RESUMOS - ABSTRACTS

Junho a Dezembro 1997

CLÍNICA

ABRAHAM, S., EBENEZER, Gigi 1., JEDUDASAN, K. Difuse alopecia of the scalp in borderline - lepromatous leprosy in an Indian patient. *Leprosy Rev.,* v.68, n.4, p.336-340, December, 1997.

A case of borderline-lepromatous leprosy exhibiting alopecia of the scalp along with lepromatous lymphadenitis of suboccipital lymphnode is reported.

To our knowledge generalized leprous alopecia of the scalp with lepromatous lymphadenitis of the suboccipital node is a rare occurrence in female Indian patients.

BENZEKRI, L., HASSAM, B. Tableaux atypiques de Ièpre: a propos de 2 cas. *Acta Leprol.,* v.10, n.4, p.195-198, 1997.

Nous rapportons deux tableaux atypiques de lépre. Un patient de 48 ans, présentait une dyspnée laryngée avec synéchies de l'oropharynx dont les biopsies étaient non concluantes. II était cachectique avec hypoesthésie des extrémités, et présentait des maculo-papules au niveau du dos, du genou, ainsi que deux nodules sous-cutanés. La biopsie d'un nodule était en faveur d'une thésaurismose ou d'une dyslipoïdose alors que la bacilloscopie nasale était positive. Une patiente de 14 ans a consulte pour des bulles apparaissant spontanément sur peau érythémateuse au niveau des jambes et avant-bras. L'examen trouvait des troubles sensitifs á ces niveaux et au sein d'un hamartome géant de l'hémicorps gauche. Une biopsie en peau cliniquement saine a conclu á une lèpre. La malade a développé ensuite une lèpre multibacillaire et des crises d'hystérie. La premiére observation a soulevé plusieurs diagnostics, la dyspnée laryngée étant rare au cours de la LL et I'histologie cutanée de LL régressive contrastait avec la richesse de la bacilloscopie. Le diagnostic du 2ème cas est celui de lépre indéterminée avec troubles prémonitoires neurologiques associée à une pathomimie et évolution vers une lèpre multibacillaire.

BERNINK, E.H.M., VOSKENS, J.E.J. Study on the detection of leprosy reactions and the effect of prednisone on various nerves, Indonesia. *Leprosy Rev.,* v.68, n.3, p.225-232, September, 1997.

This paper presents a retrospective study on the detection of the treatment of leprosy reactions in a field situation, and the effect of prednisone on the various affected nerves.

Two patient cohorts were analysed.

The leprosy control programme in the testing area is not backed up by a specialized referral leprosy hospital, but patients are treated on an ambulatory basis at peripheral health centres by trained multipurpose health workers supervised by the health centre doctors. For operational purposes the guidelines and procedures for reaction management in the field were adjusted and partially simplified.

In both studies it appeared that the time of the occurrence of severe reactions was the same: 80% or more of the severe reactions occurred in the first year of treatment, the majority in the first few months after the start of the multidrug (MDT) treatment.

One third of all reaction patients suffered from a silent neuritis.

Well-instructed fieldworkers proved to be

competent in detecting and treating leprosy reactions.

Treatment of severe reactions with prednisone in the field situation can preserve or considerably improve the functions of the affected nerves.

It is interesting that often the motor function of a nerve was found to be impaired without any loss in sensibility, which was tested using the ballpoint pen method.

CHAKRABARTI, A., KUMAR, B., DAS, A., MAHAJAN, V.K. Atypical post-kala-azar dermal leishmaniasis resembling histoid leprosy. *Leprosy Rev.*, v.68, n.3, p.247-251, September, 1997.

An adult male with atypical lesions of post-kala-azar dermal leishmaniasis (PKDL) is described. He had extensive ulcerated noduloplaque lesions on his hands, feet and genitalia. He had been diagnosed and treated for leprosy in the past. He came from an area endemic for kala-azar and leprosy and had a previous history of kala-azar. There was an abundance of Leishman Donovan bodies in slit-skin smears and in histopathology sections. There was a good therapeutic response to sodium stibogluconate. An ulcerative variant of PKDL has been described but is extremely rare. Extensive lesions with ulceration have not been described before to the best of our knowledge. The epidemiological significance of the case is discussed.

COURTRIGHT, P., KIM, Sung-Hwa, LEE, Ho-Sung, LEWALLEN, Susan. Excess mortality associated with blindness in leprosy patients in Korea. *Leprosy Rev.,* v.68, n.4, p.326-330, December, 1997.

Vision loss and blindness are potential complications of leprosy. There is little data available to indicate the impact of eye complications on life expectancy and quality of life. We sought to determine the relative risk of death in blind leprosy patients compared to nonblind leprosy patients.

A population-based ocular survey of 510 mycobacteriologically negative leprosy patients in rural South Korea, conducted in 1988, formed the study population. After a 7-year period patients were traced to determine their status (alive, dead, lost to follow up).

Blind patients showed a 4.8-fold risk of death, even after adjusting for other factors, compared to nonblind patients. Young blind leprosy patients had the highest relative risk of death. Excess mortality was not associated with any specific cause of blindness, ocular pathology, or type of disease.

Findings from our study suggest that all leprosy patients with ocular disabilities (including those released from antileprosy treatment) should be targeted to receive eye care to prevent vision loss. Particular emphasis should be placed on young patients.

EBENEZER, L., ARUNTHATHI, S., KURIAN, N. Profile of leprosy in children: past and present. *Indian J. Leprosy*, v.69, n.3, p.255-259, July-Sept., 1997.

The profile of leprosy in children currently seen in a referral hospital is compared with that of children with leprosy admitted in the 1970s. Children with leprosy under the age of 15 years in 1974 and 1979 comprised one group (Group I) while those during 1989 and 1994 constituted the second group (Group II) The variables studied included age, sex, type of leprosy, deformity and contact status. Multidrug therapy (MDT) was introduced in the treatment of leprosy in 1982. The probable change it has made in the presentation of leprosy in children is discussed.

GUPTA, U.D., KATOCH, V.M. Understanding the phenomenon of persistence in mycobacterial infections. *Indian J. Leprosy,* v.69, n.4, p.385-393, Oct-Dec., 1997.

Persistence of live organisms despite chemotherapy for long periods is a significant problem in both leprosy and tuberculosis. The consequence of this persistence is varying

rates of relapses which undermine the success of treatment. The mechanisms of the dormancy are ill-understood, and as explanation a switch over to alternate modes of metabolism such as glyoxylate bypass and other shunts has been suggested. This presentation reviews the information available on this aspect. In-depth studies by designing and investigating model system(s) using molecular genetic approaches may help in gaining better understanding of the mechanisms of dormancy and persistence in mycobacterial infections and devising appropriate strategies and tools for the better management of these complications.

JOB, C. K., Baskaran, B., JAYAKUMAR, Joseph, ASCHHOFF, M. Histopathology evidence to show that indeterminate leprosy may be a primary lesion of the disease. Int. J. Leprosy, v.65, n.4, p.443-449, December, 1997.

Five biopsies of patients with indeterminate leprosy and five with skin lesions of nonspecific chronic inflammation were chosen. Histopathologic changes in the presence of acid-fast bacilli (AFB) in an average number of 145 serial sections from the entire paraffin block from each were evaluated. In all five indeterminate lesions AFB were found in the dermis, but intraneural AFB were present in only two cases.

Mainly, lymphocytic infiltrate was present in two and early, poorly formed granulomas were seen in three.

