very important measures to be carried out.