

for transmission? How late are new patients detected? Do other factors than leprosy control contribute to trends in leprosy incidence? This paper explores some of the uncertainties that govern past and future trends in leprosy by applying the leprosy simulation model SIMLEP using different sets of assumptions. The observed new case detection trend in major endemic countries is mimicked from 1985 onwards, and future leprosy incidence and new case detection are projected.

Preliminary simulations show that future trends and the impact of leprosy control on these trends strongly depend on assumptions about uncertain aspects of leprosy epidemiology. It can not be excluded that leprosy incidence will decline only slowly in the near future. The epidemiological uncertainties about leprosy should be accounted for in making future policy decisions in leprosy control. Continued careful monitoring of areas with good quality MDT treatment registries may partially resolve these uncertainties.

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Ep 372

DISAPPEARANCE OF LEPROSY FROM NORWAY : ANALYSIS WITH THE LEPROSY SIMULATION MODEL SIMLEP

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SIMLEP is a computer simulation program for modeling the transmission and control of leprosy which can be used to predict epidemiological trends. In the present validation study, SIMLEP is shown to reproduce the declining incidence of leprosy in Norway between 1856 and 1920 well.

In order to fit the Norway data, an autonomous declining trend in infection risks, reflecting improvement in for instance living conditions, had to be assumed. The autonomous trend and hospitalisation of patients, used at that time as preventive control measure, each explained roughly half of the decline. The decline in Norway coincided with a relative increase in incidence rates at older ages which was reproduced well by assuming that 10% of new cases had very long incubation periods. Another good fit of the data was obtained under the assumption that most infections take place in the first part of the contagious period. The assumption that incubating cases are contagious resulted in a third good fit. Autonomous trends have to be stronger for the second and third model because their assumptions reduce the effectivity of hospitalisation.

The fact that different assumptions can explain the Norwegian data about equally well, reflects the lack of a diagnostic test for leprosy infection and our lack of knowledge on the transmission dynamics of leprosy. It is of concern to today's leprosy control that the three model variants lead to different predictions about the impact of control strategies. Further, validation efforts on complete, longitudinal data from different control programmes in the dapsone and MDT eras can lead to reduction of the uncertainty about the key transmission parameters involved in leprosy.

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CI 114

CLAW HAND IN A CASE OF TT LEPROSY DEVELOPING AFTER 1.5 YEARS M.D.T.

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This case report is being presented to highlight the following points:

- i) There is a need to re-examine the efficacy of Fixed and Short Duration M.D.T. in leprosy.
- ii) There is a need for regular follow up of patients with timely intervention to prevent new paralysis, during and after M.D.T.
- iii) There is a need to be aware that some leprosy patients, as in this case, prefer to go to another doctor when their symptoms do not improve, and M.D.T. is stopped as per W.H.O. and N.L.E. P. guidelines.

Case Report

A 23-year old male clerk from Bihar, who is working in Punjab, developed an area of sensory loss on the right wrist 31/2 years before reporting. The patient was diagnosed outside as a case of leprosy, after a biopsy, and he was given Cap. Rifampicin 600 mg on two days a month and

D.D.S. 100 mg od for 1 years, after which his treatment was stopped. Two months after stopping treatment the patient noticed an erythematous raised anaesthetic lesion on the site of previous sensory loss on the Rt wrist. The patient returned to his doctor but was not given any further anti-leprosy treatment. Two weeks later he developed a right claw hand, but unfortunately did not return to his doctor, as he lost confidence. The patient was subsequently referred to our hospital during a skin camp in the locality.

On examination, there was a hypopigmented, and erythematous, anaesthetic lesion present on the dorsum of

right wrist and hand. Part of the lesion had a finely-pebbled margin. There was a right claw hand, and the right ulnar nerve was grossly thickened and slightly tender.

Continued on next page Investigations and treatment : A skin biopsy was performed, and the patient was started on

M.D.T., with daily Rifampicin, Clofazimine 100 mg BD, DDS 100 mg od, and Tab. Prednisolone 40 mg/day.

Discussion: It is probable that this patient's claw hand deformity might have been avoided because he had been given timely M.D.T. plus oral prednisolone after the occurrence of his anaesthetic plaque (? Reversal reaction), after more than 1 1/2 years of supposed overtreatment with M.D.T.

This case also emphasizes the need for a close rapport and confidence between the leprosy patient and his doctor. It might be better in some or many cases to tailor the anti-leprosy treatment according to the individual patient's requirements, rather than according to a fixed and rigid schedule.

