

Subcellular localization of dapsone and Rifampicin was carried out in skin and nerve lesions obtained from MDT treated cases of leprosy using an immunocytochemical technique. Intracellular localization of drugs specifically in macrophages and Schwann cells was carried out with polyclonal (rabbit) anti-DDS and Anti-Rifampicin antibodies in an indirect immunoperoxidase assay.

Our study records both intra and extracellular staining in the skin and nerve lesions obtained from MDT treated MB and PB cases of leprosy. All the nerves under investigation had moderate to severe pathology; hence a broken barrier leading to free diffusion of the drug. A graded difference was seen in staining intensity in relation to integrity and cellularity of the nerve lesion. It was also noted that the drug (metabolite) persists over a long period of time (>6 mths) after stopping treatment particularly in nerves of MB patients.

CH82

INVESTIGATION OF LYMPHOEDEMA AS AN ADVERSE EFFECT OF CLOFAZIMINE THERAPY IN LEPROSY

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Pedal edema as an adverse effect of clofazimine therapy in leprosy was first described in 1890. 140 patients who were on clofazimine for the treatment of lepromatous leprosy were examined. 19 of these patients were observed to have significant pedal edema on one or both feet after the clofazimine therapy was started.

Systemic causes of pedal edema were ruled out in these patients on the basis of clinical and laboratory parameters.

Lymphangiography was done in ten of these patients. Lymphangiographic evaluation showed lymphatic block, lymph node enlargement, nodal filling defects and collateral lymphatic channel circulation.

Lymphangiographic evaluation on patients with tuberculoid leprosy showed normal lymphatic drainage.

The blockade of lymphatic vessels seems to be the probable mechanism of pedal edema in the first group of patients.

The kinetics of clofazimine and the role of the lymphatic drainage in these patients will be discussed.

CLINICAL

CLI

PREDNISOLONE TREATMENT IN LONGER STANDING SENSATION LOSS.

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Three patients were seen with late reactions involving the nerves of the hands. Prednisolone treatment was given and besides the recovery of the nerve function in the hands, they also regained most of the sensation in their feet which was lost for at least 4 to 8 years (ballpoint method). Since then we treated all new and some old patients with nerve function loss, when willing with prednisolone, regardless the reported duration of the loss. Out of 11 patients thus treated, who had reported loss for 1 year or longer, 3 did not improve or improved only slightly, 4 improved moderately and 4 made good improvement. In general sensation of the feet improved more than sensation of the hands. Muscle function in general did not improve considerably. Four patients who had sensation loss on detection and could not be treated with prednisolone did not improve. We believe that although these results need verification, there is an indication for more extensive use of prednisolone in longer standing sensation loss.

CL2

ANALYSIS OF POTENTIAL PROGNOSTIC FACTORS IN PAUCIBACILLARY LEPROSY

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With the multidrug treatment (MDT) the overall results have been satisfactory. However, the problems of residual activity, worsening of residual activity, late reactions/relapses after the stoppage of treatment specially in case of fixed duration of 6 month regimen have been reported by several investigators. In this study, the data of over 600 cases of paucibacillary leprosy (as defined by the WHO criteria of 1982) has been analysed using multivariate statistical techniques to assess the relationship of the factors like the type and duration of treatment regimen, clinical type of leprosy, number of lesions, lepromin status, clinical type of leprosy, number of lesions, lepromin status, bacterial positivity with parameters like inactivity rates at different treatment intervals, clinical course of residual persisting activity, late reactions and relapses. These patients were treated with WHO recommended regimen of 6 month duration, modified 12 month regimens as well as Prothionamide containing regimen reported by us earlier. It was observed that the treatment duration as well as regimen had statistically significant relationship with these assessment parameters. The clinical type, immunological status, number of lesions and occasional bacteriological positivity did not have close association as reported in the dapsone monotherapy days and in some of the studies later. The significance of these findings need to be debated and investigated by further studies.

CL3

A "QUICK" VMT AND ST FOR THE HANDS COMPARED TO A STANDARD VMT AND ST.

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A "quick" Voluntary Muscle Test (VMT) and Sensory Test (ST) for the ulnar and median nerves has been used by the author in field programmes; the "quick" VMT compares left and right muscle strength for the ulnar and median

nerves while the "quick" ST uses light moving touch with the examiner's finger, asking the patient to compare sensation between areas innervated by the ulnar and the median nerves. In this study the quick tests have been compared to a more standard VMT and the ST with a ballpoint.

225 leprosy patients with WHO disability grading 0 & 1 attending the out-patient clinic of the Sitanala leprosy hospital have been tested with the "quick" VMT and ST by an experienced leprosy doctor and then independently with the standard VMT and ST by one of 3 physiotherapists from the leprosy hospital. The results show that if the standard tests are true gold standards, the sensitivity of the quick test is poor (between 40-74%); but when the results of VMT and ST are correlated, they seem to indicate that the quick tests may in fact be more sensitive than the standard tests and they question the standard tests as gold standards.

CL4

RISK OF NEURITIS AMONG MULTIBACILLARY PATIENTS DURING MULTIDRUG THERAPY

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This non concurrent cohort study was done to estimate the risk of developing neuritis among Multibacillary patients during MDT. The cohort in the study consisted of 330 fresh Multibacillary cases without deformity or neuritis registered during 1984-1990 at The Leprosy Control Unit, Philadelphia Leprosy Hospital, Salur, Andhra Pradesh, South India. They received treatment ranging from 2 to 6 years.

All patients were assessed for evidence of neuritis during clinic visits. The data was subjected to survival analysis.

The risk of developing neuritis during treatment was 17.6%.

Adult Males had 3 times the risk of developing neuritis compared with Adult Females.

Patients with 4 or more thickened trunk nerves at detection had twice the risk of neuritis as compared with patients with less than 3 thickened nerves ($P < 0.01$).

The risk of developing neuritis was 30% greater in patients smear positive at detection as compared to those who were smear negative at detection.

CL5

INCIDENCE OF SPECIAL EVENTS AMONG PATIENTS WITH MULTI-BACILLARY LEPROSY DURING SURVEILLANCE

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During the course of surveillance we encountered interesting events among MB leprosy patients after completion of W.H.O. recommended multi drug therapy.

1) "CHANCE" SMEAR POSITIVITY: When a clinically inactive and bacteriologically negative leprosy patient (RFT) is found to be smear positive, it causes great anxiety to the physician, and the patient as well. 2.1% of patients exhibited this kind of phenomenon. Subsequent examinations turned out to be uneventful.

2) LATE LEPRO REACTION: 0.9% of MB patients on surveillance revealed evidence of lepra reactions. These manifestations responded to steroid therapy (without specific chemotherapy for leprosy).

Most of these events tend to occur during first three years of surveillance. The risk of such events, and their management is discussed.

This study is supported by UNDP/WORLD BANK/WHO SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES.

CL6

TESTICULAR INSUFFICIENCY IN MULTIBACILLARY HANSEN'S DISEASE--A FIVE YEAR FOLLOW-UP STUDY

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In 1988, we reported a study of testicular function in 74 men with BB, BL or LL Hansen's disease. We reported that 37.2% (16 of 43) of those with LL disease had a low serum testosterone level and elevated serum levels of Follicle Stimulating Hormone (FSH) and/or Luteinizing Hormone (LH). Similar results were noted in 12.5% (3 of 24) men with BL disease and 14.3% (1 of 7) men with BB disease. We showed that this loss of testicular function was correlated with long-standing Hansen's disease, was not associated with immunologic Hansen's disease reactions, and was strongly associated with clinical symptoms of androgen deficiency. In this study, we present a longitudinal five year follow-up of men with multibacillary (Jopling-Ridley BB, BL, LL) Hansen's disease. Serum levels of testosterone, FSH and LH were measured approximately five years after the previous measurements. The data were analyzed to assess the number of patients who developed testicular insufficiency during the period of observation. Clinical characteristics of Hansen's disease, including antimicrobial therapy and immunologic reactions, were analyzed and compared to those cases who did not develop this endocrine problem.

CL7

PARALYSIS OF FACIAL MUSCLES IN LAGOPHTHALMOS

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In outpatients in eastern Nepal we tested the hypothesis based on clinical impression that in every clinically significant lagophthalmos also other facial muscles are involved. 46 of the 57 (81%) examined patients with lagophthalmos (mean duration 23.8 months) had involvement of at least one other facial muscle group. In patients with a gap at mild closure of 5 mm or more 27/30 (90%) had involvement of an other muscle group. In LL patients there is symmetrical, 'patchy' involvement of the facial muscles. In BT+ the ipsilateral muscles are more often involved than the contralateral muscles which is the pattern of involvement of a nerve trunk. We found that in lagophthalmos patients the upper and lower facial muscles are affected in the same proportion so that on clinical grounds we did not find support for the hypothesis that the superficial course of the facial nerve over the zygomatic bone is decisive for the pattern of facial paralysis in leprosy. We found only one patient with bilateral anaesthetic cornea and noted that the type of Bell's phenomenon and the way of

blinking are important for the functional protection of the eye in lagophthalmos. Early detection and therapy are essential in lagophthalmos to save the eye.

CL8

CLINICALLY ATYPICAL RELAPSES IN MULTIBACILLARY PATIENTS

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During the regular and long-term follow-up of multi-bacillary patients included in trials for different combined treatments, we diagnosed 150 relapses.

This permit us to observe lot of cases clinically atypical because lesions are very mild or because they do not seem active leprosy.

Photographs presented here may incite clinicians in charge of follow-up of patients, particularly after therapeutic trials, to examine patients carefully.

ference were greatest in NLK and least in LLK, but at 2 years LLK had the greatest growth velocity. 25/149 (17%) died before Phase 4 (LLK 24%, BLK 14%, PBK 15%, NLK 14%). Mean heights/weights at Phases 2 and 3 were 90cm/12.7kg and 113.7cm/20.1kg with no significant differences between sexes or groups of children aged 3y 7m and 7y 10m respectively. At Phase 4, mean age 13.9y, sexual development was more advanced in girls than boys and NLK > PBK > MBK. NLK weighed significantly more (girls 46.1kg, boys 36.4kg) than MBK (girls 36.8kg, boys 33.7kg). NLK (boys) were significantly taller (149cm) than MBK (136.9cm). Triceps skinfold, arm and head circumference were 7.0mm, 19.6cm, 53.6cm and 5.2mm, 19.2cm, 53.8cm for girls and boys respectively. Medical records showed hospital treatment for infections: intestinal worms /parasites 99%; respiratory 50%; ear/otitis media - MBK 26%, PBK 20%, NLK 20%; eyes all infections /trachoma - MBK 70%/37%, PBK 52%/12%, NLK 25%/0; skin all infections/scabies - MBK 67%/54%, PBK 80%/44%, NLK 75%/45%.

CL9

LEPROSY IN CHILDREN OF MOTHERS WITH LEPROSY AND HEALTHY CONTROLS STUDIED PROSPECTIVELY FROM BIRTH.

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149 children of mothers with leprosy (MB and PB) and healthy mothers (NL) living in the same environment (80MB, 40PB, 29NL) were studied from birth up to 2 years of age (Phase 1); 89 children (mothers: 49MB, 25PB, 15NL) were reassessed at age 3-4 years (Phase 2); 86 children (mothers: 48MB, 23PB, 15NL) were reassessed at age 7-8 years (Phase 3); and 99 children (mothers: 54MB, 25PB, 20NL) were reassessed at puberty aged 13 1/2-15 1/2 years (phase 4). 3 children born to MB mothers had indeterminate leprosy by the age of 2 years; 1 child (MB mother) had indeterminate leprosy at age 4; 1 child (MB mother) had indeterminate leprosy and 3 others had enlarged nerves by age 8; 15 children examined at puberty were found to have early leprosy, indeterminate (14), BT (1). At puberty 71 had a history of skin disease, 41 had clinical evidence of skin disease. Clinical findings were: 27 had no clinical signs of leprosy; 1 had skin lesions only; 28 had (slightly) enlarged nerves only; 31 had anaesthetic macules with easily palpable/slightly enlarged nerves (14 diagnosed as having early leprosy, 1 had indeterminate leprosy in Phase 3); 9 had macules without sensory loss and easily palpable/slightly enlarged nerves (1 had indeterminate leprosy in Phase 1); 1 had flattened nodules and slightly enlarged nerves (diagnosed as early leprosy); and 1 had blotchy hypopigmentation with slightly enlarged nerves. Leprosy status of the mothers of these children during pregnancy and/or lactation was: 11 active leprosy; 2 quiescent MB leprosy; 2 PB "cured"; 3 healthy controls - 2 married to cured BT patients, 1 had a non-leprous husband.