It is suggested that nonspecific chronic inflammation of the skin could precede indeterminate disease and that AFB, before they entered the dermal nerves, may be found in other dermal tissues. In most if not all early lesions of indeterminate leprosy *Mycobacterium leprae* would be found if an adequate number of sections stained for AFB were examined. The histopathologic and immunologic features of indeterminate disease were in favor of it being a primary lesion in leprosy.

ROCHE, P. W., Le MASTER, Joseph, BUTLIN, C. Ruth. Risk factors for type 1 reactions in leprosy. *Int. J. Leprosy,* v.65, n.4, p.450-455, December, 1997

A cohort of new borderline leprosy patients seen over a 7-year period were examined retrospectively for risk of type 1 reactions (Tl R) associated with 12 clinical and laboratory parameters. Logistic regression analysis was used to identify a strong link between facial patches and cutaneous Ti R and enlarged ulnar nerves and neural Ti R. Anti-phenolic glycolipid-I seropositivity, a positive bacterial index, and disease in more than two body areas were also identified as risk factors for Tl R. These data indicate that there are important clinical data which can be used to predict an individual patient's risk of developing Ti R.

SAYAL, S.K., DAS, A.L., GUPTA, C.M. Concurrent leprosy and HIV infection: a report of three cases. *Indian J. Leprosy,* v.69, n.3, p.261-265, July-Sept., 1997.

Three cases of concurrent infection with HIV and leprosy, are reported. One had developed borderline lepromatous leprosy one year after identifying HIV infection, while the other two had indeterminate leprosy and both conditions were identified at the same time in these two patients. All three cases showed satisfactory, response to standard antileprosy multidrug therapy.

SHARMA, G. R., SUBRAHMANYAM, Sarada, DEENABANDHU, A., Babu, C.R. Narenda, MADHIVATHANAN, S., KESAVARAJ, N.Exposure to pulsed magnetic fields in the treatment of plantar ulcers in leprosy patients - a pilot, randomized, double-blind, controlled clinical trial. *Indian J. Leprosy,* v.69, n.3, p.241-250, July - Sept., 1997.

A pilot, randomized, double-blind, controlled clinical trial to study the effect of exposure to pulsed magnetic fields (PMF) an

the rate of healing of plantar ulcers in leprosy patients was undertaken. Twenty patients were randomly allocated to receive standard wound-care treatment (controls) and 20 others received standard treatment plus exposure to PMF (sinusoidal form, 0.95 to 1.05 Hz amplitude +- 2400 nano Teslas)(study group) for four weeks. Assessment of the outcome of treatment was based on the volume of ulcers, calculated from the maximal length, breadth and depth of the ulcer recorded on the day of admission, at one and two weeks and at the end of treatment. The analysis of the results was based on 15 control patients and 18 PMF patients after deletion of four patients due to irregularity in attendance and three others on account of suspected malignancy of the ulcers. In the control group, the geometric mean volumes of the ulcers were 2843 and 1478 cu mm on the day of admission and at the end of the treatment (P=0.03); the corresponding values in the PMF group were 2428 and 337 cu mm, respectively (P<0.001). A decrease in the volume of 40% or more was observed in 53% of control patients and 89% of PMF patients (P=0.02); a decrease of 80% or more was observed in none of the controls and in 33% of PMF patients. These findings strongly suggest that exposure to PMF causes a significantly more rapid healing of plantar ulcers in leprosy patients.

SUJAI, S., VILVANATHAN, K., NISHA K., ARUNTHATHI, S. Skin smears in leprosy: is reduction in number of sites justified? *Acta Leprol.*, v10, n.4, p.191-194, 1997.

An analysis of 377 sets of positive skin smears of leprosy patients was done to determine the minimum sites needed to detect all smear positive leprosy patients. A combination of earlobe and a selective site could pick up 95.5% of the patients. An additional smear from the forehead increased the sensitivity to 97.7%. The results suggest that the sites for skin smears may be reduced to a combination of the earlobe and one selective site smear from a skin lesion to be able to detect most smear positive leprosy patients.

TERENCIO DE LAS AGUAS, J. Lesiones osteoarticulares de la lepra. *Fontilles - Rev. Leprol.*, v.21, n.2, p. 195-219, Mayo-Agosto,1997.

A total of 800 patients are studied with patients osteo-articular lesions that are classified in specific, produced by *M. leprae* and neurotrophic and in these groups the ones complicated by local infections.

The most affected bones are the short ones of hands and feet, specially the phalanxs in their distal part. The specific lesions are (6%) whole the neurotrophic are more frequent 82% specially in feet with osteolysis and osteoartritis of phalanx and metatarsals less in metacarpals and some patients present peripheral neuropathy of long evolution.

Other lesions are observed the of Cranium, disjoined Tarsus, Panaris of Marvan and tibia-fibula periostitis.

The importance of these lesions for the social and laboral reinsertion of these patients and their prevention is discussed.

TERENCIO DE LAS AGUAS, J., OCHOA, V.J.G. Tarso disociado en la lepra. *Fontilles - Rev. Leprol.*, v.21, n.3, p.323-330, Septiembre-Diciembre, 1997.

The experience with dissociated tarsus in leprosy is reviewed, also refered to as neuroparalitic arthopathy of Charcot 18 cases are presented together with clinical situation, etiological factors and treatment.

CONTROLE

LOUHENAPESSY, A. A., ZUIDERHOEK, Bos. A practical method of active case finding and epidemiological assessment: its origin and application in the leprosy control project in Indonesia. *Int. J. Leprosy,* v.65, n.4, p.487-491, December, 1997.

Random sample surveys in the past have revealed high estimated against low registered prevalences for leprosy in several parts of Indonesia. A pilot project showed that the problem of cases that had not yet been detected could not be solved without the active participation of the local authorities, who proved able to overcome the stigma and to convince potential patients to go for examination and treatment. The pilot project was based on the principle of what are called exploration surveys, which were introduced by Sitanala in Indonesia in 1931. The Indonesian government decided to reintroduce these surveys in 1977 under the name of chase or trace surveys. They are carried out within the framework of the leprosy workers[1] routine duties and no additional expenses are incurred. Since then, thousands of patients of all types and with long case histories have been detected and brought under treatment. Without this "push" it is fair to assume that many would never have sought treatment voluntarily. In view of the experience in Indonesia, one wonders whether leprosy can be eliminated without emphasizing the importance of active case finding, especially in areas in which the disease is still highly endemic.

Chase surveys also provide rough information about the local leprosy situation. Although of great value, they are not, in highendemic regions, an alternative to random sample surveys which reveal, besides a wealth of additional information, the possible unknown sources of infection.

MEIMA,A., GUPTE, Mohan, D., VAN OORTMARSSEN, Gerrit J., HABBEMA, J**.** Dik F. Trends in leprosy case detection rates. *Int. I. Leprosy*, v. 65, n.3, p.305-319, September, 1997.

Background: A systematic review of the trends in leprosy incidence is lacking. The question of whether leprosy transmission has declined remains, therefore, unanswered. This study investigates trends in new case detection rates (NCDRs) in selected leprosy-endemic areas from different continents.

Methods: A literature search using specific inclusion criteria was performed. Average annual rates of change in NCDRs were obtained by exponential curve fitting. The variation in trends within individual areas was investigated using direct and indirect information on leprosy control activities.