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A CASE OF TUBERCULOID LEPROSY RESEMBLING LUPUS VULGARIS

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A 40-year-old housewife presented with an asymptomatic plaque on the left flank for one year. The plaque had ulcerated, with sero-sanguinous discharge, four months before her visit. She also developed an asymptomatic papule on the left forearm.

On examination, there was a well-defined plaque 7 cm x 3.5 cm situated on the left flank. The plaque had a greyish-black margin, an adherent- necrotic crust, and a superficially ulcerated centre. There was also a small, reddish-brown soft nodule present on the left forearm. The peripheral nerves were not thickened, and there was no sensory or motor loss of the hands and feet.

Investigations: The Mantoux test was negative and the chest X-ray was normal. The skin smears were negative for lepra bacilli. The skin biopsy from the plaque and nodule showed well-defined, compact granulomas suggestive of tubercuioid leprosy, lupus vulgaris or sarcoidosis. Points in favour of leprosy were periapendageal and perineural involvement. The biopsy from the plaque showed one suggestive totally destroyed nerve with only a few recognizable Schwann cell nuclei.

On the patient's revisit after antibiotic therapy, the plaque had dried, and there was more appreciable sensory loss, but still not complete loss. The patient was diagnosed as a case of Tuberculoid Leprosy (BT/TT), and advised M.D.T.

Discussion: This case is being presented to emphasise the importance of expert clinico-pathological correlation and histopathology, especially with regard to nerve infiltration, in diagnosing atypical cases of TT and BT leprosy.

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UNUSUAL PRESENTATION OF LEPROSY

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No age is immune to the disease leprosy. Generally, leprosy cases are found in early childhood. During routine survey of leprosy cases, a four year child was detected in sector Gangakhed Leprosy Control Unit, Parbhani District. Patches were present since one year. Considering deficiency patches, the child was treated with anti-helmenthic drugs, vitamins and iron, but there was no response. Lastly, the patient was diagnosed as a multi-bacillary case of leprosy and anti-leprosy treatment was started (multi-bacillary regimen). The patient responded to treatment and dramatically, the patches started regressing after the completion of the fourth dose. After completing ten doses, many of the patches disappeared.

Conclusion: Child case with patches may be a leprosy case unless and until it is proved otherwise.

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CI 156

NAIL INVOLVEMENT IN LEPROSY

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INTRODUCTION : Leprosy is a multi system disease with wide ranging manifestations. All organs and systems are involved and have been studied quite extensively. Although dystrophic changes and mutilation of hands and feet are considered more or less a part of the symptomatology of the disease, nail changes have received only a passing reference in literature.

MATERIALS & METHODS : Two hundred patients of leprosy, mostly belonging to the poor socio-economic class, in the age range of 20-40 years, hundred

each from the paucibacillary (PB) and multibacillary (MB) group, irrespective of treatment and reactional status were studied. Fifty age and sex matched control subjects from the normal population who were not suffering from any disease known to affect the nails and 32 treated patients of leprosy residing in a nearby leprosy colony were also taken up for the study.

RESULTS : Nail changes which occurred with similar frequency in the PB and MB groups on comparison with the control group were excluded from the analysis. Out of a total number of 100 PB patients, 57 (57%) showed nail changes. Forty (40%) patients showed changes in the finger nails, with an involvement of average of 3.9 nails per patient. Thirty eight (38%) patients showed changes in the toe nails, with an average of 3.6 nails per patient. The commonest change observed was longitudinal melanonychia (34.4%) in the finger nails and longitudinal ridging (46.7%) in the toe nails. Out of a total of 100 MB patients, 93 (93%) showed nail changes. Seventy-two (72%) patients showed finger-nail changes, with involvement of an average of 5.7 nails per patient. Eighty-four (84%) patients showed changes in the toe nails, with an average of 6.2 nails per patient. The commonest nail change observed was longitudinal melanonychia (14.8%) in the finger nails and subungual hyperkeratosis (25.3%) in the toe nails.

Out of a total of 32 colony patients, 31 (96.9%) showed nail changes. Thirty one (96.9%) patients showed finger nail changes with an average of 7.9 affected nails per patient. Thirty one (96.9%) patients showed toe nail changes with an average of 8.4 nails per patient. The commonest nail change observed was rudimentary finger (29%) and toe (21.1%) nails.

CONCLUSIONS : Nail changes are common in leprosy, more so in the MB spectrum. Several changes have been found in impressive numbers but whether all are specific for the disease will remain speculative unless a clinico-pathological study correlates our observations.

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CI 157

INVOLVEMENT OF MALE GENITALIA IN LEPROSY

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INTRODUCTION : Although involvement of the male genitalia particularly of the gonads is well known in leprosy, lesions of leprosy are not commonly found

on the genital skin probably due to difficulty in locating them by examination in routine clinical setups.