CL10

GROWTH AND DEVELOPMENT OF CHILDREN OF MOTHERS WITH LEPROSY AND HEALTHY CONTROLS STUDIED PROSPECTIVELY FROM BIRTH TO PUBERTY

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149 children (K) of mothers with leprosy (MB and PB) and healthy mothers (NL) living in the same environment (80MBK, 40PBK, 29NLK) were studied from birth up to 2 years of age (Phase 1). Reassessments were as follows: 89 children (49MBK, 25PBK, 15NLK) at age 3-4 years (Phase 2); 86 children (48MBK, 23PBK, 15NLK) at age 7-8 years (Phase 3); and 99 children (54MBK, 25PBK, 20NLK) at puberty aged 12-15 years (Phase 4). At birth and 2 years weight, length and head circum-

CL11

PREGNANCY IS A RISK FACTOR FOR RELAPSE AND NEW NERVE DAMAGE EVEN AFTER MDT

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108 women, 87 with leprosy and 21 healthy controls, studied prospectively during pregnancy and lactation (1975-78), were reviewed with their teenage children (1990). The leprosy patients deemed "cured" had been released from treatment (RFT): 49 DDS/RFT, 33 MDT/MB/RFT, 2 MDT/PB/RFT, 3 clofazimine/RFT (DDS resistant), (4 had incomplete records). Of 87 mothers with leprosy 68% had new nerve damage following RFT, 36% had neuritis with new sensory or motor loss; 41% had stocking and glove anaesthesia (not confined to MB patients), and 6% had tender nerves. 48% patients had their new post-MDT RFT nerve damage in association with pregnancy. 45% postpartum: 82% episodes appeared to be "silent" neuritis. In addition 9% relapsed with new leprosy, 6% post partum, and 14% healthy controls developed new leprosy. These findings contrast with those at an interim assessment in 1984 when 76 mothers with leprosy had just stopped DDS or had just started MDT/MB: 47% "improved", 45% "no change", only 8% "worse". While BL patients treated with DDS were most at risk, all MB patients whether BI positive or negative at start of MDT treatment had a high risk of late nerve damage. Even among those recorded as having "No problem" a significant percentage had increased neuropathic destruction of hands and feet, some requiring surgery. This cohort review shows that nerve damage occurs after RFT even in MDT patients, especially in relation to childbirth. Most of the women in the study are still of child bearing age and could be expected to deteriorate further with subsequent pregnancies.

CL12

NERVE FUNCTION ASSESSMENT IN LEPROSY - COMPARISON OF VARIOUS CLINICAL METHODS

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In order to determine the clinical usefulness of various sensibility tests that were not commonly used at our hospital, an extended nerve function assessment (NFA) was done on 50 in- and out patients with an established leprosy diagnosis (100 hands and feet). The NFA consisted of Semmes-Weinstein Monofilament Testing (SWMT), Moving 2-Point Discrimination (M2PD), Pin Prick (PP), Position Sense (PS), Vibration Sense (VS) and Voluntary Muscle Testing (VMT). In addition the SWMT was performed on 637 hands and 634 feet of 'field patients' in order to get a better idea of the prevalence of sensory impairment as measured with the

SWMT. As the SWMT has been shown to be a sensitive test of peripheral nerve function, the other tests were compared with the SWMT. Results are reported separately for the ulnar, median and posterior tibial nerve. Test sites were the pulp of the distal phalanx of the index finger, little finger and big toe. Correlation between the SWMT and each of the other tests proved statistically significant; the closest correlations were between the SWMT, M2PD and PP for both ulnar and median nerves ($r > 0.7$, F test > 100 , $p < 0.0001$). In comparing SWMT with VMT results, the best correlation was found between SWMT and abductor pollicis brevis for the median nerve ($r = 0.70$, $p < 0.0001$) and SWMT and abductor digiti minimi for the ulnar nerve ($r = 0.77$, $p < 0.0001$). It is argued that the first tests to show nerve function impairment (NFI) are the M2PD and the SWMT. VS and PS were also absent in a significant proportion of patients. Arguments are presented that this may indicate advanced NFI. Results are compared with other data currently available.

CL13

EXTENSIVE PROGRESSIVE NEW LESIONS IN BI CASE WHILE ON REGULAR MB-MDT

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Progressive active leprosy in the form of appearance of many lesions without clinically evident Type-I reaction under MB-MDT in skin smear negative cases are seldom seen.

A case of BI type of Hansen's, with skin smear negative and multiple skin lesions was put on MB-MDT and given regularly supervised doses of MB-MDT. This case developed multiple progressive new lesions some large sized after fifth dose of MB-MDT. There was no evidence of Type-I reaction clinically in the old lesions, no nerve tenderness, new lesions looked active and had less Lamprene induced color and ichthyosis indicating that they have appeared recently and also that patient has been consuming Lamprene regularly.

Urine/Serum for DDS, skin smear, Biopsy, CBP, VMT/SI, Chest X-ray and careful charting was done. Serial biopsies, immunological tests like ELISA - for screening antibody responses (IgG & IgM) to various M.Leptrae specific antigens and lymphocyte proliferative assays to measure the T-cell responses against the various antigens of M.Leptrae and T helper/T-suppressor ratios will be estimated, other tests are also planned. Resistance to MB-MDT/Type-I reaction was considered. (PB - Pri.DDS. Resistance reported in 1984 at Hyderabad by Pearson.)

The outcome of the clinical histopathological and immunological follow up will be discussed along with its clinical implication.

CL14

CLINICAL, ELECTROPHYSIOLOGICAL AND BACTERIOLOGICAL EVALUATION OF NERVE DAMAGE AFTER REGULAR MDT IN LEPROSY

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Regular and complete MDT may not ensure cessation of nerve involvement in leprosy. Although the antigenic load may fall steadily after stopping MDT, reversal reactions are known to occur with consequent deterioration of nerve function. While recovery of nerve damage may be evident in a large proportion of cases, relapses may occur in a few.

This study of 16 cases each of multi and paucibacillary leprosy regularly treated with WHO recommended MDT attempts to correlate clinical, electrophysiological and bacteriological observations recorded at periodic intervals following stoppage of MDT. The results are discussed with a view to identify pointers indicating effectiveness of MDT in the recovery/deterioration of nerve damage in leprosy.

CL15

ONSET OF LEPROSY IN ADOLESCENCE CARRIES HIGHEST RISK OF LATER ENL

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Because studies of the immuno-pathogenesis of Type II (ENL) reactions in leprosy have been inconclusive, we re-examined the basic epidemiology of this reaction to try to identify new avenues for research into its cause(s) and mechanisms.

A cohort of 176 new, untreated patients, admitted to the McKean Rehabilitation Institute from Sept. 1984 - Dec. 1989, was followed prospectively in a study of the incidence and recurrence of reactions. Of this group, 118 were lepromatous (LL-BL); 14 of these (12%) had ENL on first admission (before treatment), 30 (25%) developed ENL during the period of follow-up, a total of 44 patients with ENL (37%). Five of these also had either a Type I reaction or reactive neuritis during follow-up.

Patients whose age of onset of leprosy (by history) was in the second decade had the highest incidence of ENL (12/17=71%) ($X^2=5.3$, $p < 0.025$), with a steady decline among patients whose age of onset of leprosy was in the third through sixth decades. None of the patients whose age of leprosy was over 60 years developed ENL. The age of the patient at the time of the first episode of ENL was not correlated with the development of ENL (r approx = 0). Neither the duration of leprosy before diagnosis nor the treatment duration or regimen were significant factors in this study.

The finding that the onset of leprosy during adolescence carries the highest risk of ENL, often after an interval of several years, suggests that the factors responsible require substantial time to develop and that they may be most highly inducible around the time of puberty. The basis for these observations is not known but they suggest that maturation and senescence of human immunity, and the relationship between the immune and endocrine systems, may be areas for further study in leprosy.

CL16

LOCALISED LEPROMATOUS LEPROSY AND ITS RESPONSE TO CHEMO-IMMUNOTHERAPY.

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A 12-year old boy presented with three lesions: one each on both forearms and the third on the left leg. He was classified initially as borderline tuberculoid (BT) leprosy. Slit-skin smears and histopathology from the lesions however proved the diagnosis to be lepromatous leprosy (with BI 6+). The initial lepromin was negative. The patient was put on chemo-immunotherapy (standard multidrug therapy and immunotherapy with *Mycobacterium w* vaccine). Investigations after one year (15 months) of MDT and three doses of vaccine, showed a remarkable fall in the bacterial index (BI) from 6 to 0 in the lesions, a lepromin positivity of 5mm and a histological upgrading from LL to BT. Immunological

studies done at 15 months revealed a good LTT response and high levels of cytokines specifically IL-2 and IFN- γ . This report presents an LL patient with disease limited to a few sites. It stresses the importance of slit-smear and biopsy in all patients of leprosy as well as highlights the upgrading observed on administration of chemo-immunotherapy.

CL17

SENSIBILITY OF SKIN SMEARS IN ONE HUNDRED CASES OF MULTIBACILLARY LEPROSY

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In order to establish the sensibility of skin smears in multibacillary leprosy (lepromatous - or borderline) it was reviewed one hundred new cases identified between 1976 and 1992 in a specialized outpatient unit of State Secretary of Health, Rio Grande do Sul, Brasil.

The diagnosis was made in all cases by means of clinical examination and biopsy, with the presence of acid fast bacilli in tissue specimens; simultaneously direct smears were collected from four sites, namely, two ear lobes, elbow and lesion.

In 33 cases the smears were negative in all sites, thus revealing a 67% sensibility ($\alpha = 0.05$ CI 57.8-76.2%) for the detection of multibacillary leprosy.

The Mitsuda lepromin test was done in smear-negative cases, with 91.3% of negative or doubtful reactions, showing the value of this additional criteria in terms of classification and treatment of multibacillary leprosy.

CL18

INVESTIGATION OF PATIENTS WITH LONGSTANDING HIGH LEVELS OF ANTI-PHENOLIC-GLYCOLIPID I AFTER RELEASE FROM TREATMENT

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Antibody levels to phenolic glycolipid I (PGLI) are supposed to be related to the bacterial load of the patient. Also, rising antibody levels after release from treatment (RFT) may be indicative for a relapse.

In a follow-up study 9 multibacillary (MB) patients with a high anti-PGLI level persisting for more than 5 years after RFT were examined for a possible relapse. Six patients were examined two times with 2 years intervals; 3 patients were examined once. Mean time after RFT was 8 years (range 5 - 10 years). Anti-PGLI was measured according to standard WHO-protocol. Mean level at the time of examination was 0.939 (range 0.416 - 1.494). On clinical examinations no signs of relapses were found. Skin biopsies were taken besides scars of previous treatment-follow-up biopsies; skin smears were taken from both earlobes, elbow and nates and stained with Fit-Faraco-Wade staining: in all samples no acid-fast material was found. At the more recent examinations nose swabs were taken, on which a polymerase chain reaction (PCR) based on the *M. leprae* specific sequence of the gene encoding for 36 kD antigen, was performed. In 2 of the 7 investigated samples a positive signal was found; in 2 patients at 9 respectively 10 years after RFT. There seemed to be no relation between anti-PGLI level and PCR-positivity. It appears that there is a group of patients

with longstanding high anti-PGLI levels after RFT who show no signs of relapse. As PCR from nose swabs remain positive in some cases its value in detecting relapses may only be by longitudinal examinations.

CL19

LIQUEFYING NODULAR PANICULITIS CAUSED BY MYCOBACTERIUM LEPRAE:

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Liquefying nodular panniculitis (LNP) is a rare condition described by Shaffer in 1938. Its etiology has not been clarified yet. The disease is characterized by multiple erythematous subcutaneous nodes that undergoes liquefaction and consequent discharge of an oily liquid. The disease develops to hypopigmented, atrophic and depressed scars due to necrosis of subcutaneous fat. The authors report a case of a Wirchow type leprosy with atypical features and clinical characteristics of LNP with 30 years of evolution.

CL20

THALIDOMIDE -- A CLINICAL STUDY OF 33 CASES OF TYPE II LEPRO REACTION.

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Thalidomide is N-phthalyl-glutamic-acid-imide, a mild sedative, causing two serious side effects - Neuritic symptoms and characteristic foetal anomalies, for which it was withdrawn from the market in 1961. It is indicated in Type II Lepra Reaction.

This study consists of 33 patients, all males, suffering from repeated Type II Lepra Reaction and treated with Thalidomide. All the patients responded extremely well to Thalidomide with minimal side effects. Cases were selected carefully due to limited supply and difficulty in getting the drug.