Results: This review covers 16 areas in the Pacific. Asia, Africa and Latin America. For 10 out of the 16 areas, the trend was seen to be declining consistently over the last 10 years or longer. Near stabilization or stabilization after decline was observed for two areas. For three areas, interpretation of recent NCDRs was difficult due to changes in control, but two of them showed a decline over the study period. A consistently increasing trend was observed over the last 20 years in the one remaining area. The observed downward trends could not be attributed to reduced control activities or changed diagnostic criteria. A general acceleration of downward trends in the NCDR after the introduction of multidrug therapy (MDT) has not so far occurred.

Conclusion: Our main conclusion is that despite many differences between the studies and study areas, the review demonstrates a considerable tendency of downward NCDR trends. Lack of information and changing control conditions necessitate caution in interpreting NCDR trends in individual areas. A general impact of MDT on NCDR trends is so far not visible. The coming years will be crucial for MDT-based control to prove its ability to reduce leprosy incidence.

RAMAPRASAD, P., FERNANDO, A., MADHALE, S., RAO, J.R., EDWARD, V.K, SAMSON, P.D., KLATSER, P.R., DE WIT, M.Y.L, SMITH, W.C.S., CREE, I.A. Transmission and protection in leprosy: indications of the role of mucosal immunity. *Leprosy Rev.*, v.68, n.4, p.301-315, December, 1997.

Recent advances in treatment have achieved a large drop in the prevalence of

active leprosy cases, but the incidence is at best decreasing slowly. Most people within leprosy-endemic populations have been exposed to *Mycobacterium leprae,* but few develop disease and it seems likely that the majority of the population develops protective immunity. If the site of initial infection is in the nose, dissemination of bacilli around the body to skin and nerve implies that the initial infection is bacilliferous and it has been shown that nasal M. *leprae* are detectable by polymerase chain reaction (PCR) of nasal swabs. Since salivary anti-M. *leprae* IgA (sMLIgA) levels are correlated with protections[5] we have surveyed groups of leprosy patients, contacts and the general population for both their sMLIgA and nasal PCR positivity. A total of 304 subjects were enrolled in the study: PCR and mucosal challenge tests were performed in 204 of these individuals. sMLIgA was present in 66% of treated patients, 76% of leprosy workers and 72% of healthy contacts. However, only 33% of indigenous subjects were sMLIgA+, in contrast to the earlier studies showing 74% positivity' PCR for M. *leprae* was present in both household contacts (2%) and indigenous controls (5%). In a subsequent follow-up study, nasal swabs were taken from 97 of those studied in the first series: three PCR + individuals followed up after one year became negative, while of the remaining 94 PCR - individuals retested, 2 became positive. Of 112 subjects retested with the mucosal challenge test for sMLIgA: 22 converted from positive to negative and 12 from negative to positive. These results suggest that there is widespread subclinical transmission of M. *leprae* with transient infection of the nose resulting in the development of a mucosal immune response, despite the fact that few individuals will develop clinical disease. This may explain the current lack of effect of multidrug therapy (MDT) control programmes on incidence, although the reduction in general population immunity is consistent with some effect of MDT on transmission.

VIJAYAKUMARAN, P., MAHIPATHY, P. V., MISRA, R.K., PETRO, T. S., RAMANUJAN, R., KARUNAKARAN, S., ABRAHAM, O. Hidden cases of leprosy (in prison). *Indian J. Leprosy,* v.69, n.3, p.271-274, July-Sept., 1997.

Leprosy survey conducted in eight prisons in seven districts of Bihar State revealed a prevalence of 13.3 per 1000 which was 12 times more than the recorded prevalence of leprosy in the State. Thus this finding supports the view that prisons could form a hyperendemic pocket for leprosy. Regular NLEP services need to be extended to the inmates of the prisons.

DIAGNÓSTICO

JOB, C. K., JAYAKUMAR, Joseph, WILLIAMS, Diana L., GILLIS, Thomas P. Role of polymerase chain reaction in the diagnosis of early leprosy. *Int. J. Leprosy,* v.65, n.4, p.461-464, December, 1997.

For 39 patients suspected of early leprosy, skin biopsies of the lesions were done and bisected. One piece was used for histopathologic examination and the other for polymerase chain reaction (PCR) studies to detect *Mycobacterium leprae.* The diagnosis of early leprosy was made clinically in 14 patients and by histopathologic study in 26 patients. Acid-fast bacilli were seen in the histopathologic sections of only two patients, and M. *leprae* were detected using PCR techniques in 11 patients. In one patient the diagnosis of leprosy was made only because of the detection of M. *leprae* in the PCR study. Since even in endemic countries the profile of leprosy is changing, detection of leprosy lesions in their early stages has become increasingly important. Since the finding of M. *leprae* is crucial in the confirmatory diagnosis of early leprosy, it is suggested that PCR studies to detect M. *leprae* be done wherever possible in conjunction with histopathologic examination. It is also recommended that the feasibility and the cost-effectiveness of both of these methods to find M. *leprae* be evaluated.

EPIDEMIOLOGIA

LE GRAND, A. Women and leprosy: a review. *Leprosy Rev.,* v.68, n.3, p.203-211, September, 1997.

Gender inequalities in health have a significant impact on women's health. In leprosy gender inequalities could be even more serious, as it is a highly stigmatized disease. A review has been made of the most recent literature dealing with gender and leprosy. First some data are presented on gender inequalities in rates of case detection, deformities and reversal reactions among leprosy patients. Then the major factors contributing to those differences are discussed. The paper ends with some recommendations for further research on gender and leprosy.

TORRES, T. M. Ferrá, HERNÁNDEZ, Gonzalo B. Carrazana. Modo de detección y fuente de infección de la incidencia de lepra. *Fontilles - Rev. Leprol.,* v.21, n.2, p.161-165, Mayo-Agosto, 1997.

It was determined the means of detection and sources of infection of the 81 incidences of leprosy reported in Camagüey town during 1989-1993.

Considered in the means of detection were 3 groups: spontaneous, household contacts and risk population. Within the sources of infection it was considered the following relations: father, mother, brother-sister husband/wife, other family members, neighbours and work-mates. It was confirmed that 82.7% of the cases visited the doctor spontaneously, 13.6% was detected through house calls and 3.7% through examination of risk population. The principal source of infection was represented by neighbours (19.8%) followed by the families (father, mother, brother-sister and others)(14.8%). Spouses were not determined as a source of infection.

HISTÓRIA

TERENCIO DE LAS AGUAS, J. Centenario de los Congresos Internationales de Lepra. *Fontilles - Rev. Leprol.,* v.21, n.2, p.175-194, Mayo-Agosto, 1997.

The centennial of the Intemational Leprosy Congress has been reached. There have been XIV, together with other important events on Leprosy, number of participants, topics reviewed and conclusiones.

Finally, the importance of the Beijing (China) Congress of 1998 with it's slogan is mentioned "Working toward a World without Leprosy".

IMUNOLOGIA

ANTUNES, S.L.G., SARNO, E.N., HOLMKVIST, Gunilla, JOHANSSON, 011e. A comparison of the expression of NGFr, PGP 9.5 and NSE in cutaneous lesions of patients with early leprosy using immunohistochemistry. *Int. J. Leprosy,* v.65, n.3, p.357-365, September, 1997.