MATERIALS & METHODS : From March 19 to July 1999, we screened 467 male patients attending our leprosy clinic for genital involvement. **RESULTS:** Genital lesions were observed in 6.6% of all male cases of leprosy. They were seen most frequently in lepromatous leprosy (25.8%), followed by borderline lepromatous (13.3%) and borderline tuberculoid (1.4%) leprosy. There were 293 (62.7%) patients with borderline tuberculoid (BT) disease, 143 (30.6%) had borderline lepromatous (BL) and 31 (6.6%) had lepromatous (LL) disease. Out of 467 patients only 31 (6.6%) had lesions on the scrotum or penis either alone or on both the sites. Lesions on external genitalia were present in 4 out of 293 (1.4%) patients with borderline tuberculoid (BT), 19 out of 143 (13.3%) patients with borderline lepromatous (BL) and 8 out of 31 (25.8%) patients with lepromatous (LL) disease. Mean age of the affected men was 31+ 8.5 years and the mean duration of disease was 6.0 ± 2.8 years. Seven patients were in reaction (BT-2, BL-3, LL-2). Five patients (BT-2, BL-3) had Type 1 reaction and two patients with LL disease had Type 2 reaction.

CONCLUSIONS : The incidence of 6.6% for genital lesions in our study indicates that such lesions are not as uncommon as reported before. They are however, likely to be missed if not looked for carefully. Their recognition becomes important because genital lesions produced by other diseases may require more serious attention than mere identification.

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CI 205

RARE NEUROLOGICAL CONDITIONS MASQUERADING AS LEPROSY

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Pure neurotic leprosy mimics a number of neurological conditions. Careful and meticulous clinical, especially, neurological examination along with detailed investigations is often necessary to arrive at the correct diagnosis. All this is especially necessary in this consumer conscious era, where one can land into unnecessary legal complications resulting from giving MDT to non-leprosy cases.

We present a unique study of five cases (2 syringomyelia, 3 HSN-I). All of whom were misdiagnosed as leprosy initially with some even receiving Anti-Hansen's therapy prior to our evaluation.

Our aim of presentation is to highlight upon the neurological features that helped us to distinguish these cases from leprosy.

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CI 231

LEPROMATOUS LEPROSY MASQUERADING AS CERVICAL LYMPHADENITIS

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Leprosy can manifest in many unusual ways and the diagnosis in such situations can be missed. We describe a patient who had a single nerve involvement in the neck which manifested as a swelling and was misdiagnosed as cervical lymphadenitis by the internists. A 25-year-old electrician had a 2-years history of gradually progressive asymptomatic swelling on the left side of the neck. There was no history of any skin lesion associated with the swelling or elsewhere on the body. The patient was initially seen in the out patient department of medicine where a diagnosis of tubercular cervical lymphadenitis was considered. A fine needle aspiration cytology, repeated twice, revealed ill-defined granulomatous infiltrate with numerous acid fast bacilli. Examination revealed an ill-defined, firm, mildly tender swelling of 3 x 2 cm. with uneven surface on the left side of the neck which was a thickened left greater auricular nerve. There was a faintly erythematous 5 x 2 cm. macule with minimal atrophy on the pinna of the left ear extending on to the left cheek. The lesion had 50% sensory loss to temperature while the sensations to pain and touch were unaltered. The supra-orbital nerve on the left side was also thickened. Examination of the eyes revealed partial lid lag of the left eye. Nerve biopsy revealed ill-defined granulomas consisting of epitheloid cells with numerous lymphocytes and histiocytes. Ziehl Neelsen's stain for acid fast bacilli was strongly positive with BI of 5+. Skin biopsy from the pinna of the ear showed atrophy of the epidermis and a grenz zone with focal perivascular and periappendigeal lymphohistiocytic infiltrate in the dermis. A diagnosis of lepromatous leprosy was made and the patient was treated with multi-drug therapy as recommended by WHO for multi-bacillary leprosy.

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CI 312

CLINICAL PRESENTATION OF LEPROSY AMONG PATIENTS SEEN IN A TERTIARY DERMATOLOGIC CENTRE IN SINGAPORE

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A total of 65 cases of leprosy were seen at the National Skin Centre in Singapore between January 1995 and December 1999. About 90% of them present with a skin problem to a doctor. Most of them were asymptomatic, presenting as cosmetic complaint, while a few had pain and discomfort due to lesions of Type I and Type II Reactions. Red and white patches, which may be flat or raised were the most common morphology. One patient present as recurrent blistering lesions of the finger due to heat injury.