Considering the factors such as Recurrent Reaction, Steroid dependency, side effects of steroids, other associated infections like Pulmonary Tuberculosis, Strongyloidiasis, Cardiac disease etc., the patients were selected for Thalidomide. With the help of competent staff and careful selection of cases, morbidity due to Type II Lepra Reaction can be considerably reduced.

The paper will be discussed in detail at the time of presentation.

CL21

NATURAL HISTORY AND CLINICAL FEATURES OF REVERSAL REACTION IN HYDERABAD, INDIA

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A retrospective survey of the notes of all patients attending Dhoolpet Leprosy Research Centre during 1985 was done to establish the frequency, timing and clinical features of Reversal (Type 1) reactions. 494 case notes were examined and clinical evidence of a reversal reaction was found in 44 cases (10.9%). Reactions were commonest in borderline patients with 11.4% and 14.8% of BT and BL patients developing reactions. Presentation in reaction was common with 41.3% of patients having signs of reaction at the time of diagnosis. 43.1% of patients had only skin lesions, 22.7% had both skin lesions and neuritis whilst 31.8% had only neuritis. The ulnar nerve was the most commonly involved nerve. Skin reactions were commonest in the first month of treatment, neurological reactions were commonest in the first six months of treatment. However late reactions may occur up to 7 years after the start of treatment. Recurrent reactions occurred in 30% of patients and may be frequent. Steroid treatment produced improvement of both skin lesions and neuritis, but improvement occurred in only 50% of neuritic episodes. This study raises several practical points for clinicians working with leprosy patients.

CL22

FACTORS AFFECTING RISK OF TYPE I REACTION AMONG MULTIBACILLARY PATIENTS

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Availability of information on factors associated with risk of Type I reaction should facilitate designing a high risk approach in the care of individuals with Hansen's disease. With this in view, a historical cohort study was carried out on fresh multibacillary cases initiated to MDT since 1985 at the Leprosy Control Unit of Christian Medical College, Vellore, India. 633 of them had no evidence of type I reaction or visible deformities at start. Risk of reaction was calculated among them using survival analysis and the adjusted Relative Risks (RR) were computed using multivariate techniques.

The overall risk of reaction during the first and 2nd years were 54/1000 and 19/1000 respectively. The cumulative risk of reaction by the end of 6th year was 106 per 1000. Presence of thickened nerves at registration (RR = 4), BI positivity (RR = 2) and palmo-plantar anaesthesia (RR = 2.4) were associated with risk of reaction. The probability of reaction increased with number of patches. Individuals aged less than 40 had greater risk of reaction when compared with those aged more than 40. 18.6% the patients who had reaction finally developed visible deformities.

CL23

REACTIONS IMMUNOLOGIQUES OBSERVEES A L'INSTITUT CARDINAL LEGER PENDANT UNE PERIODE DE 8 ANS.

Claude A. Leveille, Nicole Beliard, Gysette Blanc,
Real Charlebois, Marlene Dambreville,
Florence Foucauld, Florence Desvarieux, Claude Pean.

Institut Cardinal Leger contre la lepre (HAITI).

Sur une population de 720 patients enregistrés, 55 ont présenté un état réactionnel:

35 érythèmes noueux lépreux
23 réactions inverses

- 1) la répartition des états réactionnels selon l'âge, le sexe et le type clinique
- 2) les variables telles que la période moyenne d'apparition des symptômes, le rythme des poussées, l'influence et la durée de l'hospitalisation et le traitement.

CL24

CLINICAL STUDY OF LEPRO REACTIONS IN 123 CASES TREATED BY MDT.

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An attempt was made to investigate the incidence & behaviour of lep. reactions in a group of 123 cases treated during the last few years with MDT. Classification of the cases is as follows: T.T. 8 (6.5%), B.T. 47 (38.2%), B.L. 21 (17%), L.L. 47 (38.2%).

47 Lepra reaction cases were recorded, of which 20 belong to type one & 27 to type two. Of the first group only 2 cases suffered from 2 episodes of reversal reaction, while 12 of the second group had more than one attack of type 2 reaction.

Four cases with type 2 R. developed severe bullous pustular lesions with toxæmia & tendency to relapse while under M.D.T.A. mild chronic recurrent type of E.N. lesions occurred in 4 cases. Crops of few small subcutaneous nodules appear 2-4 days after the monthly dose of Rifampicin, & clear up in 10 to 14 days. (Herx Hiemer Like Reaction)

The above observations suggest that MDT had little effect in preventing or ameliorating lepra reactions. One of the study cases developed type 2 R. after a complete 2 years course.

Coloured slides and tables are available to demonstrate different types of reactions and their follow up for periods from two months to several years.

CL25

REVERSAL REACTION IN MULTIBACILLARY LEPROSY PATIENTS FOLLOWING MDT WITH/WITHOUT IMMUNOTHERAPY WITH A CANDIDATE ANTILEPROSY VACCINE, MYCOBACTERIUM W.

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Immunotherapy with a candidate antileprosy vaccine, Mycobacterium W was given in addition to standard multidrug therapy (MDT) to 53 multibacillary lepromin negative patients belonging to BB, BL and LL types of leprosy (Vaccine group). An equal control group received MDT and injections of micronised starch as placebo. Both the vaccine and placebo were administered intradermally every 3 months. The patients were evaluated at determined intervals by clinical, bacteriological and histopathological parameters and lepromin testing. Reactional episodes were analysed with reference to incidence, onset, frequency and severity during and after release from treatment (RFT)-ing. Incidence of reversal reaction (RR) was marginally higher in vaccine group (22.6%) vaccine group vs. 15% control group). All cases with history of downgrading type 1 reaction developed RR during therapy. Most episodes occurred within first year of commencement of therapy-half developed within 3 months. Late reversal reactions (after RFT) were observed in 3.8% of case in both groups. Half the reactors in control group and 1/3rd in vaccine group had repeated reactional episodes. Incidence of neuritis associated with RR as well as isolated neuritis were equally frequent in both groups.

CL26

SIGNIFICANCE & MANAGEMENT OF REACTIVE PATCHES IN LEPROSY TYPE 1 REACTION

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In this study 350 cases of Type 1 reaction have been included. There are from the leprosy patients registered at Dhoolpet Leprosy Research Centre, Hyderabad during the period 1982-1992.

All cases were classified according to Ridley Jopling Classification, Charting done carefully, skin smear taken, VMT done routinely and biopsy taken in most cases.

These cases were analysed as regards to classifications, presentation of reaction with regard to leprosy treatment.

Local effect of these reactive patches on the skin involved, hair and underlying structures will be mentioned. Significance of the location and size of reactive patches to the nerves damaged ulnar/median/c. peroneal/facial will be dealt.

All these cases received similar treatment given on an outpatient basis with semistandardised steroid regimen with good result in most cases. Results will be presented. Appropriate color transparencies will be shown.

CL27

STUDY OF LATE REVERSAL REACTION IN PAUCIBACILLARY PATIENTS, AFTER MULTI DRUG TREATMENT - ITS INCIDENCE RATE, TIME OF ONSET, MODE OF PRESENTATION AND MANAGEMENT.

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The occurrence of the reversal reaction in leprosy has been recognised for long but there has been very little information about clinical epidemiological and natural history of Late Reversal Reaction in paucibacillary patients.

The study comprises of 3500 patients of paucibacillary leprosy (tuberculoid, neuritic and borderline - tuberculoid) detected by different methods in multidrug therapy project in Bharuch district. These cases completed Multi Drug Treatment during the year 1989-90 and also completed the prescribed 2 years surveillance period in the years 91-92. These 3500 patients contributed to a total of 7051 person - years of risk (PYR). The number of patients who developed reversal reaction was 19 giving an incidence rate of 2.69 per 1000 person - years of risk. The criteria applied for diagnosis of reversal reaction clinical and bacteriological after excluding relapses with therapeutic doses of steroids. The results of the study will be presented.

CL28

CYCLOSPORIN TREATMENT IN REVERSAL REACTION.

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Reversal reaction in leprosy is usually described as a classic example of type IV hypersensitivity reaction. Therefore, treatment with corticosteroid is considered the main stay of treatment. However, in some patients, corticosteroids are poorly tolerated. Two patients with reversal reactions are described. One patient on prednisolone developed a steroid cataract and had to be treated with cyclosporin. The patient responded well. The other patient had a difficult to control diabetes and his reversal reaction too

responded very well to cyclosporin. Although cyclosporin has been described for treating ENL, this treatment did not work in our hand. However, as expected it was effective in reversal reaction. The mode of action and side-effects of cyclosporin will be discussed.

CL29

NEOPTERIN AS A MARKER FOR REACTIONAL LEPROSY.

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Reversal reaction (RR) is supposed to be a delayed type hypersensitivity reaction; the pathogenesis of erythema nodosum leprosum (ENL) is not clear but CMI may play a role. Neopterin, a product of gamma-interferon activated macrophages was measured in sera from leprosy patients and controls from the Philippines. It appeared that neopterin levels were increased in RR and ENL compared to untreated TT/BT and BL/LL patients. (Hamerlinck et al. Exp. Derm. 1992; 1:101) Therefore, we studied sera of patients with RR and ENL who had increased serum neopterin levels. Retrospectively, sera were examined before, during and after reaction.

Six patients were studied with 4 episodes of RR and six episodes of ENL. In 3 out of 4 RR episodes, the reversal reaction paralleled the increase of serum neopterin level and the same was observed in 4 out of 6 ENL episodes.

It appears that, by means of longitudinal investigation, increase in serum neopterin levels correlate with the occurrence of RR and ENL and therefore may be helpful in differentiating between RR and relapse.

As neopterin is produced by gamma-interferon stimulated macrophages, the results supports the hypothesis that CMI plays a role in ENL.

CL30

LATE REVERSAL REACTION IN PAUCIBACILLARY PATIENTS, AFTER M.D.T. - ITS INCIDENCE RATE, TIME OF ONSET, MODES OF PRESENTATION

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While the occurrence of reversal reaction in leprosy has been recognised for long, there has been very little information about clinical epidemiological and natural history of late reversal reactions in paucibacillary patients.

A total of 2972 patients of paucibacillary leprosy (Tuberculoid and Borderline Tuberculoid) detected by different methods at Sivananda Rehabilitation Home, Hyderabad, in its Urban Leprosy Control Unit, who had completed M.D.T. during the years 1986-1990 and also completed the prescribed 2 years surveillance period were included in this study. The number of patients who developed reversal reaction was 23, giving an incidence rate of 3.9 per 1000 person-years of risk. The criteria applied for diagnosis of reversal reactions were clinical and bacteriological after excluding relapses with therapeutic doses of steroids. The late RR has been studied in relation to variable like age, sex, type of disease and number of skin and nerve lesions. An attempt has also been made to identify the relation between length of treatment with M.D.T. and development of late RR and the risk factors for RR

CL31**OPHTHALMIC FINDINGS OF LEPROSY CASES THAT WERE DIAGNOSED AT ISTANBUL LEPROSY HOSPITAL**

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Istanbul Leprosy Hospital, Istanbul Leprosy Research Center, Istanbul, Turkey.

Ophthalmic examinations of 21 leprosy patients whose first diagnosis were established in Istanbul Leprosy Hospital, were performed by slit-lamp and results are reported below.

The average age of patients was 23,71±1,8 and average disease duration was 5,71±0,63 years.

66,66 % of cases had bilateral corneal nerve thickening, 57,14 % had m.leprae infiltrate in the right eye and 61,90 % in the left, 9,52 % had bilateral pannus, 33,33 % had subepithelial scar in the right eye and 28,57 % in the left eye.

52,38 % of cases were still on anti-leprosy treatment. 14,28 % of patients had bilateral uveitis. All patients having uveitis had subepithelial scars and two of them had completed their treatment. Two of the uveitis cases had nerve thickening and opacity. None of them had pannus.

CL32**THE EXTENT OF LEPROSY RELATED DISABILITIES IN TURKEY**

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Istanbul Leprosy Hospital, Istanbul Leprosy Research Center, Istanbul, Turkey.

Turkey has a national population of approximately 55 million and there are 3502 registered leprosy cases at the end of 1992.

In this study, realized between January 1986 and January 1993, 711 leprosy patients were evaluated according to their age, sex, province they live, classification of their disease and disability using WHO grading.

The average age of patients was 50,07±13,50 and average disease duration was 25,97±13,29.

50 % had lagophthalmos, iritis or keratitis in both eyes and 9,4 % had severe loss of vision or blindness.

37,4 % had ulcer, mobil claw fingers or slight absorption. 18,1 % had wrist drop, stiff joints or severe absorption.

43,25 % had plantar ulcers, clawed toes, foot drop or slight absorption in both feet, 10,4 % had contractures, severe absorption or amputations.

