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Abstracts

1. FILICE, G. A., GREENBERG, R. N. & FRASER, D. W. **Lack of observed association between armadillo contact and leprosy in humans.** *Am. J. Trop. Med. Hyg.,* 1977, v. 26, No. 1, 137–139.

In 1971 it was discovered that the nine-banded armadillo (*Dasypus novemcinctus*) could be infected in the laboratory with *Mycobacterium leprae*, and would manifest disease similar to the lepromatous form of leprosy in man. In 1975 several wild armadillos captured in Louisiana were found to have a disease identical to the *M. leprae* infection in laboratory animals. To determine if there is a significant association between contact with armadillos and presence of leprosy in humans, the armadillo contact of persons with indigenous leprosy in Louisiana was compared to the contact of matched controls. No difference in the nature of frequency of contact was found. If this infection of wild armadillos is of recent onset, an association with human leprosy in enzootic areas may not be detectable for several years.

[See *Trop. Dis. Bull.,* 1976, v. 73, abstr. 896.]

2. SHIELD, M. J., STANFORD, J. L., PAUL, R. C. & CARSWELL, J. W. **Multiple skin testing of tuberculosis patients with a range of new tuberculins, and a comparison with leprosy and *Mycobacterium ulcerans* infection.** *J. Hyg.* Cambridge, 1977, v. 78, No. 3, 331–348.

This very detailed study of skin sensitivity to various mycobacterial antigens cannot adequately be abstracted and should be studied in the original by those interested in the subject.

The work was carried out in Burma, Libya, Kenya and Uganda (the last 2 grouped as East Africa). Patients suffering from active tuberculosis and undergoing treatment in hospital were each tested with 4 mycobacterial antigens. Those being given steroid therapy were excluded because of the known effect of such preparations in suppressing tuberculin sensitivity.

Control groups were formed from normal subjects and patients in Burma suffering from leprosy were also tested for comparison.

The antigens were the following:

Organism	Antigen
M. tuberculosis	PPD (RT23)
M. tuberculosis	Tuberculin
M. sp. 'A'	A*-in
M. avium	Aviumin
M. gordonae	Gordonin
M. kansasii	Kansasin
M. marianum	Marianin
M. ulcerans	Burulin
M. xenopi	Xenopin
M. chelonei	Chelonin
M. duvalii	Duvalin
M. flavescens	Flavescin
M. fortuitum	Ranin
M. gilvum	Gilvin
M. neoaurum	Neoaurumin
M. nonchromogenicum	Nonchromogenicin
M. vaccae	Vaccin

The sources of all are stated.

The antigens were injected intracutaneously, the dose being 0.1 ml containing 0.2 μg of protein. Reactions were read after 72 h and measured. The criterion of a positive reaction was induration of 5 mm or over.

(In order to avoid the confusion caused by using the term "tuberculin" for the antigen produced from any mycobacterium the authors use "Tuberculin" with a capital "T" in the specific sense and "tuberculin" with a small "t" in the non-specific sense.)

The results are presented at length in tables, graphs and nomograms.

Among the normal subjects it was found that positive reactions to Tuberculin were associated with an enhanced response to all the other tuberculins except A*-in. In Burma, where non-specific mycobacteria were common, sensitization to mycobacterial species other than *M. tuberculosis* played a role in determining responses to different mycobacterial antigens.

In tuberculous patients, enhanced skin responses were also seen but only in those countries (as Libya) where the prevalence of non-specific mycobacterial species was low. Where such were common, as in Burma, the converse held and tuberculosis was associated with diminished sensitivity to each antigen. Excessive sensitization may lead to the depression of sensitivity so that the skin test becomes negative. The non-reactors may thus include subjects never sensitized as well as those whose previous sensitivity has been abolished by excessive sensitization.

A greater percentage of patients with tuberculosis in each country responded to Tuberculin than did the control subjects and with a greater degree of sensitivity. It was found however that in Burma 13% of the patients did not react to Tuberculin or the other antigens with which they were tested.

Patients suffering from lepromatous leprosy and those infected by *M. ulcerans* were also found to display anergy. The significance of all these findings is discussed.

[See also *Trop. Dis. Bull.,* 1976, v. 73, abstr. 2763.]

H. G. Calwell

3. PREMANATH, M. & RAMU, G. **The association of leprosy and tuberculosis.** *J. Indian Med. Ass.,* 1976, v. 67, No. 6, 143–145.

Observations are made on 40 patients suffering from both leprosy and tuberculosis, 29 of them lepromatous and 11 borderline in leprosy type. The serious prognosis of tuberculosis when co-existing with lepromatous leprosy is stressed, and synergism rather than antagonism between the 2 mycobacteria is thought to be a possibility.

T. F. Davey

4. MERLIN, M., CARME, B. & KAEUFFER, H. Bilan de 25 ans de chimiothérapie anti-lépreuse en Polynésie française. Influence sur l'age d'apparition de la maladie. [**A balance-sheet after 25 years of leprosy treatment in French Polynesia. Its effect on the age of onset of the disease.**] *Bull. Soc. Path. Exot.,* 1976, v. 69, No. 5, 412–422. English summary.