We examined the immunohistochemical expression of the neuronal proteins NGFr, PGP 9.5, and NSE in cutaneous lesions of patients with early leprosy and in the skin of normal individuals. PGP 9.5- and NSE-immuno-reactive nerve fibers were decreased in the skin of leprosy patients. This reduction was topographically unrelated to the early leprosy infiltrate. However, no difference in the expression of NGFr was found between the leprosy patient and normal groups. It was shown that there is a selective alteration in the expression of neuronal proteins in early leprosy lesions which seems to be unrelated to the inflammatory infiltrate in the initial stages of leprosy. Pathogenic mechanisms other than inflammation, which are intrinsic to the *Mycobacterium* leprae-nerve relationship, may thus contribute to the nerve damage in leprosy neuropathy.

BUTLIN, C. R. , SOARES, Des, NEUPANE, Kapil Dev, FAILBUS, Sarah S., ROCHE, Paul W. IgM anti-phenolic glycolipid-1 antibody measurements from skin-smear sites: Correlation with venous antibody levels and the bacterial index. *Int. J. Leprosy,* v.65, n.4, p.465-468, December, 1997.

Measurements of anti-phenolic glycolipid-I antibodies were made in 200 matched samples of capillary blood from the skin-smear site, venous blood collected on filter paper, and sera. A close correlation among the three samples was observed and a weaker correlation among the antibody levels and the average and skin-smear bacterial index. Capillary blood from the skinsmear site had a consistently higher level of antibodies in each sample than did the sera. The collection of capillary blood from skinsmear sites is a convenient and economical method of obtaining samples for serology and for measuring local antibody levels, and it may be more sensitive than measurements of antibodies in sera.

CERVINO, A.C.L., CURNOW, Robert N. Testing candidate genes that may affect susceptibility to leprosy. *Int. 1. Leprosy,* v.65, n.4, p.456-460, December, 1997.

Several statistical methods have been used to search familial data sets for marker alleles associated with the occurrence of a disease. In the present paper, a recently developed method is used to re-analyze published data on leprosy and candidate genes at the HLA loci. This new method of analysis, the randomization transmission disequilibrium test (TDT), confirmed previous conclusions that there was no significant evidence against random transmission at the HLA-A locus but significant positive association with the HLA-DR2 allele. The randomization TDT detected significant protective associations, that had not previously been found, with alleles HLA-B8 in Egyptian families and HLA-B21 (current nomenclature B*4901, 5001-5002) in South Indian families, highlighting a major advantage of permutation tests in analyzing candidate gene loci with rare alleles. These findings provide evidence that HLA class I restricted T lymphocytes may be of protective importance in leprosy.

CHIPLUNKAR, S.V., DESHMUKH, M.A., KODE, I.A., GANGAL, S.G., DEO, M.G. Ability of lymphokine-activated killer cells to lyse mycobacteria-infected cells. *Acta Leprol.,* v.10, n.4, p.203-208, 1997.

Lymphokine-activated killer (LAK) cells were generated by interleukin-2 activation of peripheral blood lymphocytes obtained from lepromatous leprosy (LL) patients and healthy individuals. The ability of LAK cells to lyse targets (macrophages and T-24, a bladder carcinoma cell line) infected with mycobacteria *(Mycobacterium leprae* and mycobacterial strain ICRC) was assessed in a 51 chromiumrelease assay. It was observed that LAK cells generated from LL patients and healthy individuals could preferentially lyse *M. leprae* or ICRC-pulsed macrophages and T-24 cells, compared to non-pulsed targets. The ability of LAK cells to kill intracellular mycobacteria was demonstrated in colony forming assays. These results indicate a promising role for LAK cells in immunotherapy of leprosy.

FUJIWARA, T., MINAGAWA, F., SAKAMOTO, Y.i, DOUGLAS, J.T. Epitope mapping of twelve monoclonal antibodies against the phenolic glycolipid-I of M. *leprae. Int. J. Leprosy,* v.65, n.4, p.477-486, December, 1997

Epitope mapping of 12 monoclonal antibodies (MAbs) directed to the trisaccharide part of the phenolic glycolipid-J (PGL-J) of *Mycobacterium leprae* was carried out by using the set of chemically synthesized sugar-BSA conjugates. The results can be summarized as follows: mAb (1-21), mAb (1-24) and mAb (1-25) recognized the outer (nonreducing end) monosaccharide of the

trisaccharide chain of PGL-I. However, the affinity of these MAbs to the outer monosaccharide was weak. They required the contributions of some parts of the second sugar for enough affinity. MAbs ml 6Al2, ml 8A2, ml 8B2, and PG2 B8F recognized the outer disaccharide. MAb F47-21-3 recognized the outer disaccharide and some parts of the third sugar. MAb SF 1 recognized the trisaccharide of PGL-I. MAb 3D1-A9 recognized the phenol group and the structure around the branching point on the carrier protein in addition to the trisaccharide. MAbs DZ 1 and 2G3-A8 had unique characters which recognized the inner part of the sugar chain. MAb DZ 1 recognized the inner (reducing end) disaccharide. MAb 2G3-A8 recognized the inner monosaccharide, phenol group and the structure around the branching point on the carrier protein. All of the MAbs tested, except for ml 6Al2, recognized the anomeric configurations in the sugar parts they recognized; ml 6Al2 recognized the anomeric configuration only within the outer disaccharide. This set of MAbs, which were well defined on their binding specificity, promises to be an affective tool for the immunological study of PGL-I and the clinical assessment of leprosy.

NARAYAN, R., MAHESHWARI, P.K., DESIKAN, K.V., HARINATH. Detection of S-100 antigen and anti ceramide antiboby in sera of leprosy patients with and without reaction. *Indian J. Leprosy,* v.69, n.4, p.347-352, Oct-Dec.,1997.

Levels of anticeramide antibodies and S-100 antigen in leprosy patients with and without reaction are compared in this study. The increase in levels of 1gM anti ceramide antibody in the tuberculoid group of patients with reaction, when compared to those without reaction, is significant ($P<0.05$). Similarly, significant increase ($P<0.01$) was observed in the borderline group with reaction. No significant change in anti ceramide antibody level was observed in the lepromatous group of patients with and without reaction. Mean levels of S-100 were slightly lower in all three groups of patients with reaction, but the differences were not statistically significant.

SHARMA, R.K., SHIRANNAVAR, C.T., KATOCH, K., SHARMA, V.D., NATRAJAN, M., SAXENA, N., KATOCH., V.M. Microdensitometric scanning procedure for quantitative assessment of hybridization of rRNA targeting probes in leprosy. *Acta Leprol.,* v,10, n.4, p.213-217, 1997.

In order to develop an objective criteria of grading of positivity of hybridization signals of gene probes targeting rRNA, a microdensitometric scanning procedure was standardised. Ribosomal RNA was extracted from the bacilli harvested from biopsies of leprosy cases across the spectrum and blotted on nitro-cellulose membranes. M. *leprae* specific rRNA targeting oligonucleotide probes were endlabelled and hybridization was done by the technique standardised and published earlier. The autoradiographs were developed and microdensitometric scanning was done by altering different parameters. Positivity was graded in 5 grades and compared with visual positivity. Microdensitometric scanning procedure and 5 grade system appear to be useful and reproducible. Signals in paucibacillary specimens were in 2+ to 3+ grading range whereas those in multibacillary specimens varied in grades from 2+ to 5+. This approach appears to have potential usefulness for assessing the bacillary load (possibly viable) in the clinical specimens from leprosy cases.