CL33**OCULAR STUDY OF HANSEN'S DISEASE AT A DERMATOLOGICAL HOSPITAL. THE PREVENTION IN OUR HANDS.**

Fernando Oréfice, Leticia Boratto

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

This study is based on the observation of 363 patients bearing different types of Hansen's disease.

In examining a patient we had no previous knowledge as to the type of leprosy to expect. Therefore we were able to study all patients without the danger of being influenced by a previous diagnosis.

The protocol was broken down as follows: visual acuity, facial muscle function, eyelashes, lacrimal apparatus, pupil, ocular motility, cornea, sensibility, Schirmer test, a study of the anterior segment of the eye with slit lamp.

This study encompasses 363 patients, broken down as follows: Virchowian (275), Tuberculoid (57), Indeterminate (29) and Dimorphous (2).

Age ranged from 18 to 82. There were 229 men and 134 women. 183 caucasians, 157 dark skinned and 23 black.

CL34**STUDY OF OCULAR LESIONS IN LEPROUS OUT PATIENTS**

Lilian Monteiro, Wesley Campos, **Fernando Oréfice**, Maria Aparecida Grossi

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais - Belo Horizonte - Minas Gerais - Brazil.

In this study, 997 leprosy out patients were examined, 528 of which (53%) were of the Lepromatous type, 199 (20%) of the Borderline type, 167 (16,8%) of the Tuberculoid type and 103 (10,3%) of the Indeterminate type.

314 patients (31,5%) showed ocular adnexa lesions and 389 (39%) showed eyeball lesions, and these manifestations were more common in Lepromatous Leprosy and increased according to the age of the patient and the duration of the disease.

Sight threatening lesions were rare findings and this was in part considered due to the early systemic treatment.

CL35**DACRIOCISTOGRAPHICAL STUDY OF PATIENTS BEARING HANSEN'S DISEASE**

Leticia Boratto, **Fernando Oréfice**, Liliana Werner.

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

A dacriocistographical study of 200 patients were performed in order to detect an early damage of facial nerve in patients bearing Hansen's disease.

This study was performed in two groups of patients: those with the disease and those without it, each group with 100 patients.

The authors concluded that this type of exam brings no diagnosing help in detecting an early damage of the VII nerve.

CL36**USE OF CLOFAZIMINE IN PATIENTS WITH OCULO-CUTANEOUS ALBINISM IN BEARES OF VIRCHOW'S FORM OF HANSEN'S DISEASE.**

Wesley Campos, Fernando Oréfice, Maria Aparecida Grossi, Carlos Rodrigues.

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

It is reported a case of one patient with oculo-cutaneous albinism, tyrosin + , with Hansen's disease, treated with multidrug therapy (MDT).

The patient was treated with Clofazimine (one of the drugs used in MDT) for two years and it was not noticed any pigmentation of the skin and mucosa.

If Albinism is a congenital disease with a failure of the formation of a normal amount of melanin and if Clofazimine can produce increased pigmentation, would the metabolism of Clofazimine be correlated to melanin?

Could this correlation explain why this patient did not become pigmented?

CL37**CONJUNCTIVAL AND SCLERAL PIGMENTATION DUE TO CLOFAZIMINE**

Wesley Campos, Maria Aparecida Grossi, Lilian Monteiro, Fernando Oréfice.

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

The authors present a case of a patient with Hansen's disease and that had used Clofazimine as therapy, daily, during 9 years, in a total dosis of 324 g.

This patient presented a very intense ocular pigmentation, mostly at conjunctive and scleral.

The exam at slit lamp showed a very "suis generis" aspect of the ocular pigmentation.

The authors also comment on differential diagnosis and the difficulties of finding Clofazimine's crystals with optical microscopy and mention a method where they can easily be recognized.

CL38**PSEUDO ACUTE ABDOMEN DUE USE OF CLOFAZIMINE**

Frederico Discini, Maria Aparecida Grossi, **Wesley Campos**, Fernando Oréfice

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

The authors present a case of pseudo acute abdomen in a patient with Hansen's disease after the use of Clofazimine (multidrug therapy) for a period of five years.

Several exams were performed and the video laparoscopy showed a different impregnation of parietal peritoneum and omentum with dark spots that at fresh microscopic exam revealed clofazimine's crystals.

The authors emphasize that it is important to pay attention to the possibility of Clofazimine to simulate a surgical picture and that this picture should be included in differential diagnosis of acute abdomen , mostly in countries where Hansen's disease is endemic and Clofazimine is used as therapy.

CL39**BILATERAL IRIDOCYCLITIS CAUSED BY MYCOBACTERIUM LEPRAE DIAGNOSED THROUGH PARACENTESIS.**

Wesley Campos, Fernando Oréfice, Maria Aparecida Grossi, Carlos Rodrigues.

Leprosy Unit, Department of Ophthalmology - Universidade Federal de Minas Gerais Belo Horizonte - Minas Gerais - Brazil.

The authors carried out anterior chamber paracentesis in a patient bearing Hansen's disease who presented bilateral iridocyclitis.

The paracentesis was performed in out patients. The aqueous humor was studied through Ziehl-Nielsen colouring method and the result was the isolation of Mycobacterium leprae at anterior chamber.

This study shows that Mycobacterium leprae is one of the causes of uveitis in Hansen's disease and so it is worth while to look for it in patients bearing this kind of disease.

CL40**ANALYSIS OF LAGOPHTHALMOS AMONG 2.144 CASES OF LEPROSY**

Yan Liangbin Zhang Guocheng Li Wenzhong

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Two thousand one hundred and fourteen cases with lagophthalmos among 14,257 cases of leprosy in 11 counties in Yangzhou Prefecture were analysed. The results were as follows: 1214 cases had uni-lateral lagophthalmos, and 900 had bilateral lagophthalmos. The prevalence of lagophthalmos was 14.83% comprising 72.92% of all eye complications in leprosy (2114/2666). In the lagophthalmos group, 51.61% of the cases had loss of sensation of the cornea (1.91/2.666), which was higher than that in the non-lagophthalmos group. The eye complications in leprosy varied with age, type of leprosy and duration. For PB cases, 58.93% of the cases had lagophthalmos within four years after the onset of the disease. For MB cases, 69.95% of the cases had lagophthalmos over 10 years after the onset of the disease, most of them were bilateral lagophthalmos. The approach to eye complication prevention has been proposed according to the findings. Emphasis was laid on the early detection and treatment of eye complications.

CL41**EVALUATION OF PRE-CORNEAL FILM IN LEPROSY**ALAMPUR SAIBABA GOUDSIVANANDA REHABILITATION HOME
KUKATPALLY, HYDERABAD

The number of registered cases of Leprosy was 3.7 millions in 1990. 25% of them have got ocular involvement and may be 5% do have blindness. The present study aimed at investigating the pre-corneal tearfilm abnormalities in patients of various types of Leprosy. The study was conducted on 500 eyes of patients attending Sivananda Rehabilitation Home. The patients were subjected for Schirmer's Test, 1% Rose Bengal Test, Tearfilm break up time with Fluorescein and Conjunctival impression cytology. It is observed that tearfilm abnormalities are important factors contributing for corneal morbidity. This work has been carried out at Sivananda Rehabilitation Home, Kukatpally, Hyderabad.

CL42**DERMATOGLYPHIC ASPECTS IN LEPROSY PATIENTS AND THEIR RELATIVES IN ALBANIA**M.M.Nakuci & M.Nakuci
(Clinic of Dermatology, Tirana, Albania)

Genetic predispositions in leprosy are demonstrated in some works with pedigrees, presence of the "specific" genes in HLA (DR₂) etc. system. We have study aspects of dermatoglyphics in 29 leprosy patients, 44 relatives persons and 110 health persons (group of control).

In 1097 fingers of health persons there are : 62.2 % Loops, 30.8 % Whorls, 6.6 % Arches. In 269 fingers of leprosy patients there are : 71.4 % Loops, 23.7 % Whorls, 4.8 % Arches. In 440 fingers of relatives 62.7 % Loops, 31.8 % Whorls, 5.5 % Arches. If in the leprosy patients the Loops are higher (t=2.8, p < 0.05) the Whorls and Arches are lower (t=2.4, p < 0.05) in comparing with the group of control.

Important is that the third finger in the leprosy patients the Loops there are (very higher) 77.8 % in cooperation with health persons, which have 64.5 % (t=2.95, p < 0.05).

Furuhara index (F=100xW/L) is for the health persons 91.83, in the leprosy patients is 36.55 (very low), in the relatives 58.18.

In the study of triradiuses: t'(n=200) 24 %, in health persons; t'(n=52) 50 %, in leprosy patients; t'(n=88) 62.5 % in relatives. There are significant differences (t=3.4, t=6.5)

The conclusion is that :

1. This data confirm genetic predisposition of the leprosy patients for this disease.
2. This method can apply in the control of the people in the endemic zones to know the predisposition of this populations for leprosy.

CL43**LEPROSY IN CHILDREN**

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A study of 161 leprosy children / 3184 patients had indicated an incidence of 5.06% amongst leprosy patients in an urban setting with a boy : girl ratio of 2.6:1. Children were largely immigrants from neighboring endemic states of Uttar Pradesh and Bihar. The mean duration of disease was 1.2 years for paucibacillary and 2.8 years for multibacillary leprosy. The expression was either a macule or a plaque. Most of the cases belonged to indeterminate, borderline tuberculoid or borderline borderline, with polar groups being distinctly uncommon. Thus emphasizing again the incomplete nature of expression of the disease spectrum in children. Single lesions over the exposed areas of the body were more frequent. Reactions and deformities were uncommon. The limitation of slit-skin smear was once again exposed. In only 55.3% of the cases was clinicohistopathologic correlation obtained.

CL44**A CLINICAL ANALYSIS OF 187 CHILDREN LEPROSY**

Wu Yongzan

Xiuying Leprosy Hospital, Haikuo, Hainan Province, China

Xiuying Leprosy Hospital was established in 1933. The accumulative number of hospitalized patients is 1,073 including 187 children patients (0-14 years of age), accounting for 17.4%. Of these children patients, 41 (21.9%) and 146 (78.1%) were detected before and after the fifties respectively; males 112 (59.9%), females 75 (40.1%), male, female=1.5, 1; MB 110 (58.8%), PB 77 (41.2%); household contacts 37 (19.8%), contacts outside the household 26 (13.9%), infection resource unknown 124 (66.3%), the average age of onset of the disease was 10.9 years, the youngest was 4.8 years and the oldest was 14 years; the average duration of disease was 3.3 years, the shortest was 1 month and the longest was 11.3 years; the extremities were the first sites of appearance of skin lesions in most cases (71.2%); 83 cases with Grade I-III disabilities with a disability rate of 44.38%; 73 cases (PB 49, 67.1%; MB 24, 32.9%) cured with 2-5 year DDS monotherapy and 96 (PB 22, 22.9%; MB 74, 77.1%) cured with more than 6 year DDS monotherapy. There were 21 relapsed patients (MB 17, PB 4) with a relapse rate of 11.2%.

CL45

AN ANALYSIS OF 70 NEWLY DETECTED LEPROSY PATIENTS

Liu Houjian Zhao Tian'en Zhang Yuxian Li Yongshi

Shandong Provincial Institute of Dermatology, Ji'nan, China

Linyi Prefecture was one of the leprosy highly endemic prefectures of Shandong province. By the end of 1990, the accumulative number of registered leprosy patients was 9594, the peak prevalence was 10.5/10000 in 1959. On the basis of an active implementation of leprosy control programme over more than 30 years, both the prevalence and incidence have considerably decreased reaching the criteria the goal of basically eliminating leprosy required, and there were only 100 active cases by the end of 1990. In recent years, the case detection rate was also reduced, only 70 new patients were detected from 1987-1990. Of these patients: male 55, female 15; the average age of onset of the disease was 38.75 years; the average age at the time diagnosed was 43.5 years; MB 39 (55.17%) and PB 31 (44.29%), MB:PB=1.26:1. The average duration is 2.97 years in MB and 2.1 years in PB, most of them were lately diagnosed with a duration of more than 2 years. Most new cases (85.71%) were detected by skin clinics, the rest by clue survey and self reporting. 42(60%) cases were found in the villages where with leprosy patients and 28 cases (40%) in villages where no leprosy patient was found in the past. Thus we should not only pay attention to the supervision of villages with leprosy patients, but also to the villages with no leprosy patients. Of these 70 cases, 13 were detected from patients' families. At the time diagnosed, 9 of them developed deformities. This high disability rate may be related to late case finding (average > 2 years) indicating that disability prevention and rehabilitation should be very important components of the leprosy control programme in the future.