The authors provide a summary of the main features of leprosy in the scattered islands of French Polynesia. The prevalence rates are generally low (about 2.48 per 1000), but in its clinical features and type ratio the disease resembles that found in the more serious situation in Asia, with about half the patients suffering from multibacillary forms. There are indications that leprosy was introduced into the islands in about 1875 by the Chinese.

The efforts at leprosy control—based on accepted principles of early case finding, school surveys, contact examination, the provision of free treatment—appeared to give good results, with progressive reduction of incidence rates (from 0.25 to 0.9 per 1000 in the years 1950 to 1975). Recently, however, vigilance has unfortunately relaxed and newly-diagnosed cases present with well-established infections and a disturbing increased prevalence is noted in the urban zone of Tahiti.

BCG vaccination now reaches 80% of those aged less than 20 years and prophylactic dapsone has been offered over the past 4 years to contacts.

The authors conclude that chemotherapy alone, as provided in the islands studied, is insufficient to guarantee a sustained decline in the incidence of leprosy and that, where the population is increasing rapidly and subject to the health hazards of migration, further measures are imperative to control the endemic.

An interesting sidelight on the changing pattern is given in the figures of the "age at onset" [which is equated with the age on diagnosis]. In the early years of the study (1925 to 1949), the median age at onset was 17 years; more recently (1970 to 1976) it is 27. [The figures cited in this analysis are too small and unreliable for epidemiologically valid conclusions to be drawn.]

S. G. Browne

5. MERLIN, M., CARME, B. & LAIGRET, J. Impact de la modification profonde des structures d'une société sur l'évolution d'une maladie endémique: la lèpre en Polynésie Française. [**Effect of changing environmental structures on the course of an endemic diasease; leprosy in French Polynesia.**] *Bull. Soc. Path. Exot.,* 1976, v. 69, No. 5, 422–433. English summary (7 lines).

The authors describe briefly the rapidly changing picture of life in the Pacific Islands. From the idyllic tranquillity of 25 years ago, economic development has transformed brusquely the economy, the life-style, and the prevalence of leprosy. The construction of the international airport at Tahiti and the establishment of the Atomic Energy Experimental Centre have attracted migrant populations who now earn inflated wages after abandoning their subsistence farming or fishing. In 25 years the population has doubled and the economic transformation has resulted in declining standards of hygiene.

Although leprosy was never a serious public health problem in the islands, with the exception of the Marquesas and Tuamotu, where there were rather higher prevalence rates, the migration of populations that include many undiagnosed and untreated leprosy sufferers who are potentially contagious presents the authorities with a serious situation. An example given is the finding, during routine school surveys, of children suffering from florid lepromatous leprosy. Since about 53,000 people (41% of the population) are now concentrated in Tahiti itself, the existence of the virtually uncontrolled focus in the urban area augurs ill for the future unless vigorous measures are taken.

S. G. Browne

6. ABREU, A., WERTHEIN, L. J., RUIZ DE ZARATE, S. & AYRADO, A. Programa de control de lepra en Cuba: estado actual. [**Control programme for leprosy in Cuba: current state.**] *Revta Cub. Hig. Epidem.,* 1976, v. 14, No. 2, 117–122. English summary.

The programme in force from 1962 to 1971 involved updating the census, ambulatory treatment and annual examination of persons living with patients. A new programme established in 1972 has exploited the improved dermatological and leprological resources of the country and is characterized by decentralization of diagnostic and therapeutic measures. Persons living with patients undergo chemoprophylaxis. Prevention of physical handicaps and rehabilitation of those afflicted are fundamental aims. In 1974, 307 new cases were detected. There were 4672 known leprosy cases, of which 4517 were controlled. 88.2% of 12,530 persons in contact with leprosy were under surveillance.

Ann Grant

7. LANGUILLON, J., CARNUS, H. & ROUX, G. Le test de transformation lymphoblastique chez les lépreux. Sa signification comme indicateur de l'immunité cellulaire. [**The lymphoblastic transformation test in leprosy. Its significance as an indicator of cellular immunity.**] *Bull. Soc. Méd. Afr. Noire Lang. Fr.,* 1976, v. 21, No. 4, 419–424. English summary.

The authors give a useful summary of cellular and humoral immunity in the various types of clinical leprosy, correlating them in immunological and histopathological terms.

In an attempt to resolve the discordancies in published investigations on the subject, they report the results of their studies of the lymphoblastic transformation test in leprosy. The subjects, African under treatment in Dakar (Senegal), comprised 54 with tuberculoid leprosy (all Mitsuda-positive), 91 with lepromatous leprosy (all Mitsuda-negative), composed of 48 in a reactional state and 43 non-reactional, and 10 with borderline ("interpolar") leprosy whose Mitsuda reaction was negative or doubtful.

They found no difference between these groups in the lymphoblastic transformation test, or between the reactional and non-reactional subgroups in patients with lepromatous leprosy. In addition, patients with borderline leprosy showed a similar scatter of reactivity towards phytohaemagglutinin.