About 5% of patients presented with nerve thickening, abscess and loss of nerve functions to the orthopedic surgeons and neurologist and diagnosis were made on histological examination of tissue specimen removed during surgery.

Two patients presented in a moribund state due to widespread vasculitis of Lucio's phenomenon and succumbed to the disease rapidly.

In a number of cases, the diagnosis was not suspected until a biopsy was done and diagnosis made by a histopathologist.

As leprosy becomes less endemic and with the progressive closure of specialised diagnostic and treatment centres, diagnosis of leprosy will depend more on medical practitioners, who have the first contact with a patient. Knowledge of its presentation among them is important in the management of leprosy in the future.

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CI 385

USE OF DAPSONE IN MONITORING COMPLIANCE TO DRUG INTAKE AMONG LEPROSY PATIENTS

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Compliance to treatment is perhaps the most important factor in success of the treatment of leprosy with Multi-drug Therapy Regime. We have been performing detection of dapsone in the urine as a mean of monitoring compliance to dapsone.

A patient can have a test done prior to consultation with the doctor randomly and without any prior notice.

Most patients have an average of 2 tests done per year. Most patients with specimen showing a positive test for dapsone claim to have been taking the drug regularly. Among those with negative test, most will also claim to be complaint but a few plead forgetfulness or busy work schedule for not taking the drug.

Our experience shows that a positive test has very little clinical value as patient learn very quickly to circumvent the embarrassment by taking the drug just prior to attending the clinic. A negative test, barring technical errors, is more useful as it show it is hard to cheat.

Though of limited value, we found urine dapsone detection using Ehrlich's reagent to be useful as it deters some patients from not taking the prescribed medication.

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CLINICO-PATHOLOGICAL COMPARATIVE STUDY BETWEEN COUNT OF BODY LESIONS AND THE NUMBER OF BODY ZONES INVOLVED IN LEPROSY

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The counts of body areas or zones involved are gaining importance as an alternative method to the number of lesions, in classifying leprosy patients into PB or MB patients for the purpose of therapy. In the present study we have attempted to compare the commonly practiced count of body lesions to the body areas or zones system of classification. We have included 108 patients of leprosy (male 80, female 28) for this study. We have divided the surface of the body into 7 areas - 2 upper limbs, 2 lower limbs, front and back of chest (2), and head and neck (1). The number of lesions in each patient was counted and zones involved charted. Slit skin smears and skin biopsies were performed on all patients.

It was observed that 34 patients had only single lesion of leprosy, whereas, patients with 2 to 5 lesions were 24, 6 to 10 lesions were 9, > 10 lesions were 41 patients. In patients with single lesion, the commonest clinical type was BT in 29 out of 34 patients and 4 patients each were of TT and Ind. Leprosy (IL). In contrast, on histopathology, BT was observed in only 13 out of 34 patients, 10 showed features of IL and 2 showed features of BL in histology. In 2 to 5 lesions group, all the 24 patients were clinically BT, whereas, on histopathology, only 16 out of 24 showed features of BT, while two showed features of BL. In 6 to 10 le-

sions group, 7 out of 9 patients showed clinical features of BT and 2 of BL. In this group clinico-histopathological correlation was better. In patients with > 10 lesions (41 pts), 24 showed clinical features of BT and 12 of LL.

When the number of zones of involvement was looked for, one zone involved in 43 patients, of which 37 were clinically diagnosed as BT and 4 as IL. On histopathology, 21 cases showed features of BT and 9 of

IL. In patients where 2 zones were involved (16 pts), 14 belonged to BT and 2 to BL clinical types while on histopathology, 7 showed BT, 2 BL and 5 IL features. In groups where 3 to 5 zones were involved (21 pts), clinico-histopathological correlation was good in BT and BL types. In patients with 6 or more zones, (28 pts) clinical and histopathological features correlated well, with most patients belonging to BL or LL leprosy. When the patients with < 2 zones were compared with patients with < 5 lesions, following observations were made. The number, of patients were 59 to 58 respectively in each group. There was very good correlation (96 to 100%) clinico-histopathologically between the two groups with most of the patients (89 to 94%) belonging to IT or BT clinical types. These results indicate that when two or less than two body areas are involved, it has similar significance as the presence of 5 or less than five lesions, for the purpose of therapy.