CL46

LEISHMANIASIS DIFUSA ANERGICA DE REPUBLICA DOMINICANA PARTICIPACION DEL PERSONAL AUXILIAR DEL PROGRAMA DE LEPROA EN EL DESCUBRIMIENTO DE CASOS

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Se describen las características clínicas, patológicas, epidemiológicas y terapéuticas de una forma de leishmaniasis cutánea propia de la República Dominicana. Todos los casos, 32 en total, presentaron prueba de leishmanina negativa. Descubiertos en el período 1974-1992, por el personal médico y paramédico del programa para el control de la lepra, especialmente en la región Este del país. Una investigación en población sana de áreas endémicas mostró 156 pruebas de leishmaninas positivas entre 893 personas a las cuales se les practicó la prueba.

Pruebas de inmunofluorescencia indirecta practicadas en 510 personas de áreas endémicas mostraron títulos positivos en 183.

CL47

HYPERSENSITIVITY TO DAPSONE, RIFAMPICIN, AND CLOFAZAMINE, IN A LEPROMATOUS LEPROSY PATIENT

K Sathish Kumar, Jacob Samuel, Sunderarajan, & Arunthathi S

S L R T C Karigiri, Tamilnadu, India 632 106

Allergic reactions to individual drugs are not uncommon but a hypersensitive response to several drugs which are different in their constitution and their mode of action is quite rare.

Multi-Drug Therapy (MDT) consisting of Dapsone, Rifampicin and Clofazamine is the mainstay of anti-leprosy treatment in the past few years, on which the hopes of leprosy control have leaned heavily. To the best of our knowledge allergic reactions to all these three drugs have not been observed or reported in any one patient.

We report here a male lepromatous leprosy patient who developed erythema, scaling and exfoliation of the skin, when administered MDT therapy. Provocative tests with each of these drugs, individually, elicited the same severe cutaneous allergic response, demonstrating that the hypersensitivity involved all these three drugs.

We discuss and present the alternative treatment plans evolved in the management of this patient.

CL48

DAPSONE INDUCED PULMONARY EOSINOPHILIA

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Dapsone induced hypersensitivity is not unknown, but to the best of our knowledge, pulmonary eosinophilia induced by Dapsone, without any cutaneous allergic manifestations has not been reported.

A lepromatous leprosy patient, known to have a history of repeatedly developing wheezing and fever whenever he was treated with dapsone for his leprosy, had a high eosinophil count (36%) and an absolute eosinophil count of 3,300/cumm while being otherwise symptom free, on admission to SLRTC, Karigiri.

When a challenge dose of dapsone was administered under supervision, the patient became acutely ill with wheezing and fever. His eosinophil count also rose up sharply, thus confirming the occurrence of a dapsone induced pulmonary eosinophilia without any accompanying cutaneous reactions.

We present our experiences in the management of this patient.

CL49

SYSTEMIC LUPUS ERYTHEMATOSUS IN A LEPROMATOUS LEPROSY PATIENT : A DIAGNOSTIC AND THERAPEUTIC PROBLEM

Arunthathi S, K Sathish Kumar & Jacob Samuel

S L R T C Karigiri, Tamilnadu, India 632 106

The clinical and laboratory features of Systemic Lupus Erythematosus (SLE) manifested in a forty three year old male lepromatous leprosy patient, after induction with Dapsone .

Although two totally different clinical entities, leprosy and SLE share features which are similar, which pose difficulty in diagnosis and therapy. The differentiating of nephritis occurring due to erythema nodosum leprosum from that occurring due to SLE is often difficult. Since Dapsone cannot be used, carefully modulated alternative therapy to treat leprosy has to be formulated.

We present guidelines in the diagnosis and management of these two diseases jointly occurring in a patient.

CL50

STUDY OF FUNGAL INFECTION IN HANSEN'S DISEASE

Dr. P.K. Tyagi

Lott Carey Baptist Mission Leprosy Colony, NIT, Faridabad, (Haryana) India.

Six cases Hansen's disease (four of B.T. Hansen's disease and two of T.T.) were studied for fungal infection which they developed during the rainy season July/ August '85. They developed Tinea infection also on the anesthetized patches. In these cases branched, septate, mycelia were seen microscopically. An interesting phenomenon was that the anesthetized patches which were not showing any sign of pain, temperature and touch, were showing signs of much itching. Scratch marks were very noticeable on the patches. These cases responded to anti-fungal treatment of griseofulvin plus local application of one of the imidazole anti fungal group of drugs.

CL51

ZOSTER-FORM BORDERLINE-LEPROMATOUS LEPROSY.

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RJG is a 32-year-old dark-skinned man with 8 month history of cutaneous lesions. He presented multiple and infiltrated lesions with symmetrical distribution.

The feature of the cutaneous lesion localized at medial face of left thigh and leg was unusual. It was an erythematous infiltrated plaque with a linear disposition. The edge was irregular, polymorphic, well-defined in some areas and poorly demarcated in others.

The histopathology of the lesion showed thinned epidermis, with inflammatory-cell infiltrate separated from epidermis by a narrow zone of collagen. The infiltrate was represented by foam-cells, some forming large nodules throughout the dermis with little epithelioid-cells. Bacterial index of skin smear was 5+ and lepromin reaction 3mm.

CL52

KERATOSIC PRESENTATION ON TUBERCULOID LEPROSY

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RCS is a 49-year-old white woman with a 4 month history of paresthesia on the left foot.

On physical examination, she had three erythematous infiltrated plaques localized at medial face and heel of the left foot. The main characteristic was the surface of this lesion, that was dry, keratotic and with loss of sensation in the skin lesions and enlarged left common peroneal nerve.

The histopathology showed hyperkeratosis with psoriasiform acanthosis and a tuberculoid granuloma in the mid-dermis. The Ziehl-Neelsen stain

showed that the fast-acid bacilli was absent in the histopathological examen. The skin smear examen was also negative and lepromin reaction was 9.5 mm. The culture for mycobacteria was negative, showing that there was not association with other mycobacterias.

The reason for presentation is the unusual keratotic form on tuberculoid leprosy.

CL53

ASPECT CLINIQUE DIFFERENTIEL DE LA LEPRE EN HAÏTI.

Gyliane Woel, Claude Pean, Raymond Bernardin.

Institut Cardinal Leger contre la lepre (HAÏTI)

Présentation iconographique des principales pathologies cutanées pouvant constituer des pièges en pratique courante de dermatologie.

CL54

ASPECTS CLINIQUES PARTICULIERS DE LA MALADIE DE HANSEN EN HAÏTI.

Florence Desvarieux, Claude Pean, Nicole Belliard, Gyssette Blanc, Marlene Dambroville, Florence Foucauld, Claude A.Leville, Reol Charlebois.

Institut Cardinal Leger contre la lepre (HAÏTI)

Cas no 1 - Femme, de 54 ans, présentant un placard érythémato squameux de couleur violette à résolution centrale localisé au dos du pied droit, accompagné d'une lésion satellite angiomateuse.

Cas no 2 - Homme, de 70 ans, avec de multiples nodules disséminés d'aspect dyshydrosiforme au niveau des doigts. (Diapo)

Cas no 3 - Femme, de 52 ans, lepromateuse avec de multiples nodules en grappe de raisin sur le nez et disséminés sur le corps.

Cas no 4 - Femme, de 20 ans, avec des lésions à type d'érythème polymorphe de la paume des mains.

Cas no 5 - Aspect zoniforme des lepromes nodulaires observé chez un patient lepromateux de 44 ans.

CL55

LOCALIZATION OF SINGLE LESIONS IN LEPROSY.

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In this paper the authors study the sites of single lesions in 317 leprosy patients registered at two outpatient units in Rio de Janeiro, Brazil.

The preferential sites of lesions in the population studied, was the body's uncovered and most exposed areas.

Paucity of lesions in covered sites, even when considered the percentual body area occupied by these regions favours this impression; also the significant occurrence of dorsal lesions more common in men than women reinforce this point of view.

Predilection of facial lesions in the age group under suggests that another factors, besides exposition, interact in the distribution of lesions sites in this group.

Important differences were found when compared with data from other places and times. If vascular distribution, Langhan's cells rates and body temperature were considered as universal factors, one conclude that the exposition factor, related to social ecological and cultural characteristic should play a major role in the localization of single lesions in leprosy patients, wich do not depend of transmission's more.

CL56

CLINICAL ASSESSMENT OF MONOLESION LEPROSY CASES

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The epidemiological significance of mono-lesion as well as the clinical followup of such lesion is still unexplained satisfactorily. It is generally observed that many of mono-lesion cases might later on convert into more progressive form of cases if left untreated.

The objectives of the investigation was to study 1) the clinical behaviour of mono-lesion cases 2) relapses.

A retrospective analysis of 829 mono-lesion Paucibacillary (PB) cases was done without following any sampling techniques.

Results :

Out of 829 cases which were treated with WHO-PB-MDT regimen for 6 months, 562 (67.8%) were found to be inactive at Release From Treatment (RFT). From the remaining 267 cases active at RFT, 264 (98%) attained inactivity at Release From Surveillance (RFS). Out of 3 cases, 2 patients dropped out during surveillance period and were lost for followup. One patient who relapsed attained inactivity after restarting MDT for 6 months.

Conclusion :

From the above study it may be derived that mono-lesion cases may be easily treated by the routine WHO chemotherapy. Therefore for field and operational purpose, the management of such cases does not appear to be cumbersome. The number of relapses in the study seems to be negligible so as one may not be alarmed about it from the public health point of view.

We also present data pertaining to large size monolesions as well as those involving single nerves in relation to PB as well as MB regimens.

CL57

CLINICAL AND HISTOLOGICAL PICTURE OF VERY EARLY INDETERMINATE AND BT LEPROSY IN ADOLESCENTS

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19 children born to mothers with leprosy and healthy controls (NL) were diagnosed clinically as having early indeterminate or BT leprosy at puberty. Their mothers' classification during pregnancy/lactation was: 6LL, 4BL, 3BT active, 3BT "cured", 3NL. There were 11 girls and 8 boys, average age 14 years, puberty grading (Tanner) 2.3 for both sexes. 15/19 had a past history of skin diseases and 6/19 had clinical evidence of skin disease. Number of leprosy skin lesions seen per child: 1 (7), 2 (6), 3 (3), and 3 had 7, 10 and 11 lesions each. Size of lesions: <10mm (26:47%); 11-20mm (18: 33%) and >20mm (11: 20%); range 4x4mm - 50x70mm. Type of lesions: flat hypopigmented macule with hazy edge (34 - 1 was slightly oedematous, 3 also had "goose-pimples");

flat hypopigmented macule with defined edge (2 - 1 was shiny); slightly raised hypopigmented macule (1); reddish/ coppery macule (8 - 4 were shiny); flattened nodules (10 - 1 patient only). The largest lesions were seen on the buttocks and thighs. Light touch sensation in lesion: lost (14), reduced (19), intact (18), variable (4). Site of lesions: trunk (34: 62%) - buttocks 11, back 8, chest 8, scapular 6, hip 1; upper arm -> elbow (10), thigh -> knee (7), forearm (2), face (2). Condition of nerves: just palpable (2), easily palpable (3), slightly enlarged (10), definitely enlarged (4). Number of nerves easily palpable/enlarged per child: 1 (8), 2 (6), 3, 4 or 5 nerves (1). Biopsies were indeterminate leprosy with AFB seen (8), early BT (1), "consistent with, not diagnostic of early leprosy" (7). Fernandez results were - (4), (2), + (4), ++ (7); Mitsuda readings were - (1), (1), + (3), ++ (6), +++ (1).

CL58

CLINICAL-HISTOPATHOLOGICAL CORRELATION IN PATIENTS SUSPECTED OF HAVING LEPROSY

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A retrospective study was carried out in order to analyse the correlation between clinical and histopathological diagnosis in patients biopsied at the "Alfredo da Matta" Institute for Tropical Dermatology. It lasted from January 1991 to December 1991, and was restricted to patients suspected of having leprosy.

The authors sought to determine the coincidence in percentage terms of clinical and histopathological diagnosis; between granulomatous inflammatory process findings and positive Mitsuda reactions, as well as between the detection of AFBs in tissue sections and in slit skin smears.

CL59

BONE INFARCTION AND LEPROSY

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Among 50 patients with leprosy, 12 (24%) had radiographic evidence of bone infarction in feet and/or hand. Fifteen lesions were recorded with a marked predominance to the upper extremity (80 p. cent were located in the hand). Considered asymptomatic, these lesions were painful only in two cases (both located in hand's phalanx). X-Rays disclose encapsulated calcifications, and bone sclerosis.

We think than these lesions are due to a vascular pathogenesis like aseptic necrosis, and they are a kind of specific bone change due to invasion of bony vessels by the bacteria.

These were found to have highest incidence in the lepromatous type of leprosy, and with the longest -- duration of the disease.