QUINTANA GINESTAR, M.V., TORRES PERIS, V., TERANCIO DE LAS AGUAS, J. Mitsuda positivo en enfermos de lepra lepromatosa: estudio de este viraje (1. Parte). Fonfilles - Rev. Leprol., v.21, n.3, p.281-322, Septiembre-Diciembre, 1997.

Hansen's disease patients can be

classified by the intradermal Mitsuda test.

The test is usually positive in Tuberculoid patients and negative in Lepromatous patients and at the same time this was considered an immunological classification.

The finding of a positive Mitsuda test in a lepromatous patient, implies a possible immunological change in these patients.

To study this shifting phenomenon, we followed the evaluation of a series of parameters.

Histological, study of the lepromatous patients that turn to a positive Mitsuda test with different stainings (H.E., Fite) and immunohistochemical markers (S-100, CD- 68, MAC-387, HLA-DR, Muramidasa, Factor XIIIa). We also studied the immunological situation of these patients (Proteinogram, Immunoglobul ins, Lymphokins, Gamma- Interferon) and finally evaluate this change reviewing the reasons that have pruduced an immunological change comparable with normality.

The results of this study confirm that the turn (negative to positive of the Mitsuda test is not infrequent, affecting 27,4% of the lepromatous population tested.

The patients have been bacteriologically negative for the last 15 years and were all treated with multidrugtherapy.

The humoral immunity is slightly altered in the immunoglobulin G values, affecting the subtypes IgG1, lgG2 and lgG3, due to hepatic and/or kidney lesions.

The cellular immunity together with the rest of the parameters studied were normal with no signs of activity towards Hansen's disease. The general immunological situation of these patients is considered normal.

Due to the great variety of responses to all these tests, even in a healthy population because of genetic heterogeneity, we interpret these Mitsuda positive lepromatous patients as belonging to the subpolar group because polar groups are immunologically stable without cellular and delayed hipersensibility modifications even after treatment.

MICROBIOLOGIA

GUPTA, U.D., KATOCK, K., NATARAJAN, M., SHARMA, V.D., SHARMA, R.K., SHIVANNAVAR, C.T., KATOCH, V.M. Viability determination of M. *leprae:* comparison of normal mouse foot pad and bacillary ATP bioluminescence assay. Acta Leprol., v.10, n.4, p.209-212, 1997.

Correlation between viability assessment by mouse foot pad and ATP bioluminescence was studied in biopsy specimens from multibacillary leprosy cases. Biopsies were processed for inoculation into mouse foot pad and estimation of bacillary ATP levels by bioluminescent assay by earlier established procedures. ATP content as pg/million bacilli was estimated and correlation was assessed with growth in the mouse foot pad. It was observed that when the ATP content was >36 pg/million bacterial cells, (>1% probable viables) there was growth in the mouse foot pad from all the specimens. Similar results were observed when the ATP content was in the range of 3.6 to 35.99 pg/million cells (0.1 to 1% probable viables). The positivity rates in the mouse foot pad decreased when the ATP content decreased further. No positive growth in the specimens below 0.04 pg/million bacilli (< 0.001% viable organisms) was observed. These findings show an overall correlation between viability assessed by mouse foot pad and ATP bioluminescence. These observations validate the concept of ATP content of viable unit of *M.leprae* being in the order of 10 -15 g/live cell which is in the same order of magnitude as a colony forming unit of cultivable mycobacteria.

KATOCH, Sreevatsa K. Viability of M. *leprae* while undergoing laboratory procedures. *Indian J. Leprosy,* v.69, n.4, p.353-359, Oct-Dec., 1997.

Studies were carried out to assess whether various methodological procedures adopted while conducting experiments, or,

maintaining M. *leprae* under different conditions affected the number of organisms made available or their viability. Results of mouse foot-pad experiments showed that bacilli survived for one day at 37°C, 7 days at 20° to 30°C and for 90 days in lyophilized conditions. Repeated daily exposure of the material preserved in refrigerator at +4°C, to room temperatures showed that bacilli survived for only up to five days; whereas, with single exposure they survived up to 14 days. M. *leprae* were found to lose infectivity after 30 minutes of exposure to various disinfectants and ultra violet light. Centrifugation at high speed did not affect the viability of M. *leprae.*

SUNEETHA, Lavanya M., SATISH, Posettihalli R., SUNEETHA, Sujai, JOB, Charles K., BALASUBRAMANIAN, Aiyalam S. M. leprae binds to a 28-30-kDa phosphory-lated glycoprotein of rat peripheral nerve. Int. J. Leprosy, v.65, n.3, p.352356, September, 1997.

To understand *Mycobacterium leprae*-peripheral nerve interaction, we have investigated the binding of M. *leprae* to rat peripheral nerve proteins in an in vitro model using 32P-phosphorylated proteins of the peripheral nerve. Intact M. *leprae* binds to a major phosphorylated protein of 28-30 kDa and, to a minor extent, to a few proteins of molecular weight 45-55 kDa. This binding was more specific for M. *leprae* since only insignificant binding was observed with other bacteria, such as M. *bovis* or *Escherichia coli.* M. *leprae* did not show binding to several phosphorylated proteins of the rat brain. The 28-30-kDa binding protein of the rat peripheral nerve was found to be a glycoprotein by concanavalin A-Sepharose column chromatography.

ZHANG, Zheng-Qing, ISHAQUE, M. Evaluation of methods for isolation of DNA from slowly and rapidly growing mycobacteria. *Int. J. Leprosy,* v.65, n.4, p.469-476, December, 1997.

Mycobacteria generally have thick cell walls and contain large amounts of lipid, making them resistant to DNA extraction. Five methods, namely, extensive enzymic digestion method (M1), 2-min mechanical glass-bead disruption method (M2), thermal shock method (M3), modified conventional enzymic digestion method (M4), and manual disruption with modified conventional enzymic digestion method (M5), were used to compare their effectiveness and simplicity in extracting DNA from slowly growing mycobacteria *(Mycobacterium leprae, M. lepraemurium* and M. *bovis* BCG), and a rapidly growing mycobacterium (M. *phlei).* The highest DNA yield was obtained by M2 from M. *lepraemurium* which produced 2.82 ug DNA/mg wet weight of cells, representing a theoretical yield of 78%. M3 gave the lowest DNA yield; 0.01 ug DNA/mg wet weight of cells of M. *lepraemurium* was obtained. M4, in which proteinase K was used, is more effective than MJ, in which subtilisin and pronase were used. M5 yielded a higher amount of DNA, but it required more manipulations to extract DNA as compared to M4. Extraction of DNA of M. *leprae* from nude mice is more difficult than that of M. *leprae* from armadillos by all of the methods used. These results suggest that the biosynthetic capabilities of these two forms of M. *leprae* may vary, depending on their cultural conditions and/or strain differences. Our results have shown that both M2 and M4 are the simplest, most effective and timesaving methods which are suitable for every routine laboratory to extract DNA from slowly and rapidly growing mycobacteria.

PATOLOGIA

SIMOUR, S.K., VERMA, P.K., SINGH, J.N., OKHANDIAR, R.P. Semen biochemistry of leprosy patients. *Indian J. Leprosy,* v.69, n.3, p.251-254, July-Sep., 1997.

Studies have been made on the semen of three categories (borderline, borderline tuberculoid and lepromatous) of leprosy patients to evaluate the seminal biochemical constituents viz fructose, glycerylphosphorylcholine and

acid phosphatase besides the physical properties viz volume, pH, liquefaction time, sperm density and sperm motility.

