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Abstracts

The following are reproduced with our grateful acknowledgement to the Bureau of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT.

SACHDEV K N, MATHUR D R, CHAWLA S N (1980) **Status of circulating 'T' lymphocyte population in leprosy.** *Leprosy in India* 1980; 52(3): 383–9

'"T" lymphocyte population was estimated in 40 cases of various types of leprosy by E-rosette formation. The mean percentage value of T-lymphocyte was significantly low in the lepromatous group as compared to tuberculoid and borderline leprosy. The mean percentage population of "T" lymphocyte was also compared with 24 normal healthy control cases and significantly low levels were observed in all types of leprosy. The population of "T" lymphocytes was also co-related with tuberculin tests in leprosy patients and healthy control cases. Lowest count of "T" lymphocyte population and smallest diameter of erythema was observed in lepromatous leprosy, suggesting impaired cell mediated immunity in this group.'

MELSOM R, DUNCAN M E, HARBOE M, BJUNE G **Antibodies against *Mycobacterium leprae* antigen 7 from birth to 18 months of age: an indicator of intra-uterine infection in leprosy.** *Clinical and Experimental Immunology* 1980; 42(1): 107–13

'All babies of three non-leprosy mothers and ten tuberculoid leprosy mothers and four of five babies of mothers with inactive lepromatous leprosy showed a decline in serum concentration of antibodies against *M. leprae* antigen 7 during the first 4 months of life, as expected from catabolism of maternal IgG. By contrast, ten of twenty babies of mothers with active lepromatous leprosy showed a decline in concentration of anti-*M. leprae* 7 antibodies considerably less than expected. This indicates that these babies have been stimulated by *M. leprae* antigen 7, either as free antigen or by viable *M. leprae* before birth, and thus that leprosy may occur as a congenital infection. Studies of anti-*M. leprae* antibodies in repeated serum samples obtained during the first 18 months of life indicated that children of mothers with bacilliferous leprosy are frequently exposed to *M. leprae* to a sufficient extent to stimulate the immune system of the baby to production of anti-*M. leprae* antibodies during this period. The consequences of this exposure to *M. leprae* should be ascertained by careful clinical studies.'

HUSSER J -A, ARNOLD J, MARCHAND J -P Corrélation entre clinique et histologie dans la lèpre. **[Correlation between clinical and histological classification in leprosy]** *Dakar Médical* 1980; 25(2): 137–42 English summary

'The histo-clinical correlations have been studied in newly detected cases of leprous patients during consultations in the Dakar Department of Endemic Diseases.

'These stress the difficulty of a pure clinical diagnosis in unstable forms of leprosy and indicate the importance of a histological examination in their classification and in the study of their therapeutic evolution.'

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KOYA G, NARITA N, ARAKAWA I **[Histopathological findings of serial preparation including the total length of nerve of extremitas thoracica in leprosy]** *Japanese Journal of Leprosy* 1980; 49(1): 1–9 [In Japanese]

'Most reports on the histological changes in the peripheral nerves in leprosy have been made from the study of biopsy specimens. A study of bigger nerves, in their entire length, including the spinal cord, has been made occasionally as this is possible only at autopsy. We have undertaken a detailed study of the peripheral nerves in lepromatous leprosy by which made an addition to modified embedding method of their entire length. In addition, a detailed histological examination of the spinal cord was also undertaken. Histological examination of peripheral nerves of the upper extremities including the plexus and the roots of origin from the spinal cord dissected from three autopsy cases showed a greater degree of destruction of the axis cylinders and myelin sheaths in a spindle-like form and moderate destruction of them in proximal parts. Lepra bacilli, besides being present all along the peripheral nerves were found to be concentrated in a spindle-like form part.

'The examination of the spinal cords in three cases of lepromatous leprosy both histopathologically as well as by the staining method for the bacilli by Harada, failed to reveal acid fast organisms.

'It is concluded, therefore, that the lepra bacilli travel along the peripheral nerves to the roots, but fail to enter the spinal cord and it degenerates only secondarily.'

HAN S -H, TSAI L -C, HU S C, LOO S -T **Conversion of reactions to leprolin and lepromin in patients with lepromatous leprosy by the transfer factor.** *Chinese Journal of Microbiology and Immunology* 1980; 13(1): 1–8

'Conversion of leprolin and early lepromin reactions was achieved by two injections of transfer factor made of lymphocytes from lepromin-positive tuberculoid leprosy patients. However, the late reaction to lepromin remained unchanged. The importance of the degree of sensitivity of the cell donor was demonstrated, and a booster dose was also found to be useful. The feasibility of using transfer factor in treatment of lepromatous leprosy is briefly discussed.'