CL60

TUBERCULOID LEPROSY ASSOCIATED WITH PULMONARY TUBERCULOSIS

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The authors present a clinical case of association of tuberculoid leprosy and pulmonary tuberculosis involving a 17-year old female Mulatto student from Goiás, Brazil.

In October 1990, after presenting symptoms of infection of the upper airways, she was diagnosed to have pulmonary tuberculosis.

After 1 week of treatment with a triple drug schedule (isoniazid, hydrazide and rifampicin), the patient presented skin lesions of a progressive nature. After 4 months, 3 nummular, erythematous-desquamating hypoaesthetic lesions with infiltrated borders were observed on the face and upper limbs at the Dermatology Service of FMRP-USP.

The diagnostic hypothesis of tuberculoid leprosy was raised and the following laboratory tests were performed:

- . Lesion bacilloscopy: negative
- . Mitsuda reaction: positive (20 x 20 mm + central necrosis)
- . Histopathology: tuberculoid leprosy.

The triple schedule was maintained and 100 mg/d dapsone was started.

The reason for this presentation is to suggest that infection with *Mycobacterium tuberculosis* may have altered the immunological equilibrium of the patient and triggered the skin manifestations of leprosy.

CL61

Dapsone-Induced Lupoid Photodermatitis in Leprosy

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Ana Marcia de Almeida, Norma T. Foss

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The authors present a clinical case of dimorphic tuberculoid (DT) leprosy involving a 66-year old woman who had been using dapsone for 8 months when infiltrations of a violaceous color started on her face and papulo-erythematous-violaceous, desquamating lesions started in areas of the upper and lower limbs exposed to sunlight.

Laboratory tests:

Blood count: white cells, 4,900/mm³ with 23% eosinophils; hemoglobin, 11.2 g/100 ml.

Determination of LE cells and of antinuclear factor (ANF): negative.

Latex test: +. C-Reactive protein (CRP) measurement: negative.

Skin biopsy: Epidermal atrophy with liquefaction of the basal layer. Areas with gaps at the dermo-epidermal junction. Dermis with a chronic perivascular infiltrate, with deposition of fibrinoid material around the vessels.

Direct immunofluorescence of skin biopsy: Fringe-like linear IgG, IgM, C3 and fibrinogen deposit in the basement membrane zone.

The clinical and laboratory aspects and the involution of the lesions promptly occurring after the discontinuation of dapsone, with only residual hyperchromia left, led to a diagnostic hypothesis of dapsone-induced lupoid photodermatitis.

CL62

HISTOID LEPROSY AT WESTFERT HOSPITAL,
SOUTH AFRICA

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Six patients with histoid leprosy were seen over a period of twelve years. Four patients had never been treated before, and two responded to dapsone monotherapy. Three developed ENL. A low incidence (2,3% of all LL cases) and a homogeneous histopathologic picture were found.

CL63

STUDIES ON SERUM -ANTITRYPSIN INHIBITORY CAPACITY OF LEPROSY PATIENTS

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Modified Eriksson's method was used to evaluate serum -antitrypsin inhibitory capacity (-AT) of 60 healthy subjects (control group) and 55 patients with leprosy, including TT 15, Borderline group (BB, BT, BL) 30, LL 10. The results showed that the values of serum -AT were 1.21 ± 0.15 mg/ml for the control group, 1.18 ± 0.26 mg/ml for TT (compared with control group, no significant difference, $P > 0.05$), 1.02 ± 0.28 mg/ml for Borderline group (compared with control group, significant difference, $P < 0.01$), 0.78 ± 0.42 mg/ml for LL (compared with control group, significant difference, $P < 0.01$). Furthermore, the value of -AT decreased gradually from TT to LL. The authors believe that -AT deficiency may play a role in pathogenesis of leprosy, thus purified -AT preparation or drugs capable of elevating -AT may be useful for the treatment of leprosy.

CL64

RBC IMMUNO-ADHEREING FUNCTION IN LEPROSY PATIENTS AND THEIR HOUSEHOLDS---A PRELIMINARY STUDY

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Eighty one leprosy patients and their household members were monitored with RBCC3bRR, RBC1CR, RFER, RFIR and CIC. The results showed that there was a significant difference of the values of RBCC3bRR, RBCC1CR, RFER and RFIR between the patient group or household group and the healthy controls. There was no significant difference of values of RBCC3bRR, RFER and RFIR between the patient group and the group of household members, but significant difference of the value of RBC1CR was found between the two groups just mentioned. The results also showed that the values of RBCC3bRR, RBC1CR, RFER and RFIR in household members of LL and BL patients were abnormal as compared with those of healthy individuals. In this study, the authors investigated and discussed the possible mechanism of abnormal RBC immun adhering function in leprosy patients and their household members and its possible clinical significance, emphasizing the importance of monitoring leprosy household members in the strategy of leprosy control.

CL65

THE CLINICAL SIGNIFICANCE OF ANTI-PHENOLIC GLYCOLIPID (PGL-1) ANTIBODY IN MULTIBACILLARY LEPROSY PATIENTS

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With NT-P-BSA as antigen, ELISA was used to detect anti-PGL-1 antibodies (IgM) in MB patients with different clinical status of disease and different durations. The following were the results: the average OD value (OD) of 154 healthy individuals was 0.11 ± 0.08 ($X \pm SD$) with 0.27 as the cut off point of positivity and a positivity rate (PR) of 4.6%, the initial OD of 30 previously untreated patients was 0.71 ± 0.30 with a PR of 96.7%; OD and PR of 40 cases after 12 doses of MDT, 26 cases after 24 doses of MDT and 52 clinically cured cases were 0.53 ± 0.25 and 85%, 0.37 ± 0.21 and 65.4%, and 0.20 ± 0.17 and 62.9% respectively; OD and PR of 19 relapses were 0.53 ± 0.22 and 84.2%. The OD of active case was remarkably higher than that of cures, and there was also a significant difference between OD of cures and healthy persons. The annual mean falls of OD and BI of patients on MDT were 0.28 and 0.65 respectively, showing a reduction of the average OD value and PR with the increase of duration of the treatment and with the decrease of BI. The sensitivity and specificity of NT-P-ELISA were 96.7% and 95.4% respectively and have been proved stable and reproducible, suggesting this test might be helpful in detecting the clinical status of MB cases, evaluating the effect of MDT and predicting the possibility of relapse.

CL66

THE METHOD FOR QUALITY CONTROL AND ITS APPLICATION IN LEPROSY SKIN SMEAR EXAMINATION

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Five Workshops on Skin Smear Examination were conducted in Guangdong province since 1989. Every participant was required to take tissue fluid from active leprosy skin lesions (4-6 sites for each patient). Totally 81 slides including 476 smear spots were examined. All the participants and more than two experienced technicians read these slides with double blind method. The findings of the experienced technicians were used as the criteria to assess the quality of slide preparation, staining, slide BI value and BI value of each smear spot. "Three Contents Assessment Method" (TCAM) (Slide preparation, staining, slide BI value) and "Modified Three Contents Assessment Method" (MTCAM) (modified by adding BI value of smear spots) were used to evaluate the quality of skin smear made by 51 participants. According to MTCAM, the results were: grade A 31.4%, grade B 29.4%, grades C and D 19.6% each, but according to TCAM grade A was 76.5%, grade B 19.6%, grade C 3.9% and grade D 0%. All slides of grade D assessed by MTCAM were reassessed by 10 freshmen with TCAM, the results were changed as follows: grade A 30%, grade B 50%, grade C 20% and grade D 0%. The authors suggested that TCAM, if used for skin smear quality control, could not fully reflect the quality of bacteriological examination. MTCAM might be pre-ferable.

CL67

THE RELATIONSHIP BETWEEN ANTI PGL 1 ANTIBODY (IgM) LEVEL AND RELAPSES IN THE CURED LEPROSY PATIENTS

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Three hundred and thirteen cured leprosy patients (MB 171, PB 142) were clinically, bacteriologically and serologically monitored for 2 years in Guangxi Autonomous Region. ELISA and MLPA with NT-P-BSA as antigen, were used to detect PGL-1 (IgM). Sera from 235 local healthy people (OD±2SD=0.24) served as the cut-off point of ELISA, the positivity threshold of MLPA is >1.32.

The results showed that: 1) the anti-PGL-1 antibody (IgM) were detectable over a considerable period of time in leprosy patients after cure. The mean OD value of 171 cured MB for ELISA was 0.133 with a positive rate of 15.79% (27/171), much higher than those of the PB, the latter being 0.086 and 3.52% (5/142) respectively. 12.87% (22/171) of cured MB was regarded as MLPA positive, but all cured PB were MLPA negative. 2) 2 (7.4%) relapses from cured MB were detected in 27 NT-P-BSA-ELISA positive cured MB patients. Furthermore, the levels of specific antibody in the sera of both cases steadily increased right before relapses appeared, but no relapsed case was found in 291 NT-P-BSA-ELISA negative patients.

The results suggested that relapses were more likely to appear in cured patients with positive serological results.

It may be helpful in early detection of relapsed patients or in relapse prevention if close observation is given to those whose OD value is relatively high.

CL68

LEPROSY BACILLI IN SMEARS FROM NASAL MUCOSA

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Smears from the nasal mucosa of 171 newly detected multibacillary leprosy patients were taken over a five year period in the LEPRA Control Project in Malawi. The smears were taken on the day the patients were detected and at the same time as the initial standard slit skin smears which were taken from at least four sites.

The Bacillary Index (BI) of the nasal mucosa smear is compared with the highest BI of the slit skin smears. The comparison shows a mildly positive

correlation ($r=0.42$). A majority (approx. 75%) of the patients for whom the highest BI of the slit skin smears is 4 or less has a negative nasal mucosa smear. On the other hand patients with a BI of 5 or 6 tend to have a positive nasal mucosa smear (65 to 70%).

Of the 171 patients 85 had a positive nasal mucosa smear. Of these, 55 could be followed until the nasal smear became negative. The majority (62%) became negative during the first six months of treatment with the standard WHO multidrug regimen.

CL69

HEMATOLOGIC DATA OF OLD PATIENTS WITH LEPROSY

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Hematologic values, in a retrospective three-year (1989-1991) longitudinal study, were analyzed for 315 old leprosy patients who were 163 males (ranged in 47-90 years of age, 70.9±8.3) and 152 females (47-101, 71.6±9.1). Patients were selected based on long-term records confirming their forms of leprosy, medical treatments and present other illness. Hemoglobin level (Hb), RBC count and hematocrit (Ht) began to decline in male patients in the sixth decade and in female in the eighth decade of life. WBC count were not statistically different. Hb values for lepromatous form were lower than those of tuberculoid form and decreased significantly with advancing age.

Sex	Age	n	Hb (g/dl)	RBC (10 ⁶)	Ht (%)	WBC (10 ³)
Male	50-59	13	14.6±1.0	4.59±0.32	43.4±2.6	5.6±1.5
	60-69	63	13.8±1.4*	4.36±0.46	41.3±3.7	6.2±1.2
	70-79	60	13.5±1.5*	4.27±0.49*	40.7±4.3*	6.0±1.2
	80-89	23	13.5±1.6*	4.31±0.49	40.1±4.7*	6.0±1.3
Female	50-59	13	13.4±1.0	4.36±0.35	40.5±3.2	6.3±0.8
	60-69	45	13.4±1.0	4.31±0.34	40.0±2.9	5.9±1.2
	70-79	62	13.2±1.0	4.23±0.35	39.4±3.1	5.7±1.2
	80-89	28	12.8±1.2**	4.10±0.44**	38.6±3.4	5.8±1.3

Values are mean±SD. *:p<0.05 vs. fifth decade, **:p<0.05 vs. sixth decade using the paired Student t test.

Sex	Age	n	Hb (g/dl)	Lepromatous	Tuberculoid
Male	47-69	78	14.0±1.4	13.9±1.4 (n=72)	15.2±1.1 (n=6)
	70-90	85	13.5±1.5*	13.3±1.4* (n=72)	14.7±1.7 (n=13)
Female	47-69	59	13.4±1.0	13.4±1.0 (n=45)	13.4±1.0 (n=14)
	70-101	93	13.1±1.1	12.9±1.1* (n=70)	13.5±1.0 (n=23)

*:p<0.05 vs. under 69 years group

CL70

ETUDES DE L'INDICE BACTERIOLOGIQUE CHEZ LES PATIENTS MULTIBACILLAIRES

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Institut Cardinal Leger contre la lepre (HAITI)

Seront consideres:

- 1) les variations de l'IB chez les patients multibacillaires reguliers au traitement.
- 2) les variations de l'IB dans les cas de non compliance au traitement.
- 3) les variations de l'IB dans les cas d'abandon du traitement.