In all categories of leprosy patients, seminal pH, liquefaction time and sperm density, underwent signficant decline. The decline in the seminal volume and sperm motility was signficant only in borderline leprosy.

It was observed that seminal glycerylphosphorylcholine (GPC) concentration and acid phosphatase activity declined in all categories of leprosy patients but GPC showed a signficant decline only in borderline tuberculoid and acid phosphatase declined signficantly only in borderline and lepromatous leprosy.

PSICOLOGIA

BHARATH, S., SHAMASUNDAR, C., RAGHURAM, R., SUBBAKRISHNA, DK. Psychiatric morbility in leprosy and psoriasis - a comparative study. *Indian J. Leprosy,* v.69, n.4, p.341-346, Oct - Dec., 1997

The psychiatric morbidity of 30 leprosy patients was compared with that of psoriasis in a clinic set-up. The prevalence of psychiatric morbidity was significantly less among leprosy patients (122/1000) than among those with psoriasis (476/1000); but the severity of the problem, as measured by General Health Questionnaire (GHQ), was significantly, greater among leprosy patients ($p<0.05$). There was no difference in the pattern of psychopathology diagnosis between the two groups. Depressive neurosis was the most common diagnosis in both the groups. The relevance of these findings in relation to leprosy is discussed.

REABILITAÇÃO

HUSAIN, S., MISHRA, B., PRAKASH, V., MALAVIYA, G.N. Evaluation of results of surgical decompression of median nerve in leprosy in relation to sensory - motor functions. *Acta Leprol*, v.10, n.4, p.199-201, 1997.

Median nerve decompression was performed in 29 leprosy patients of which 20 were followed up for varying periods. It has been observed that the decompression was beneficial, sensory recovery was seen in 90% cases and in 45% cases the muscle strength improved and the process of deterioration was arrested in another 25% cases.

SALAFIA, A., CHAUHAN, G. loshi external stabilising system (JESS) in proximal interphalangeal joint (PIP) contractures in leprosy. *Indian J. Leprosy*, v.69, n.4, p.331-339, Oct - Dec., 1997.

The authors present their experience in the use of the JESS (Joshi External Stabilising System) for correction of proximal interphalangeal joint (PIP joint) contracture deformity in 68 fingers. The use of the JESS has made this surgery easier, faster in releasing contractures and it has given better correction than the methods so far used by the same authors, like capsulotomy, local flaps and free skin grafting. The procedure is simple and has no serious side effects; it can be repeated if need be. The JESS is easy to apply, economical, reliable, reusable, well accepted by the patient. Compared to the other distractors made in USA and Europe, the JESS has an added advantage in that it costs so very much less (US $5-10), that our leprosy hospitals can afford it. In our patients, we have achieved full extension in 75% and good extension in 10.3% of the cases. These figures are much better than what was possible, in the past, with local flaps and free skin grafting. With those procedures we had excellent results in only 53% of the cases and poor result in 28%.

VAN BRAKEL, W.H., ANDERSON, A.M. Impairment and disability in Leprosy: in search of the missing link. *Indian J. Leprosy,* v.69, n.4, p.361-376, Oct-Dec., 1997.

This paper describes the results of a survey aimed at studying the relationship

between impairment and disability in leprosy. Persons affected by leprosy attending the Green Pastures Hospital, Pokhara, or one of the field clinics in the Western Region of Nepal visited during the study period were interviewed using a standardized questionnaire. Two hudred and sixty-nine subjects were included in the study. For the analysis, 'disability', was defined as activities being done with 'much difficulty', only with help' or being 'impossible'. The most commonly affected indoor activities were cutting nails (22%), washing clothes (16%), using scissors (17%) and tying a knot (18%). Among the outdoor activities, cutting grass, digging, harvesting, threshing and milking a cow or buffalo were the most commonly affected (22%-26%). Sensory impairment of the thumb and/or index finger at the 2 g level was a very signficant risk factor for disability activities involving the hand(s). Muscle weakness of the thumb and mobile clawing of the fingers had a strong association with disability in several activities. Sensory impairment of the sole was the strongest determinant of disability in activities involving the lower limb.

We recommend that efforts should be made to include disability as a standard activity for monitoring and evaluation of rehabilitation, both for individuals and on programme level.

TERAPÊUTICA

ABRAHAM, S., VIJAYAKUMARAN, P., JESUDASAN, K. Ulnar nerve abscess in a multibacillary patient during postmultidrug therapy surveillance. *Leprosy Rev.*, v.68, n.4, p.333-335, December, 1997.

An old borderline-lepromatous leprosy patient, treated initially with DDS monotherapy followed by MDT, 11 years later during surveillance presented with 3-month-old asymptomatic cystic swelling, arising from the right ulnar nerve without exhibiting any evidence to document relapse of the disease. It responded prompty to corticosteroid therapy.

This unusual clinical presentations of ulnar nerve abscess has not been reported elsewhere.

ARUNTHATHI, S., SATHEESH, Kumar K. Does clofazimine have a prophylactic role against neuritis? *Leprosy Rev.*, v.68, n.3, p.233-241, September, 1997.

A study was undertaken with the aim of testing the usefulness of clofazimine as a prophylactic agent against neuritis and nerve damage. A modified regimen, using initial high doses of clofazimine followed by regular multibacillary multidrug therapy (MB-MDT) WHO regimen, was given to a series of consecutive cases of high risk borderline leprosy patients, fulfilling defined selection criteria (n=65). These patients were studied for the incidence of neuritis/Type I reaction, over a period of 2 years. Results were compared with a matched series of consecutive cases treated only with regular MB-MDT WHO regimen (n1=57).

The difference in incidence rates of neuritis between the two groups was significant ($p<0.01$), suggesting that clofazimine may have a useful prophylactic role against neuritis/Type I reaction and nerve damage.

CROFT, R.P., RICHARDUS, 1.H., SMITH, W.C.S. Field treatment of acute nerve function impairment in leprosy using a standardized corticosteroid regimen - first year's experience with 100 patients. *Leprosy Rev.*, v.68, n.4, p.316-325, December, 1997.

In this study, a fixed regimen of prednisolone for the treatment of acute nerve function impairment (NFI) in leprosy patients was developed and introduced at field level in one area (Thakurgaon) of the Danish-Bangladesh Leprosy Mission's field in NW Bangladesh. The assessment, management and follow-up of patients was undertaken by leprosy control supervisors and physiotechnicians.

One hundred patients were treated and followed up 6-8 months after completion of a 4-month course of prednisolone. At a level of

change of 2 points (where a change of at least 2 points in the motor/sensory score was taken to indicate a change of status, i.e. full or partial recovery, or deterioration), 42/65 (64.6%) patients with sensory loss experienced some sensory recovery at completion of prednisolone treatment, and 40/65 (61.5%) at 6-8 months' follow-up. 41/85 (48.3%) of patients with motor loss experienced improvement, and 42/85 (49.4%) at follow-up. Analysis of the mean scores at start of prednisolone treatment, completion and at follow-up using Student's t-test showed highly significant ($p<0.001$) differences between scores before and after treatment. The benefit is maintained as seen after a period of 6-8 months follow-up.

It was concluded that treatment of acute nerve function impairment at field level by paramedical workers, using a standardized regimen of prednisolone is feasible, practical and effective.

DHOPLE, A.M. Comparative in vitro activities of rifamycin analogues against *Mycobacterium leprae. Indian J. Leprosy*, v.69, n.4, p.377-384, Oct-Dec., 1997.