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BACTERIOLOGICAL PROFILE OF A LEPROSY CONTROL PROJECT

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Gremaltes Referral Hospital is doing leprosy control work in northern part of Chennai since the last three decades, covering a population of 10.68 lakhs in 1971, 15.15 lakhs in 1981,

21.22 lakhs in 1991 and 11.60 lakhs now. 56,932 patients has been detected over the years by a band of para medical workers, supervisors and doctors. The NLCP / NLEP guidelines are being followed from the beginning. Chennai District was put on MDT in February 1990 whereas Gremaltes used MDT since August 1981 in a phased manner. Skin smears have been taken for all eligible cases and they were stained and read by qualified smear / laboratory technicians. The district laboratory technician of the District Leprosy Society does cross checking.

The results of the bacteriological indices and morphological indices over the last eleven years viz-a-

viz the patient population is presented. The steady trend of BI (average: 7.69, range:

5.09 to 9.27) and fluctuating trend of the MI (average: 5.05%, range 1.39% to 10.10%) is discussed in the presentation.

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CLINICO-HISTOLOGICAL STUDY OF REVERSAL REACTION

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276 patients comprising of 157 active and 129 reactive Borderline Leprosy were followed up to 10 years. All patients had biopsies initially and at regression. 47 patients had three biopsies and 8 patients had 4 biopsies at times of varying clinical activity. 11 of the active and 13 of the reactive cases relapsed. Downgrading was observed in 23 reactive cases and 6 active cases. Neurological disabilities were encountered in 37 active and 30 reactive cases but in the latter, particularly in mid-borderline cases recovered with the subsidence of reaction.

While dealing with Reversal Reactions, it will be useful to mention the place in the spectrum namely Neurological disabilities were BT, BB, or BL since their progress differs widely.

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CI 265

A RETROSPECTIVE STUDY OF 35 CASES OF PURE NEURITIC LEPROSY

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Objective : To study the epidemiological and clinical features of pure neuritic leprosy.

Methods : Read the case individual records, give the physical examination to patients and determine the pure neuritic cases.

Results : 35 pure neuritic leprosy patients were found among 616 cases with the proportion of

5.68%. Among these neuritic cases, the ratio of male to female was six with average onset ages of 32.57 years

old and their classification were mostly TT type. The percentages of one, two, three and more nerves involved in neuritic cases were 80%, 8.57% and 11.43% respectively. The ulnar nerve was most frequently involved and common peroneus nerve was the second one. All of 35 patients have sensory impairment with trunk type of 82.86% (27/35) and glove-sock type of 50% (2/4) of which happened in 3 and more nerves involved cases, in addition, 82.86% cases have the motor impairment. A biopsy taken from numb area containing a little nerve branch infiltrated in a case with 4 nerve damage showed negative AFB however, a nerve biopsy sampled from a case with 2 nerves involved showed positive AFB with 2 plus.

Conclusion : Pure neuritic leprosy cases accounted in a proportion and should be treated with MB regimens. Early diagnosis and classification were very important. It is suggested that referring system be established for early diagnosis and treatment to reduce disability and control infection.

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CI 348

ADENOSINE DEAMINASE ACTIVITY IN ACTIVE LEPROTIC PATIENTS

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Adenosine deaminase (ADA) is a purine catabolic enzyme that catalyses the irreversible deamination of adenosine to inosine and 2-deoxyadenosine to 2-deoxyinosine respectively.

It was found that ADA was markedly increased in certain diseases and its estimation is used as a diagnostic tool in some diseases as pleural effusion due to tuberculosis, C.S.F., pericarditis. Its activity could differentiate tuberculosis from other pathognomonic disorders.

The aim of this work is to estimate ADA activity in leprosy patients and if the test may help in diagnosing leprosy as in case of tuberculosis.

Leprotic patients were diagnosed by the direct examination of the modified Z.N. stained skin smears and the patients were accordingly classified to the different types of leprosy. ADA activity was measured in these patients by the sensitive colorimetric method which is based on indirectly measuring the formation of ammonia when ADA acts on an excess of adenosine. The results obtained were compared with age matched apparently healthy Egyptian subjects. The results will be recorded, statistically analysed and will be presented.

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CI 364**STEROIDS, CYTOKINES AND TYPE 1 (REVERSAL) REACTIONS**

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Corticosteroids remain the mainstay of treatment for leprosy reversal reactions. We were interested to examine the effect of steroids on cytokine profiles in reactional leprosy lesions particularly in respect of the timing of cytokine production and cellular recruitment into lesions. Do steroids switch off the Th1 drive associated with reactions and is this maintained?

We have studied 15 patients with Type 1 reactions. Biopsies were taken at day 0, 7, 28 and 180 days. Staining was done for IFN- γ , IL-12 and iNOS. All patients were put on a standard reducing course of steroids starting at 30 mg daily after their first biopsy.