NATH I, VON ROOD J J, MEHRA N K, VAIDYA M C **Natural suppressor cells in human leprosy: the role of HLA-D-identical peripheral lymphocytes and macrophages in the *in vitro* modulation of lymphoproliferative responses.** *Clinical and Experimental Immunology* 1980; 42(2): 203–10

'Six families with HLA-D identical siblings suffering from leprosy were studied. Lymphocytes and macrophages isolated from the peripheral blood were co-cultered with allogeneic, HLA-D-identical cells and stimulated with *M. leprae* antigens and concanavalin A. Tuberculoid patients had circulating lymphocytes which showed marked functional suppression of lymphoproliferative responses to antigen and mitogen. In contrast, lepromatous patients showed weak lymphocyte suppressor activity. Macrophages derived from responder individuals augmented, while those derived from lepromatous patients inhibited, *M. leprae*-induced proliferation of lymphocytes.'

NATH I, SINGH R **The suppressive effect of *M. leprae* on the *in vitro* proliferative responses of lymphocytes from patients with leprosy.** *Clinical and Experimental Immunology* 1980; 41(3): 406–14

'Peripheral blood lymphocytes from sixty leprosy patients and eight healthy contacts known to be responsive to *M. leprae*, were stimulated *in vitro* with concanavalin A (Con A) or PPD alone or in combination with autoclaved, whole *M. leprae*. Time kinetics and the percentage of inhibition induced by *M. leprae* differed in the two

disease groups and contacts. Antigen-generated suppression of Con A-stimulated lymphocyte transformation was observed on day 4 in seventeen of twenty-one (80%) tuberculoid patients and six of seventeen (35.3%) untreated lepromatous patients. Healthy contacts and 53% lepromatous individuals showed enhanced Con A responses in the presence of antigen. On prolongation of antigen presence to 6 days, a marginal effect was noted in the tuberculoid group. In contrast, all healthy individuals and some lepromatous patients showed increased inhibition of Con A responses. *M. leprae* antigens showed uniform inhibition of PPD-induced ^{3}H-thymidine incorporation in leprosy patients and healthy contacts.'

ABE M, MINAGAWA F, YOSHINO Y, OZAWA T, SAIKAWA K, SAITO T **Fluorescent leprosy antibody absorption (FLA-ABS) test for detecting subclinical infection with *Mycobacterium leprae*.** *International Journal of Leprosy* 1980; 48(2): 109–19

The FLA-ABS test is an indirect fluorescent antibody test using *Mycobacterium leprae* as antigen, test sera having been previously absorbed with suspensions of BCG and *Myco. vaccae*. Under these modified conditions it was found to be positive in nearly 100% of patients with bacteriologically positive leprosy, in 80% of those with tuberculoid leprosy, but negative in pulmonary tuberculosis and in healthy non-contacts. There were 2 false positives in 138 hospital patients, due to cross-reactions with *Myco. smegmatis*.

The test was positive in 92% of household contacts of leprosy patients, among whom 7 out of 39 showed dubious Mitsuda reactions attributed to infection with *Myco. leprae* with an inadequate immune response. The test was positive in 109 of 173 schoolchildren with signs suggestive of leprosy. A comparison of results with the FLA-ABS test using different mycobacterial antigens was used to assess the incidence of subclinical leprosy infection in schoolchildren which, it is thought from the results, may be nearly 200 times higher than the incidence of leprosy in this area (Okinawa).

D S Ridley

KAWAGUCHI Y, MATSUOKA M, SUSHIDA K, TANEMURA M **[Susceptibility to murine leprosy bacilli of C3H/He mice]** *Japanese Journal of Leprosy* 1980; 49(1): 14–19 [In Japanese]

'C3H/He strain mice, approximately 5 weeks of age, were subcutaneously inoculated at the thorax with 0.25 ml of a 1:1000 saline suspension prepared from a malignant leproma in a C3H mouse infected with murine leprosy bacilli, strain Hawaiian, about 25 weeks earlier. The susceptibility of these mice to the bacilli was evaluated by the development of leproma at the infection site and also by the involvement of visceral organs.

'In only 2 out of 10 male mice tested, typically malignant leproma was observed at the infection site throughout the observation period. In almost all the other mice, subcutaneous leproma showed benign-like features at the early stage of infection. The leproma increased in size gradually, but did not show typically malignant features even at 40 to 50 weeks. However, visceral lesions in all the mice seemed to be severe with time, since autopsy revealed extensive involvement of the viscera. The visceral lesions and mean survival time of C3H/He mice were similar to those obtained in C3H mice. There were no pronounced differences in the susceptibility between male and female groups.

'The susceptibility of C3H and C57BL/6 strain mice was also examined by the same manner above mentioned, as controls. Mice of C3H and C57BL/6 strains showed typically malignant and benign features, respectively.

From the observations of this and of our earlier experiments, it is clear that the disease course in C3H/He mice was intermediate to that observed in C3H and CF 1 mice.'