Comparative activities of various rifamycin analogues against leprosy were studied by evaluating their effects on in vitro growth of *Mycobacterium leprae* in DH medium as described earlier. Among the seven analogues studied, KRM-1648 was found to be the most potent in inhibiting the growth of rifampicin-sensitive strains of M. *leprae*, MIC being 0.05 ug/ml. This was followed by KRM-2312 and T9 (MIC of each being 0.1 ug/ml) and rifabutin (MIC, 0.2 ug/ml). Rifampicin, along with KRM-1657 and KRM-1668, were least effective, with MIC for each being 0,4 ug/ml. The effects of each at their respective MICs were bactericidal. The results were similar for rifampicin-resistant strains of M. *leprae*, but the MICs were higher than those obtained with rifampicin-sensitive strains of M. *leprae.*

Thus, even though rifampicin has been the first-line drug in the treatment of leprosy, the results in present studies suggest that other rifamycin analogues are available that are more potent than rifampicin against both rifampicin-sensitive as well as rifampicin-restraint strains of M. *leprae.*

EBENEZER, G.J., SUNEETHA, S., ARUNTHATHI, S. Clinical and histopathological activity in paucibacillary leprosy patients after fixed-duration multidrug therapy. *Leprosy Rev.*, v.68, n.3, p.218-224, September, 1997.

In 37 clinicaly-diagnosed boderline-tuberculoid (BT) leprosy patients skin biopsies were done prior to starting multidrug therapy (MDT) and at the end of 6 months terapy. Clinical and histopathological activity, graded as active, resolving and inactive, were studied at the end of 6 months of MDT.

Of the 37 clinically-diagnosed B1 pacients 24 could be confirmed by histopathology as having BT leprosy, while the other 13 biopsies showed feactures of indeterminate (I) leprosy. After 6 months of MDT, out of the 24 histopathologically-confirmed BT patients, 4 (17%) showed clinical activity and 8 (33°/x) showed histopathological activity. Of the 13 histopathologically-diagnosed indeterminate cases all were clinically inactive but histological activity persisted in 3 cases (23%). Out of the 37 clinically-diagnosed BT patients 3 showed both clinical and histopathological activity at the end of MDT.

This study emphasizes the importance of performing histopathological examinations on leprosy patients undergoing research studies for the confirmation of diagnosis and for proper classification of the disease. The hitopathological activity that outlasts the MDT may he due to the bacillary fragments that persist but clinical activity coupled with histopathological activity seen in 3 patients at the end of 6 months may foreshadow a relapse and these patients and others like them need to be followed up for longer durations.

MAW, Win Win, TOMIOKA, Haruaki, SATO, Katsumasa, SAJTO, Hajime. Studies on therapeutic activity of benzoxazinorifamycin KRM-1648 in combination with other antimicrobial agents and biological response modifiers interferon-y and granulocyte-macrophage colony-stimulating factor against *M. leprae* infection in athymic nude mice. *Int. I. Leprosy,* v.65, n.3, p.345-351, September, 1997.

In the present study, we evaluated the in vivo *anti-Mycobacterium leprae* activities of KRM-1648 (KRM) given at long intervals in combination with ofloxacin (OFLX), clofazimine (CFZ), and dapsone (DDS). We also examined the combined effects of two biological response modifiers (BRMs), gamma interferon (IFN-y) and granulocyte-macrophage colony-stimulating factor (GM-CSF), on the therapeutic efficacy of KRM. KRM exhibited potent therapeutic efficacy against M. *leprae* infection in mice even when given at 4-week intervals. KRM displayed increased efficacy in combination with OFLX, CFZ, and DDS (given three or six times per week) when given to mice in the multidrug combination KRM+OFLX+ CFZ+DDS. The therapeutic efficacy of KRM given at 4-week intervals was increased by combined use with IFN-y but not by GM-CSF. Adoptive transfer of M. *leprae* antigen-primed lymphocytes of euthymic mice to recipient athymic nude mice with progressive M. *leprae* infection markedly enhanced host resistance.

QUEIROZ, R.H.C., SOUZA, A.M., MELCHIOR, E., GOUVEIA, E.G., CARVALHO, D. Influence of acetylador phenotype on the haematological and biochemical effects associated with dap-sone in leprosy patients. Leprosy Rev., v.68, n.3, p.212-217, September, 1997.

Methaemoglobinaemia and haemolytic anaemia were the principal side-effects observed in 30 leprosy patients undergoing long-term treatment with dapsone as a single drug or as part of multidrug therapy. Hepatic, pancreatic and renal evaluations showed no relevant clinical changes. Since N-acetylation is a major metabolic pathway for dapsone, slow acetylation phenotype may be a risk factor for the development of these reactions. To confirm this hypothesis we correlated acetyla-tor phenotype and the haematological and biochemical effects induced by dapsone.

No excess proportion of slow acetylators was found. We conclude that slow acetylators are not at greater risk of developing haematological side-effects of dapsone than fast acety-lators.

QUINTANA GINESTAR, M.V., RUIZ HIDALGO, G.D., TERENCIO DE LAS AGUAS, J. Tepezcohuité: una alternativa en el tratamiento de Jas úlceras neurotróficas de la lepra. A propósito de un caso. *Fontilles - Rev. Leprol.,* v.21, n.2, p.167-173, Mayo-Agosto, 1997.

Tepezcohuité oil used in the treatment of trophic ulcers of the foot with long evolution in a lady patient diagnosed as cured leproumatos leprosy.

No infections appeared during the cicatrization of the ulcers.

It's use as an alternative therapeutics in countries where it is common and easy to obtain.

RADA, E., ULRICH, Marian, ARANZAZU, Nacarid, RODRIGUEZ, Vestalia, CENTENO, Marta, GONZALEZ, !Yonne, SANTAELLA, Carlos, RODRIGUEZ, Morella, CONVIT, Jacinto. A follow-up study of mutibacillary hansen's disease patients treated with multidrug therapy (MDT) or MDT + immunotherapy (IMT). *Int. 1. Leprosy, v.* 65, n. 3, p. 320-327, September, 1997.

Multibacillary (MB) leprosy patients treated with multidrug therapy (MDT) or MDT + immunotherapy (IMT) with BCG + heat-killed. *Mycobacterium leprae* were tested annually for their ability to proliferate in vitro to the mycobacterial antigens BCG, M. *leprae solu-*

ble extract, and intact M. leprae. IgM antibody responses to phenolic glycolipid I (PGL-I) were measured, as well as serum nitrite levels in patients' sera, before, during and after treatment. Patients who received only MDT did not present cellular reactivity to intact M. *leprae* antigens, in contrast to the results obtained with BCG, which elicited reactivity at time zero, that increased after treatment. Regarding PGL-J antibody variations in relation to the initial value, we observed a statistically significant marked decrease at the end of 2 year which continued to fall in successive evaluations. MB patients showed high initial serum nitrite concentrations which dropped drastically with treatment. This decay was apparently associated with the bacillary load present in these patients.

The group submitted to IMT+MDT showed high and long-lasting T-cell responses to mycobacterial antigens in a significant number of initially unresponsive MB patients. There was a marked increase to M. *leprae* soluble extract and BCG, as well as a more variable response to whole bacilli. The antibody levels in this group of patients are sustained for a somewhat longer period and decreased more slowly during the 5-year follow up.