Prednisolone treatment had little effect on the cellularity and cytokine profiles at day 7. By day 28 significant decreases were found for IFN- γ , IL-12 and iNOS for most patients. Some patients maintained cytokine production at day 28 and even at day 180.

These data illustrate the strong Th1 profile of Type 1 reactional lesions, the relatively slow response to therapy and the continuing activity at 180 days. The variation in individual responses emphasises the importance of looking at individual patient responses. Further prospective studies will be required to determine whether patient with high intra-lesional cytokine levels are at risk of recurrent reactions. The implications of these findings for future treatment of reactions will be discussed.

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CI 369**THE USE OF ML-DIPSTICK AS AN ADDITIONAL TOOL TO CLASSIFY LEPROSY PATIENTS**

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Leprosy control faces the problem of misclassification of leprosy patients due to a lack of reliability of the classification system based on clinical criteria only. The correct classification of leprosy patients into paucibacillary (PB) and multibacillary (MB) is of crucial importance as the MDT regimen prescribed is based on this classification. Undertreatment may increase the

risk of relapse and may also prolong the time that the patient remains infective.

Our investigation sought to determine the usefulness of the ML-dipstick, a simple field assay to detect IgM antibodies to PGL-I of *M. leprae*. We conducted a trial on 264 leprosy patients comparing two methods for classification with the bacterial load in the skin.

Classification based on the number of lesions only (> 5 lesions = MB) was found to be 85% sensitive and 81% specific in the identification of MB patients. An increase in sensitivity could have been achieved when classifying patients considering both the number of lesions and the dipstick result. This would mean that patients are classified as MB when either dipstick positive or having more than 5 lesions, or being positive for both methods of classification. Patients negative for both dipstick and number of lesions would be classified as PB. This combined method was found to be 94% sensitive and 77% specific. The classification based on only the number of lesions left 15% of the BI positive MB cases classified as PB, while the combined method of ML dipstick and number of lesions left only 6% BI positive cases classified as PB.

In conclusion, introduction of the ML-dipstick as an additional tool besides clinical investigation can contribute to improved classification of leprosy patients for treatment purposes.

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CI 409**SIDE EFFECTS OF DAPSONE AMONG PATIENTS TREATED FOR LEPROSY : A RETROSPECTIVE ANALYSIS**

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All leprosy patients receiving dapsone as part of MDT regime will have their G6PD level assessed as a baseline. The haemoglobin level, reticulocyte count, total white and differential counts and liver function tests were also done, as baseline and then at 3 monthly interval to monitor for the side effects.

Drug eruptions and hepatitis are uncommon adverse reaction and dapsone among our patients. A transient drop in haemoglobin levels and rise in reticulocyte count above 2% were commonly seen among the patients, but very few necessitates discontinuation of treatment.

No cases of drug hypersensitivity syndrome was observed, even though there were 6 cases of dapsone hypersensitivity, comprising dermatitis, hepatitis and leucocytosis, were seen among patients given for other skin diseases like vasculitis.

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CI 92

LEPROSY IN VARANASI

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The objective of the study was to see if the pattern of leprosy has changed after 17 years of MDT under NLEP in the district of Varanasi. All the patients attending a specialized dermatology clinic who were diagnosed as having leprosy and had not previously received MDT were recorded. The period of study was from 1st January to 30th June 2000. A total of 243-untreated first timers were analyzed according to age, sex, type of leprosy and duration since signs of leprosy were first perceived. This data was compared with the records of patients seen ten years ago. It has been a general observation by the field workers in leprosy that monolesions or other paucibacillary cases have increased after the successful implementation of MDT under NLEP. However, the clinic data from a specialized dermatology clinic which caters to both rural and urban population has thrown up data contrary to the field observations. Deformities, however have significantly reduced among the patients presented in the study. The possible reasons for differing data in the field and clinic setting will be discussed.

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CI 223

THE CLINICAL SPECTRUM OF LEPROSY - A REVIEW

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A clinical spectrum of various forms of leprosy in Asia has been pictorially presented in a series of 54 slides collected over a period of 25 years in India and Bangladesh. Ranging from Mono lesion to PB, MB among women, men and children, with and without complications, of different forms of Type I and Type II reactions are lucidly presented in beautiful colours from Asian countries. Atypical and unusual involvement of eye, nose and extremities are highlighted in a fascinating and imaginative manner, with a view to impress field staffs, medical

students and doctors. The protean manifestations of leprosy are presented in a variety of clinical photographs. These slides can be demonstrated in a teaching session for all leprosy workers. Within the time limits many differential diagnosis also can be discussed.