CL71

THE ROLE OF SKIN-SMEAR EXAMINATION IN PAUCIBACILLARY LEPROSY

Devanbu V, Salim A. Khan, Lilly Ravikumar, Nobleraj A, Lobo D.

It is an established fact that Skin-smear will be NEGATIVE in the large majority of Paucibacillary (PB) leprosy cases. Thus the Diagnosis of PB leprosy is mainly based on Clinical criteria.

In spite of this known fact, a routine Skin-smear is advised in PB cases before and at completion of treatment as per WHO guidelines.

Over a period of thirty months commencing 1990, a total of 5394 PB smears were done in our institution, out of which only TWO (2) were found to be POSITIVE. Thus 99.95% of the smears were NEGATIVE. A detailed analysis of the PB cases who under-went skin smear is presented.

The need, relevance and cost-effectiveness of this exercise is discussed, along with its role and importance in the planning of future Leprosy Control Programmes, taking into due consideration the scarce laboratory facilities worldwide.

CL72

POLYMERASE CHAIN REACTION EN LA LEPROA.

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¹Sanatorio Fontilles Alicante (España), ²Departamento Microbiología Facultad de Medicina Valencia (España), ³Durviz S.L. (España).

Se ha utilizado la técnica de la PCR detectando el gen groEL mediante nested-PCR y con los primers 18K-1 y 18K-3 en 25 biopsias de enfermos de lepra comparandolo con estudio clínico, bacteriológico, histopatológico e inmunológico.

Se presentan los resultados preliminares obtenidos y se hacen consideración de la importancia de esta técnica para detectar formas paucibacilares, casos iniciales y diferenciar las recaídas de las reversal reactions. También puede ser útil en el estudio de la transmisión de la lepra en los contactos y no contactos de áreas endémicas.

CL73

BACTERIOLOGICAL AND IMMUNOLOGICAL STUDIES ON ACTIVE LEPROSY IN CAIRO

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Al Azhar University, Medical College Egypt, Research institute Borstel Germany.

In spite of efforts done by WHO and the Egyptian Ministry of Health, still there are many sporadic new cases of leprosy. This study was done on 26 active patients examined clinically, skin and nervous system. Bacteriological investigations were done including the bacteriological and morphological indices. Polymerase chain reaction (PCR) was done on biopsies using two or four primers. T_H cell subpopulations and the ratio between T_H helper and T_H suppressor were determined. Specific humoral immunity was done by determining the PGL antibodies using the indirect ELISA test.

The results of these investigations and their significance in classifying leprosy will be presented.

CL74

HEMATOLOGICAL AND BIOCHEMICAL INVESTIGATIONS ON ACTIVE AND TREATED PATIENTS.

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Al Azhar university, Medical College, Egypt.

Hematological investigations as blood hemoglobin, total and differential leucocytic count, and biochemical investigations as liver and kidney function tests, were done on active and treated patients. The results were compared with those done on apparently healthy control age-matched persons.

It was found that mild to moderate anemia was present. Hemoglobin level was affected with the intensity of the bacterial load. Treated patients had a higher hemoglobin level than the under treatment patients. All the biochemical result showed non significant increase or decrease values compared with the control group. Details and Data results and their statistical analysis will be discussed and presented.

CL75

SERUM LACTOFERRIN IN LEPROMATOUS LEPROSY PATIENTS

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The serum concentrations of lactoferrin were determined by competitive enzyme immunoassay in sera of 16 healthy volunteers and 38 lepromatous leprosy patients. Out of these leprosy patients 25 were without any sign of reactions and 13 were suffering from type-II of reaction. The mean lactoferrin levels in both types of patients (1.69±1.26 ug/ml; 3.29±1.80 ug/ml respectively) were observed to be significantly higher than those in healthy volunteers. The serum lactoferrin levels were found to be associated with bacterial load (p<0.02). Majority of lepromatous patients without reactions (64.0%) had normal levels whereas 62% of lepromatous leprosy patients suffering from reactions showed a significant increase in the levels of lactoferrin. These findings suggest that rise in lactoferrin levels is associated mainly with occurrence of reactions in lepromatous patients. The results and their possible use in prognosis and understanding the pathogenesis of type-II reactions would be discussed.

CL76

EFFECT OF MULTIDRUG THERAPY ON PLASMA LEVEL OF HIGH DENSITY LIPOPROTEIN CHOLESTROL (HDL-C) IN PATIENTS OF LEPROMATOUS LEPROSY

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Increased plasma level of HDL-C have been reported in lepromatous leprosy to the extent that a negative test has been used to exclude diagnosis of lepromatous leprosy (Kumar et al, Int J. leprosy 1989-p 392)

In this study HDL-C estimations were performed in 50 patients (32 males & 18 Females) of Lepromatous leprosy, taking plasma HDL-C level as 28-71 mg/dl in men & 34-91 mg/dl in women as range of normal value, of 50 cases (mean age 48.02 ± 5.7 years and mean weight 42 ± 6.04 Kg) who received multi drug Therapy & declared free of disease (as per WHO tech. report

1982) HDL-C remained high in 41 (82%) Cases, decreased in 9 cases, of which, became normal in 7 cases. Nutritional status and weight improvement was noticed in last two groups. Relapse rate remained 5% in 1st group and nil in other two groups.

It is opened that HDL-C plays an important role not only in disease process but also has role in relapse of lepromatous leprosy. We suggest to give trial of lyolytic drugs along with MDT in cases of lepromatous leprosy.

CL77

ADAPTATION HORMONES AND AUTOSENSIBILIZATION TO CONNECTIVE TISSUE IN LEPROSY

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37 LL patients (16 active and 21 inactive cases) were assayed for antibodies to collagen (ABC) and elastin (ABe) with using latex-agglutination method, and for hypophyseal somatotrophic hormone (HSH), hydrocortisone, triiodothyronine (T3), thyroxin (T4), and for T-cell suppressor activity (TSL) with using RIA. 22 otherwise healthy persons were used as controls. In active patients ABC and ABe levels were significantly elevated remaining such in some cases after 10 years and more of their clinical inactivity. In leprosy patients blood levels of hydrocortisone and T3 were high while T4 and HSH were in the normal range. There was a strong relationship of the titers of the antibodies studied and TSL-activity and hydrocortisone and T3 levels. More elevated concentrations of endogenous hydrocortisone in leprosy patients were correlated with low titers of ABe and increased TSL-activity. On the contrary, high levels of T3 in leprosy patients were accompanied by decreased TSL-activity and increase in ABC and ABe titers. Based on the correlations found out, optimal prophylactic and curable measures for treatment of auto-sensibilization to connective tissue in leprosy might be selected.

CL78

THE FREQUENCY AND CLINICAL FEATURES OF ERYTHEMA NODOSUM LEPROSUM IN HYDERABAD, INDIA

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Erythema nodosum leprosum (ENL) is a well recognised complication of multibacillary leprosy. However few data exist as to the frequency and natural history of this phenomenon. We report here a retrospective case note study of all multi-bacillary patients registering with our clinic over the twelve year period 1980 to 1992. During this time 2742 multibacillary patients registered with the clinic, 48% were I.L. and 52 % B.L.. Overall 22.1% (range 10.7%-57%) of I.L. and 2.7% (range 0.6-5%) of B.L. patients presented with ENL. Of the 1985 cohort 32% of I.L. and 9.3% of B.L. patients have developed ENL. Details of the time course and clinical features of the disease will be presented and the impact of Multi-Drug Therapy on the frequency and presentation of ENL in our clinic will be discussed.

CL79

AGRANULOCYTOSIS SUPPOSED CAUSED BY CLOFAZIMINE IN A LEPROMATOUS PATIENT

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This abstract is about a case of agranulocytosis in a lepromatous patient who was under treatment for leprosy and, after months of treatment with 2 doses administrates clofazimine, rifampin, dapsone, developed agranulocytosis and needed hospitalization in C.T.I.

After discharge from the hospital, he used only dapsone without a problem but when clofazimine was used (50 mg/day) he developed agranulocytosis and needed C.T.I. again.

Now he is only treated with 100 mg/day of dapsone and he has been stable for 6 months.

CL80

POSSIBLE ROLE OF OFLOXACIN IN ARRESTING REVERSAL REACTION

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Reversal reactions are not a very uncommon phenomena after the implementation of Multi Drug Therapy.

Differentiation from Relapse was made on Clinical grounds, histopathology and trial with steroids. During its treatment with steroids the period ranges at times upto one year with a gradual tapering of the steroids.

In some cases it appears during Multi Drug Therapy and in some when the treatment is completed. The paper discusses the use of Ofloxacin in combination with Dapsone over a period of thirty days in five patients, where the steroids could be cut off within three months. This raises a possibility as to whether a Reversal Reaction occurs purely due to the immunological aspect or an element of Rifampicin resistant organism have a role to play.

Thus the addition of Ofloxacin along with the steroid cover definitely helps, and another interesting aspect was that the prospect of nerve damage also is reduced.

CL81

APPLICATION OF ELECTROACTIVATED SOLUTIONS FOR TREATMENT OF OSTEOMYELITIS IN LEPROSY PATIENTS

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Electroactivated solutions which are successfully applied in surgery and stomatology (S.A. Alekhin, 1992) are proposed for using in leprosy as well. Recently valid evidence for effectiveness of such solutions in treatment of infected wounds in nine-banded armadillos inoculated with *M. leprae* has been obtained (A.A. Juscenko, 1992). The results of treatment of 46 leprosy patients with osteomyelitic foot lesions are presented. The patients were 35 - 65 years old. Osteomyelitis was confirmed roentgenologically. In 38 patients bone damages were accompanied by plantar neurotrophic ulcers, which were perforated in 8 cases. Pathogenic coccal flora was isolated in 43 cases. In the course of the treatment minor surgical operations were done on osseous and soft tissues of foot if indicated. We applied electroactivated physiological solution (0.85% NaCl) after electrodiagnosis of various duration and specified current parameters. In cases of secondary infection ulcers were washed with anolyte, i.e. the fraction (pH<7) with marked bactericidal properties. As inflammation subsided anolyte was substituted for local catholyte (pH>7), i.e. the fraction with regenerating properties. Clinical observations showed that applications of electroactivated solutions resulted in a more rapid disappearance of foci of infection with healing of ulcers. In addition, these solutions are free of allergic complications.

CL82**THE EXPERIENCE OF USING REFLEXOTHERAPY IN LEPROSY PATIENTS WITH CHRONIC NEURITIS**

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Prospects of using reflexotherapy in leprosy patients are discussed. The results of reflexotherapy of 68 leprosy patients suffering from chronic neuritis are presented. The age of the patients ranged from 25 to 72 years old, the duration of their illness was 6-42 years. 28 patients were given acupuncture according to inhibitory method with using biologically active points of common and local action. One course of reflexotherapy consisted of 10-12 procedures, the number of courses made up to 2-3. 18 patients were given 8-12 procedures of pharmacopuncture with aloe extract introduced into the points of acupuncture. 10 patients were administered auricular acupuncture of prolonged action (the needles were left in the floor of the auricle for 7 days). Points AR:28, 51, 55 and the points of pain locus were used. The treatment lasted for two or three weeks. 12 patients received 10 procedures of transcranial electroanalgesia, i.e. electrostimulation of opioid structures of CNS. By clinical observations, reflexotherapy arrested nerve pains and improved general condition with increase in movement activity of limb joints and muscle strength. A significant increase in blood levels of beta-endorphins in leprosy patients was noted that might partially account for the beneficial effect observed. The data obtained suggest usefulness of reflexotherapy as an addition to other rehabilitation measures for leprosy patients.

CL83**RESULTS IN SEROLOGICAL ASSAYS FOR DETECTION OF PREVALENCE THE ANTIBODIES TO HIV-1 LEPROSY CASES IN RIO DE JANEIRO, BRASIL.**

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Sera from 1030 leprosy patients were tested for HIV-1 antibodies. These patients are on treatment or under surveillance at two the outpatients unit in Rio de Janeiro, Brasil.

All sera were screened initially using Elisa Recombinat HIV-1 antigens (ABBOT). Positive tests were confirmed further both by using Elisa Virostika anti-HIV (ORGANON) and by Immunofluorescency - cells K37/3 (GERMANY). In this study we considered positive reactive in all 3 tests. Control group consisted of blood donors, matched by age and sex.

HIV-1 seropositivity rates were 0,29%(3/1030) among leprosy patients. Those 3 seropositivity cases are males, means of age 41 years old and lepromatous on MDT treatment. In the interview these patients refer only the sexual transmission as risk factor for HIV infection.

In this paper prevalence of HIV infection among leprosy patients dont seem to differ of the general population.