REED, N. K., VAN BRAKEL, Wim H., REED, Darren S. Progress of impairment scores following commencement of chemotherapy in multibacillary leprosy patients. *Int. I. Leprosy,* v.65, n.3, p.328-336, September, 1997.

Study aim: To investigate the progress of impairment over time in multibacillary (MB) leprosy patients.

Study design: Retrospective cohort study.

Study population: One-thousand-eighty-two MB patients newly registered in nine field clinics in the Western Region of Nepal between 1980 and 1993.

Methods: Data on impairment at diagnosis and at yearly intervals afterward were collected from patient records of MB patients already released from multidrug therapy (MDT). The World Health Organization (WHO) 1988 "disability" grading scale (0-2, for both eyes, hands and feet-six sites) was used as a measure of impairment. For the analysis we summed the WHO grading for the six sites into an eyes-hands-feet (EHF) sum score (minimum 0, maximum 12). The EHF score at 2 years of follow up was used to compute the main outcome measures: impairment at 2 years, yes or no, and deterioration of impairment compared with diagnosis. The combined effect of age, sex, classification and impairment status at diagnosis on the outcome was examined with logistic regression.

Results: At diagnosis, 55.8% of the patients had some impairment. This proportion decreased over 2 years to 43.9%. Among patients without initial impairment, 31/310 (10%) developed impairment during the study period. This was 81/396 (20.5%) among patients with impairment at diagnosis. The adjusted odds ratio (OR) for developing impairment was 1.87 195% confidence interval (CI) 1.06-3.32] for patients with initial sensory impairment (WHO grade 1) and 1.98 (95% CI 1.15-3.4) for those with initial visible deformity (WHO grade 2). Among patients with impairment at diagnosis, 195/396 (49.2%) had improved after 2 years.

Conclusions: The proportion of patients with impairment after 2 years of antileprosy treatment was 12% less than at diagnosis. Among patients without initial impairment, 10% had developed some impairment after 2 years. The risk of developing impairment was almost double for those with sensory impairment or visible deformity at diagnosis. For purposes of monitoring, evaluation and planning, both the proportion of patients with sensory impairment (WHO grade 1) and the proportion with visible deformity (WHO grade 2) should be reported at diagnosis and at release from treatment.

SHARMA, V. K., KAUR, Inderjeet, VATVE, Maneesha, KUMAR, Shushan. Rifampicin-induced urticaria in leprosy. *Leprosy Rev.,* v.68, n.4, p.331-332, December, 1997.

A 28-year-Old housewife from Uttar Pradesh, India had suffered from lepromatous leprosy with necrotic erythema nodosum leprosum (EEL) for the last 2 years. Her bacteriological and morphological indices were 4+ and 1%, respectively and a skin biopsy confirmed the diagnosis of lepromatous leprosy with EEL. Her renal, hepatic and haematologic parameters were within normal limits except for haemoglobin of 8 g%. She was started on WHO-MBR (rifampicin, dapsone and clofazimine) and prednisolone 40 mg daily. Within half an hour of the first loading dose the patient developed severe itching over the trunk and extremities followed by urticaria. There was no rhinorrhoea, fever, bronchospasm or hypotension. Urticaria subsided within 4-6h after administration of an antihistaminic and there was no recurrence of symptoms during daily intake of dapsone and clofazimine. Urticaria recurred within 30 min of the 2nd and 3rd loading doses and increased in severity. Urticaria did not recur when rifampicin was omitted from the 4th loading dose onwards. Patient was treated with oflaxacin 400mg daily for 8 weeks and continued on dapsone and clofazimine. There was no recurrence of urticaria during 2 years follow up.

An open patch test and prick test with rifampicin dissolved in acetone was negative but administration of 300mg rifampicin under observation lead to the development of itching and urticaria within 30 min.

SINGLE-LESION MULTICENTRE TRIAL GROUP. Efficacy of single-dose multidrug therapy for the treatment of single-lesion paucibacillary leprosy. *Leprosy Rev.,* v.68, n.4, p.341-349, December, 1997.

A multicentre double-blind controlled clinical trial was carried out to compare the efficacy of a combination of rifampicin 600 mg plus ofloxacin 400 mg plus minocycline 100 mg (ROM) administered as single dose with that of the standard six-month WHO/MDT/PB regimen. The subjects included 1483 cases with one skin lesion who were previously untreated, were smear-negative, and had no evidence of peripheral nerve trunk involvement and they were randomly divided into study and control groups. The total duration of the study from the day of intake was 18 months, and 1381 patients completed study. Only 12 patients were categorized as treatment failure and no difference was observed between the two regimens. Occurrence of mild side-effects and leprosy reactions were minimal (less than 1%) in both groups. This study showed that ROM is almost as effective as the standard WHO/MDT/PB in the treatment of single lesion PB leprosy.

SUGUMARAN, D. Samuel Thomson. Steroid therapy for paralytic deformities in leprosy. *Int. J. Leprosy,* v.65, n.3, p.337-344, September, 1997.

One-hundred-forty-nine patients with 272 nerve paralyses, with visible deformity and gross disability, were prospectively followed up with steroid therapy. Out of 151 ulnar paralyses, 101 recovered (67%). Out of 52 median nerve paralyses, 45 recovered (86%); out of 69 foot drops, 54 recovered (78%) for an overall improvement of 73%. Serious side effects were few. Hence, steroid therapy should be widely encouraged for the treatment of early nerve damage to prevent permanent deformity/disability, and vigilance in spotting complications of steroid therapy is emphasized.

VENKATESAN, K., MATHUR, A., GIRDHAR, A., GIRDHAR, B.K. Excretion of clofazimine in human milk in leprosy patients. *Leprosy Rev.,* v.68, n.3, p.242-246, September, 1997.

Clofazimine is an important and effective constituent of multi drug therapy for leprosy. A

study has been conducted to determine the distribution of clofazimine in maternal milk so that the safety of breast-feeding during maternal ingestion of the drug can be ascertained. Eight female leprosy patients (LL/BL) on clofazimine, 50mg daily or 100mg on alternate days for 1-18 months, (mean 5.0±1.81 months; median 3.25 months) and in the early lactating phase were studied. Blood samples and milk specimens were collected 4-6hr after the last daily dose. Clofazimine was assayed in the milk and plasma samples by HPTLC. Mean plasma and milk clofazimine levels were 0.9±0.03 ug/ml and 1.33±0.09 ug/ml respectively. The ratio of milk to plasma drug concentration ranged from 1.0 to 1.7 with a mean of 1.48±0.08. The amount of drug ingested by the infants was 0.199±0.013 mg/kg/day which represented 22.1±1.9% of the maternal dose.

WILLCOX, M. L. The impact of multiple drug therapy on leprosy disabilities. *Leprosy Rev.*, v.68, n.4, p.350-366, December, 1997.

In an overview of controlled trials, it is shown that bactericidal drugs increase the short-term risk of Type I reactions, but prevent the long-term development of new impairments caused by bacterial proliferation. Clinical experience suggests that the clofazimine component of multiple drug therapy (MDT) has reduced the incidence of Type II reactions or erythema nodosum leprosum (EEL). The principal impact of MDT, compared with monotherapy, has been to reduce the duration of active disease, thus preventing the deterioration of disability scores. Reduction of population disability rates is mainly achieved by earlier detection and treatment. MDT has a number of indirect benefits such as improved compliance, decreased cost, and increased motivation and availability of leprosy workers. However, MDT must be supplemented by other measures to prevent and treat disabilities.