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CI

CLINICAL ANALYSIS OF 111 LEPROSY PATIENTS WITH TYPE-1 LEPRO REACTION

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Objective : To investigate the incidence, clinical features and management of Type I reaction (RR) in the leprosy patients treated with WHO-MDT regimen.

Methods : To analyse the incidence, relation with classification, clinical features, occurrence and persistence of RR in 111 patients with RR.

Results : Among 2004 leprosy patients treated with MDT, 111 cases are diagnosed to have RR (5.54%) and 73.38% of them are borderline patients (BT, BB and BL). Of 111 patients with RR, there are 4 cases with skin lesions (3.60%), 93 cases with skin lesions and nerve impairment (83.78%) and 14 with nerve impairment (12.61%). 102 patients are diagnosed to have RR before and during MDT (91.89%), including 58 cases occurred in the first year of MDT (52.25%), and 69 cases with RR persisted for 6 months (62.16%).

Conclusion : Among leprosy patients treated with MDT, the incidence of Type I reaction is

5.54%, most cases are the borderline patients occurred in the first year of MDT. Type I reaction causes nerve impairment and persists for long time. Sufficient doses and course of steroid therapy can prevent and decrease occurrence of deformity.

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CI 277

CANCER AS CAUSE OF DEATH IN LEPROSY PATIENTS IN JIANGSU YANGZHOU OF CHINA

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There were 19463 of cumulative leprosy cases detected from 1950 to 1989 in Yangzhou Prefecture which is located in Jiangsu Province of eastern China and with the population 9151469(1989), 7 685 810(1970) and 5 962 066(1950).

The general situation of leprosy cases showed the following :

Among leprosy cases, 986 who died of with clear causes were processed. Among them, 318 cases died from cancer. The proportion of death in leprosy cases was different to general population, especially in women which had higher risk than men who die from cancer (OR=1.35, $p<0.05$). The proportion with death due to cancer has increased in recent years. The order of death from cancer, the first cause was the stomach cancer, second oesophagus, third liver, which was alike in general population of Yangzhou. The results indicated that death from cancer had no relationship with leprosy type. Leprosy cases suffering from cancer seemed to have a correlation of period of leprosy disease.

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CI 295

A SEVERITY GRADING FOR PATIENTS WITH ERYTHEMA NODOSUM LEPROSUM

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Patients presenting with erythema nodosum leprosum (ENL) have a wide variety of symptoms and severity. In order to rationally treat new patients with ENL, and to monitor their response to therapy with thalidomide, we have developed a severity scale for ENL. The following symptoms were included : the extent of ENL nodules, the character of ENL lesions, peripheral oedema, body temperature, anorexia, malaise, lymphadenopathy, hepatosplenomegaly, arthritis, orchitis, iritis, nephritis and neuritis. Scores for these symptoms were arbitrarily weighted to reflect their relative importance. Mild ENL was defined as a score of <11 in the skin without blebs, pustules or ulcers and with an extracutaneous score of <9 . Severe ENL was defined as a skin score 11 or the presence of blebs, pustules or ulcers, or an extracutaneous score of 9. We present data on 13 patients receiving thalidomide treatment whose scores were measured initially, and after 3, 7, 14, 21, and 28 days. The application of this severity score to the treatment and monitoring of ENL is discussed.

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CI 308

SQUAMOUS CELL CARCINOMA IN CHRONIC PLANTAR ULCERS IN LEPROSY : CAULIFLOWER GROWTHS REVISITED

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Neoplastic change in longstanding plantar ulcers in leprosy patients have been well described (Srinivasan 1971) and at least one large series of cases documented (Richardus 1991, 38 cases). We present a large retrospective review of 40 cases over an 18 year period from a tertiary referral hospital in Nepal. Clinical features with clinico-pathological correlation, are detailed. Atypical features of biopsy and technique are described. Three out of forty patients (7.5%) died of metastatic disease. The role of groin node biopsy or fine needle aspirate are discussed. The place of groin node dissection and its role in early management, is presented together with a decision algorithm. Methods of local clearance and plastic reconstruction are also discussed.