CL84**BORDERLINE TUBERCULOID LEPROSY IN AN HIV+ PATIENT: CLINICAL, HISTOLOGIC, AND IMMUNOHISTOLOGIC EVALUATION**

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Despite a HIV seropositivity rate among leprosy patients similar to that of the general population, little data exists relative to the effects of HIV infection on the clinical and immunological response to *Mycobacterium leprae*. A 52 year old HIV+ white homosexual man presented with several erythematous, anesthetic, annular plaques. Histology was consistent with borderline tuberculoid leprosy and *M. leprae* was detected by PCR. The lesions responded rapidly to MDT. The percentage and absolute number of CD4+ peripheral blood lymphocytes (PBL) was decreased (98/mm³) with an increased percentage of CD8+ cells. Immunohistochemical analysis of a cutaneous lesion revealed a marked increase in CD1a+ epidermal cells, HLA-DR+ cells, and CD25+ cells. The intradermal granulomata consisted principally of CD4+ cells surrounded by a mantle of CD8+ cells, with less than 5% CD22+ cells. There was upregulation of several adhesion molecules on PBL and in the lesion. For example, ICAM-1 was strongly positive in the epidermal basilar layer and concomitantly increased with CD11c in granulomata. These findings demonstrate that concurrent HIV infection in paucibacillary leprosy patients does not alter the general character of the *in situ* inflammatory cell infiltrate. Moreover, peripheral and *in situ* adhesion molecule expression appears predominantly influenced by the mycobacterial infection.

CL85**NEOPLASTIC TRANSFORMATION OF CHRONIC ULCERS IN LEPROSY.**

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Neoplastic transformation of trophic ulcers though infrequent, may have a fatal outcome, especially if diagnosis and treatment are delayed.

Trophic ulcers are common in patients with leprosy, yet leprosy workers are commonly ignorant of the fact that neoplastic changes may develop in such ulcers. There is insufficient literature on the subject even in standard textbooks of leprosy.

Although neoplastic transformation of chronic planar ulcers is said to be rare, the fact that, for instance 2 patients were detected within 4 months from among 23 patients admitted for care at the NBLIC, Zaria is a reminder that this unpleasant complication does occur.

Since the prognosis becomes poorer with delay in diagnosis, it is important that health workers, and especially those looking after leprosy patients should remember the possibility of malignant change in patients with refractory planar ulcers. In addition, this condition should be emphasised in textbooks and handbooks on leprosy.

Most importantly early diagnosis and effective treatment of leprosy patients will prevent malignant transformation of trophic ulcers.

CL86**HEPATITIS C AND HEPATITIS B VIRUS SERUM MARKERS IN GREEK LEPROSY PATIENTS**

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In previous studies increased prevalence of hepatitis B among leprosy patients has been noted. In order to estimate the frequency of hepatitis B and hepatitis C in Greek leprosy population this seroepidemiological study was carried out. Serum samples from 71 leprosy patients were assessed

for HBs Ag (ELISA, Abbott), whereas in 53 samples from the same original population HCV seropositivity was also assessed (ELISA, Abbott, 2nd Generation). HBsAg seropositivity (5.6%) did not differ between leprosy cases and healthy control. HCV seropositivity was found 18.9%. A most significant difference was observed between patients and healthy controls ($P = 0.001$). Total seropositivity rates revealed a statistically significant difference ($p = 0.02$) between the prevalence of HCV and HBV. It is concluded that the prevalence of hepatitis C is increased among Greek leprosy patients. In both form of hepatitis, seropositivity rates do not differ between paucibacillary and multibacillary forms of leprosy.

CL87

THE CURRENT EYE HEALTH CARE DELIVERY SYSTEM FOR LEPROSY IN LEPROSY ENDEMIC ZONE OF EASTERN INDIA

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Social stigma had kept the leprosy sufferers away from the general hospital and private clinics for ophthalmic care. Till upto late eighties of this century the leprosy patients can avail the facilities of the general hospital eye O. P. D. and hospital indoor only by concealing their disease (specially in cases of patients with deformity). Their eye care were mainly adopted by the weekly eye clinics of the leprosy home and hospitals and the field clinics which were conducted by P. M. W., non ophthalmologist Medical Officer and in a very few instances by the ophthalmologist.

But now after the successful campaign of M. D. T. the after care patients with or without deformity get admitted and stay in the general hospital indoor and in the mass eye camp just beside other non-leprosy patients. They are also being treated or operated in the same OPD & operation theatre respectively. At the same time most of the leprosy hospitals have their own ophthalmologist leprologist with special training in ophthalmic aspect of leprosy. In private clinics the eye specialist also examine the leprosy patients without much hesitation. This is really a great turn out in context of the socio medical aspect of this disease which certainly allows more specialist ophthalmic care for the sufferers and prevents the blindness from leprosy in a far better way.

CL88

RELATION OF SKIN LESIONS WITH DEFORMITIES IN NON LEPROMATOUS LEPROSY

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The skin lesions and their relation to nerve involvement resulting in deformities is studied in 176 non lepromatous cases (with 310 nerves involved) of GMLF's Referral Hospital at Wardha. It is very interesting to note, that the deformities are more when the skin lesions are over the anatomical course of nerves in case of non lepromatous cases. The severity of deformity also increases with the size of skin lesions. The patches in reaction definitely induce some deformity or other in hands, feet, eyes and face when they are present in the vicinity of the nerves supplying these parts.

CL89

THE EFFECT OF HIV INFECTION ON CLINICAL RESPONSE OF LEPROSY PATIENTS TO MULTIDRUG THERAPY IN KENYA

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A case control study was undertaken in Western Kenya to determine the effect of HIV-1 infection on cure rate, development of adverse drug reactions, development of type I or type II reactions and occurrence of relapse among leprosy patients who had been treated with WHO MDT.

Cases were HIV positive patients who were put on MDT between July 1989 to April 1990. Controls were leprosy patients who were HIV negative at the time of the study. Cases and controls were matched on age, sex, time of diagnosis, clinical classification and geographical locality. We enrolled 18 cases and 18 controls into the study.

Preliminary findings were that HIV positive leprosy cases were more likely to present with reactions than controls at the time of follow-up (OR = 4.8, $X^2 = 1$ $p = 0.4$). At the time of follow-up 15/18 controls were found to have achieved clinical cure as opposed to 9/18 (50%) of the cases, the difference being statistically significant ($X^2 = 4.4$ $p = 0.04$). Relapse/retreatment rate was found to be higher among cases (28%) as opposed to controls (5%) (OR = 6.5 $X^2 = 3$ $p = 0.07$).

These findings would no doubt have implications on the national control programmes which are implementing MDT in areas where both diseases are endemic.

CL90

HUMAN IMMUNO DEFICIENCY VIRUS (HIV) AND LEPROSY

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In countries with endemic tuberculosis and which are now being confronted with a HIV epidemic there is an increase in the number of patients with tuberculosis. This, however, is not the case for leprosy, although in these countries the number of individuals infected with *M. leprae* is similar to that infected with *M. tuberculosis*.

HIV specifically attacks T helper cells, which are essential for immunity to infection. Therefore, theoretically it is possible that HIV infected patients with a concomitant infection with *M. leprae* may provide *M. leprae* the opportunity to multiply. The leprosy spectrum is determined by the Cell-Mediated Immunity (CMI) towards *M. leprae*. The same is true for *M. tuberculosis*, but because it is basically toxic, after infection it causes spontaneous inflammation and granulocyte activation. *M. leprae* is definitely non-toxic and does not generate an initial response.

For leprosy to become clinically manifest, the CMI must recognize the bacillus and initiate a hypersensitivity reaction. During a HIV infection, this may well not be possible. The bacilli multiply without causing clinical disease. We present a HIV infected patient who developed clinical signs of leprosy, which disappeared within a few weeks. The theoretical aspects of the HIV epidemic on the incidence of leprosy are also discussed. We expect an initial decrease in leprosy which can be seen in many countries in which HIV infection is widespread and which is commonly attributed to BCG vaccination or Multiple Drug Therapy (MDT) programs. Thereafter we expect an increase of leprosy infections among those not infected with HIV.

CL91**MALIGNANT TRANSFORMATION OF CHRONIC PLANTAR ULCERS IN LEPROSY PATIENTS**

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The malignant transformation of chronic plantar ulcers may be suspected when clinical signs are present; nevertheless, pathological examination is necessary for diagnosis of certainty. Even so, the histological differentiation between carcinoma and pseudo-epitheliomatous hyperplasia may not be easy.

The authors report on 22 cases of chronic plantar ulcers suspected of malignant degeneration in ancient leprosy patients: 13 of them were shown to be effectively carcinoma while the rest were pseudo-epitheliomatous hyperplasia.

Accurate diagnosis is most important since the line of treatment differs according to the nature of the lesion: amputation in case of carcinoma, deep local excision in case of hyperplasia (depending on healing possibility and functional capacities of the foot). In case of carcinoma, the regional lymphnode dissection should not be systematically considered.

From available data in literature, it is difficult to ascertain whether the malignant transformation of plantar ulcers is frequent. Nevertheless this possible event should be kept in mind and, also, should be remembered during training courses for health workers in leprosy control programmes or in non specialized health programmes when integration of vertical programmes is planned.

CL92**SQUAMOUS CELL CARCINOMA IN CHRONIC ULCERS OF LEPROSY PATIENTS**

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An analysis is presented of case histories of 38 consecutive cases of squamous cell carcinoma (SCC) in chronic ulcers of leprosy patients treated between 1981 and 1990 at McKean Rehabilitation Centre, Northern Thailand. The study included 37 individual patients; 29 males and 8 females. The average age was 60 years, the average duration of the ulcer was 12 years. Four patients (11%) had histories of SCC on other extremities. Metastatic spread was observed in 2 cases (5%), both instances leading to death. The commonest site of involvement of SCC was the foot, but it was seen on the knee in 1 patient and on the hand in 2 others. The incidence rate of SCC in the group at risk (leprosy patients with disability grading 1 and 2) was 0.79:1000 per year.

A case-control study was performed with the objective to identify factors associated with the development of SCC in plantar ulcers of leprosy patients. No associations were found between the development of SCC and factors concerning race, profession, place of origin, duration of leprosy, type and duration of leprosy chemotherapy, presence of bone involvement and type of ulcer care given. The only statistical valid finding was that the duration of the ulcer was significantly lower in the group with malignant change.

It is concluded that SCC in chronic ulcers in leprosy patients cannot be considered rare and emphasizes the need for an active policy of disability prevention in leprosy programmes. Factors other than ulcer duration need to be searched for, in order to identify factors influencing malignant change in plantar ulcers of leprosy patients.

CONTROL AND ERADICATION

CO1**ON THE ROLE OF THE GOVERNMENT IN LEPROSY CONTROL**

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Before the founding of the People's Republic of China, the local governments of Yulin paid little attention to the prevention and treatment of leprosy. Leprosy transmission developed more and more seriously. Not long after the founding of New China, the local governments of Yulin have been not only involved in leading, planning and implementing leprosy control programme and have provided with necessary resources including manpower, lands and funds, and also have mobilized the whole society to support the work against leprosy. As a result the transmission of leprosy was soon controlled and in 1990 this disease was basically eliminated as a public health problem in all cities and counties of this region. Both the incidence and prevalence rates of the disease dropped sharply. The results of the research showed that different attitudes toward leprosy of different governments made the results completely different. The more the government is involved, the faster leprosy will be eliminated. Based on the findings in the research, the authors realize that leprosy is mainly a social disease. For the time being and also in the future, the important factors are the attention, involvement and support of the community and the government, especially in the third world countries where leprosy is seriously endemic.

CO2**THE DISABLED LEPROSY PATIENT AS PARTNER IN LEPROSY CONTROL: STIGMA AS SIGNPOST**

Rien Verhage

N. S. L., Bukuru, Nigeria.

The strategy of accelerated implementation of MDT presupposes the political commitment for the allocation of resources, a well motivated leprosy control organisation and a relatively stable political and social environment. The result of this strategy in N. Nigeria will be a sharp decline in the prevalence of leprosy from 15 to 1.7 per 10 000 inhabitants by the end of 1995. The side effects of the diminished visibility of the leprosy problems are likely to create three counterproductive problems: diminished political commitment and funds, diminished motivation of leprosy control staff due to lack of career prospects, and diminished care for "cured" leprosy patients with disabilities. The most common solutions like integration of leprosy control into PHC or combination with TB control do not address sufficiently the problems of care of disabled patients, the motivation of health personnel and the instability of the political and social environment. In addition or as alternative to these solutions the systematic participation of (ex)leprosy patients and patient associations is discussed. The experience with (ex)patients as voluntary leprosy workers has shown that they could become powerful