They conclude that their results support the supposition that the depression of cellular immunity in leprosy is associated with a limited and specific antigenic structure possibly present on the surface of *Mycobacterium leprae.*

S. G. Browne

8. PETCHCLAI, B., VILAIPRASERT, S., HIRANRAS, S. & RAMASOOTA, T. **Serum IgE levels in leprosy.** *J. Med. Ass. Thailand,* 1977, v. 60, No. 1, 19–21.

Serum IgE level was determined in 23 cases of tuberculoid and 19 cases of lepromatous leprosy, to see if there is any increase corresponding to the increase in other immunoglobulins. Significantly increased levels were found in both groups. The levels were higher in the lepromatous group but there was no statistical significance. Great fluctuations in serum IgE levels were observed in some tuberculoid patients having 2 collections 15 months apart. The results suggest a hyperactive IgE forming system which is occasionally influenced by and which responds to stimuli other than leprosy bacilli.

9. RAMU, G. & BALAKRISHNAN, S. **Plasma fibrinogen levels and fibrinolytic activity in lepromatous leprosy.** *J. Ass. Physns India,* 1977, v. 25, No. 2, 133–138.

A longitudinal study was carried out on plasma fibrinogen levels in patients with lepromatous leprosy in different phases with varying clinical manifestations. Significant increases were noticed in plasma fibrinogen levels in cases with lepra reaction particularly those manifesting necrotizing skin lesions, kidney lesions and sclerodermic lesions. The increase in fibrinogen level was associated with a decrease in fibrinolytic activity. Treatment with steroids lowered the plasma fibrinogen levels. A direct correlation between increase in the plasma fibrinogen level and ESR was noticed. The significance of those findings in relation to prognosis of the disease and treatment of "lepra reaction" is discussed.

[See also *Trop. Dis. Bull.,* 1975, v. 72, abstr. 512.]

10. HERNANDEZ ANGULO, M., FERNANDEZ BAQUERO, G. & FRAGUELA RANGEL, J. V. Informe preliminar sobre una forma histopatológica atípica de una lepra lepromatosa. [**Preliminary report of an atypical histopathological picture in lepromatous leprosy.**] *Revta Cub. Med. Trop.,* 1976, v. 28, No. 2, 93–100.

The English summary appended to the paper is as follows:

"A patient with lepromatous leprosy whose atypical histopathologic picture involved giant vacuoles and cell atypia is presented. The summary of his clinical record is given, and bibliography is reviewed."

11. SRIVASTAVA, K. P. & KESARWANI, R. C. **Management of trophic ulcers in leprosy patients.** *J. Indian Med. Ass.,* 1976, v. 67, No. 11, 250–252.

Thirty-two cases of trophic ulcer of the foot in leprosy patients are reviewed after treatment at the Orthopaedic Department of the S.N. Medical College, Agra, using varied procedures. The best long-term results were obtained by local excision combined with metatarsectomy of the pressuring head. [The acceptance of leprosy patients into the wards of a teaching hospital is commendable.]

T. F. Davey

12. PETERS, J. H. *et al.* **Acedapsone treatment of leprosy patients: response versus drug disposition.** *Am. J. Trop. Med. Hyg.,* 1977, v. 26, No. 1, 127–136.

In 22 Filipino patients with lepromatous leprosy, receiving their first injection of 225 mg acedapsone (DADDS), dapsone (DDS) and monoacetyl DDS (MADDS) were present in plasma in approximately equal quantities. Peak levels occurred between 22 and 35 days. The half-times of disappearance ($T_{\frac{1}{2}}$) from plasma were 43 days for DDS and MADDS and 46 days for DADDS. 17 patients were rapid and 5 patients slow acetylators. The $T_{\frac{1}{2}}$ of DDS after DDS treatment in the patients was directly related to the minimum levels of DDS at 77 days after DADDS treatment and these were 8-fold higher than the minimum inhibitory concentration of DDS for *Mycobacterium leprae* in mice and rats, but not all patients responded satisfactorily. No relationship could be demonstrated between the bacteriological response and any of the pharmacological parameters examined in these Filipino patients. In a companion study of 447 leprosy patients of all disease types from the Karamui District of Papua New Guinea, the type of response and sulphone levels were unrelated. No substantial accumulation of the sulphone in patients receiving continuous DADDS therapy for 5 years was indicated.

T. F. Davey

13. REES, R. J. W. & McDOUGALL, A. C. **Airborne infection with** *Mycobacterium leprae* **in mice.** *J. Med. Microbiol.,* 1977, v. 10, No. 1, 63–68.

This study was designed to investigate the possibility of airborne infection with *Mycobacterium leprae.* The authors used thymectomized irradiated mice exposed to aerosols containing *M. leprae* with an immediate lung retention of 1×10^5 bacteria. Fourteen to 24 months later, 10 out of 30 mice had considerable numbers of acid-fast bacilli with the characteristics of *M. leprae* in one or more homogenates prepared from ears, footpads, nose or lungs. Evidence is presented from the distribution of *M. leprae* that the infection had arisen from the systemic spread of bacilli initially entering the lungs, rather than from multiplication of organisms locally retained there, or in the nose at the time of airborne infection. The relevance of these results to the possible route of infection with leprosy in man is discussed.

T. F. Davey

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