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CI 329

PANSAB - A SIMPLE SYMBOLIC APPROACH FOR THE DIAGNOSIS OF LEPROSY

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Leprosy is a chronic granulomatous disease with protean manifestations. The range of clinical manifestations and complications depend upon the immune response of the patient. Those with a high immunity tend to develop a paucibacillary type of leprosy and those with a low immunity a multibacillary type of leprosy. As an infectious disease, the delay in diagnosis and treatment contributes to a degree of transmission in the community. The long course of antileprotic treatment is started depending on clinical diagnosis which is based on the clinical presentation and examination of the skin, nerve and mucous membranes. The clinical diagnosis are sometimes confirmed by simple to more sophisticated tests available in the institution. For easy clinical diagnosis of leprosy, a simple systematic approach is search for and PANSAB is a mnemonic which can be applied to come at a conclusion. Here, P stands for patch or plaque, A stands for anaesthesia, N stands for nerve thickening, S stands for slit skin smear examination for AFB, A for autonomic dysfunction resulting in anhydrosis, warmth and hair loss and B for biopsy of the lesion for typical histopathological picture of leprosy. The expressions of the letters are tried sequentially to come at clinical diagnosis. The chrono-

logical steps involved in clinical diagnosis will be described in detail with application in the field work.

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CI 365

LESSONS FROM THE DELAYED DIAGNOSIS OF LEPROSY IN LONDON, U.K.

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28 patients with a new diagnosis of leprosy have been seen at the Hospital for Tropical Diseases, London in the 3 years 1995-8. We have reviewed their case notes to establish their geographical origin, symptoms, skin signs, and neurological evaluation at presentation. We also noted how many doctors they had seen before the diagnosis of leprosy was made and the incorrect diagnoses made.

54% of our patients came from the Indian subcontinent, but all major leprosy endemic areas are represented. Three patients were Caucasian British but acquired leprosy during long residences in the Indian subcontinent. The median time from onset of symptoms to diagnosis was 3.1 years. The mean time from entry to the UK to diagnosis was 7.9 years.

All types of leprosy were seen. 21 patients had typical skin lesions and 22 had thickened peripheral nerves. 8 patients presented with reversal reactions and 1 with erythema nodosum leprosum.

In 23 cases the diagnosis of leprosy had been delayed. Misdiagnosis as dermatological (7), neurological (6) and orthopaedic/rheumatological conditions (9) was common. 61% of patients had significant nerve damage at the time of diagnosis that required specialist management.

This case series has implications for the development of leprosy services as the leprosy case load diminishes in previous endemic countries. Leprosy patients will no longer present to specialist leprosy services. Doctors in many specialities will need ongoing medical education to ensure that they recognise leprosy.

Conclusion : Leprosy patients outside leprosy endemic areas present to a wide range of doctors. Misdiagnosis can only be reduced if doctors consider the possibility of leprosy in patients from endemic areas with skin rashes, neurological or joint symptoms.

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CI 374

THE LEPROSY AND THE BURULI'S ULCER ANALOGIES AND DIFFERENCES Dr.Jose

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The analogies and differences of these two Mycobacteriosis are exposed to coincide in belonging to the same bacteria family, in their geographical localization, in tropical and subtropical areas and in affecting populations with faulty socio-economic conditions.

Most notable differences in the Buruli s ulcer are the following : it is possible to cultivate, it has a short period of incubation, its location takes only place in the skin and subcutaneous cellular tissue, the Mycobacterium ulcerans produces an exotoxine, its localization is extracellular and the treatment is eminently surgical.

It must be insisted in the great increase of the Buruli s ulcer and its possible diffusion to other countries mainly in the necessity to avoid the comparition with the leprosy in the negative aspects of commenting that the Buruli s ulcer is not the leprosy of the XXI century.

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Ch 74

EVALUATION OF MULTI-DRUG THERAPY IN URBAN LEPROSY UNIT, PATNA MEDICAL COLLEGE HOSPITAL, PATNA - A 15 YEARS STUDY IN 14,000 CASES

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Elimination of Leprosy from about 95% of the world has become possible due to WHO MDT, PB or MB. 6 months PB MDT & 12 months MB MDT are being evaluated in 14,000 cases of Hansen s disease visiting urban Leprosy Centre PMCH & Leprosy Research Centre, Patna from 1985 to 2000.

DDS daily and supervised Rifampicin once a month in empty stomach was given for 6 months in PB leprosy. Additional Clofexamine (300 mg. 1st day & 50 mg daily) was given for 2 years (upto 1998) and 1 year after 1998) clinical, bacteriological evaluations were done monthly. Follow-up was done for 2 years in PB and 5 years in MB leprosy.

Droup-outs : 1100, Died: 20, Asked transfer : 280, Completing treatment: 12,600 (PB 7,200 MB 5,400) Male (7,500) Female (5,100) Child (3,200) Adult (9,400). Highest number of cases in 20-30 years of age group, Deformity (15%), Ulcers (6%), Cure rate in PB (97%), MB (94%). Regularity of treatment PB (99%),