Abstracts

1. **Dapsone induced peripheral neuropathy**, by E. H. WYATT and J. CLARKE-STEVENS. *Br. J. Derm.*, 1972, **86**, 521.

Dapsone, unlike many other organic chemical compounds prescribed for human disease, is rarely suspected of directly causing peripheral neuropathy, although nerve damage not infrequently arises in the course of its use in leprosy.

The authors report a case in which dapsone was under strong suspicion of provoking peripheral neuropathy in a woman aged 24 who had received 8.6 g of the drug orally in 6 weeks for a condition at first considered to be dermatitis herpetiformis (later diagnosed as herpes gestationis). The neurological deficit was predominantly motor, with a small sensory element, and was mainly noted in the upper limbs. The patient continued to take dapsone at the dose of 200 mg daily until she had received 35 g in 139 days.

After dapsone was stopped, the patient reported improvement in the neurological condition; at the end of 16 months full muscular power had returned, and electromyography revealed no persisting abnormality.

S. G. Browne

2. **Comparison of B1912 and Clofazimine (B663) in *Mycobacterium leprae* infections (35654)**, by C. C. SHEPARD, L. L. WALKER, R. H. VAN LANDINGHAM and M. A. REDUS. *Proc. Soc. exp. Med.*, 1972, **137**, 728-729.

In the experimental infection of mouse footpads with *Myco. leprae*, the activity of a recently synthesized rimino-phenazine compound, B1912, was found to resemble very closely that of clofazimine (B663, Geigy) in such matters as the minimal effective dose and bacteriostatic range at different concentrations. Despite differences in the pattern of tissue deposition, as shown by a higher serum level and lower tissue levels (except in fat) in the case of B1912, the activity of the two compounds in the conditions of the investigation is very similar.

S. G. Browne

The following abstracts are reprinted, with permission,
from *Trop. Dis. Bull.*, 1972, Vol. 69

Treatment with 4,4′-diacetyl-diaminodiphenyl-sulfone (DADDS) of leprosy patients in the Karimui, New Guinea, by D. A. RUSSELL, C. C. SHEPARD, D. H. McRAE, G. C. SCOTT and D. R. VINCIN. *Am. J. Trop. Med. Hyg.*, 1971, **20**, 495-501.

The authors report on the clinical and bacteriological results of the first 750 days of treatment of 28 patients with leprosy (out of 327 in a trial reported elsewhere) who had sufficient numbers of leprosy bacilli in their skin smears for appraisal of the proportion of solidly staining bacilli (Morphological Indices) during treatment. This investigation was carried out in the Karimui region of New Guinea, and patients were given an intramuscular injection of the diacetyl derivative of dapsone (DADDS) every 75 days, each injection consisting of 225 mg for adults and 150 mg for children under the age of 6 years.

Morphological Indices fell to near zero in 150 days, and there was a fall in Bacterial Indices compatible with that which would have been expected from standard dapsone therapy. Clinical

response and incidence of lepra reactions were also satisfactory. No drug resistance was noted, but the authors admit that continuing observation of these patients is necessary because of the small quantities of dapsone released by the depot injections (averaging 2.4 mg daily).

W. H. Jopling

4. **Physiopathologie de la névrite hansénienne et bases thérapeutiques (nouvelle approche).** (Physiopathology of leprous neuritis and bases for therapy—a new approach), by A. CARAYON. *Méd. trop.*, 1971, **31**, 503-523.

This detailed and well-documented study of the physiopathology of peripheral neuritis in leprosy embodies the investigations that the author has carried out over the past few years. In particular, the determinative rôle of constrictive fibrous tunnels and osteoligamentous narrowings on the whole pathology of leprous neuritis is supported by clinical observations, perineural lymphography and arteriography with micronized lipiodol, and operative exposure. The vascular and lymphatic occlusion, the slowing of the radio-opaque flow, the 10-fold retardation in the absorption of the injected lipiodol—all indicate the importance of the constriction. In addition, localized arterial spasm reduces the blood flow to the constricted nerve segment.

The commonly affected peripheral nerves are studied in turn, with a wealth of practical detail, and the importance in each case of the anatomical constrictions is demonstrated. Other germane factors, such as the elongation and hence compression of the ulnar nerve when the elbow is flexed, and the presence of a zone of non-inflammatory oedema distal to the site of constriction, are investigated and recorded.

The author attempts to correlate the sites of maximum observed damage in the peripheral nerves with the liberation of specific substances from dead *Mycobacterium leprae*, myelin and Schwann cells, together with enzymes released from leucocytes as the result of chemotherapy.

The bases for rational therapy of threatened or actual peripheral nerve damage are discussed in the concluding section. The author favours a bacteriostatic drug, coupled with surgical release of constricting bands if present.

(This paper covers a vast field in rather summary fashion, touching lightly and provocatively on such specialized realms as the biochemistry and immunology of neuropathology. Unfortunately, no references are given to the numerous works cited.)

S. G. Browne

5. **Prolonged survival of skin allografts in leprosy patients,** by S. H. HAN, R. S. WEISER and S. T. KAU. *Int. J. Lepr.*, 1971, **39**, 1-6.

The authors studied the fate of 30 skin allografts obtained from 10 healthy persons and grafted reciprocally, and on to the skin of 10 patients with tuberculoid leprosy and 10 patients with lepromatous leprosy. The survival times were significantly prolonged in both groups of leprosy patients, with means of 13.44 days in those with tuberculoid leprosy and 15.2 days in those with the lepromatous form, compared with a mean of 11.22 days for the healthy recipients. By the 11th day, the grafts had been rejected in all but 2 of the healthy recipients, whereas the grafts in all but 2 of the patients with leprosy were surviving. Only 2 of the grafts on patients with lepromatous leprosy were rejected by the 14th day. Graft survival was thought to be related, in the case of patients with lepromatous leprosy (all on treatment with dapsone), to the presence of organisms in the skin lesions.

The authors discuss these important findings of impaired allograft immunity in the light of current work on cell-mediated immunity and on specific and non-specific immunological deficiencies.

S. G. Browne

6. **Le traitement de la lèpre par la rifampicine. (The treatment of leprosy with rifampicin),** by J. LANGUILLON. *Med. Afr. Noire,* 1971, **18**, 765-770.

22 patients suffering from lepromatous leprosy were treated with rifampicin (Rimactane) at doses of 900 mg (6 patients), 600 mg (10 patients), and 300 mg (6 patients), daily for 12 months. In all three groups, the Morphological Index fell to zero within 6 months, and the Bacterial Index showed an average fall of between 1.22 and 1.35, no significant dose-related differences being discernible.

Clinical improvement appeared to be rather greater in the group taking the highest dose. Reaction occurred in 2 patients taking the highest dose, 2 in the next group, and 1 in the group given 300 mg daily. No instance of intolerance was seen.

The author recommends a daily dose of 900 mg.

S. G. Browne

7. **Fate of *Mycobacterium leprae* in macrophages of patients with lepromatous or tuberculoid leprosy,** by T. GODAL and R. J. W. REES. *Int. J. Lepr.,* 1970, **38**, 439-442.

Comparisons were made of the ability of cultures of macrophages from patients with lepromatous or tuberculoid leprosy to produce lysis of ingested *Mycobacterium leprae, Myco. lepraemurium* and *Myco. tuberculosis.* After 10 days observation, little or no lysis occurred in any of the preparations and there were no major differences between macrophages from the two groups of patients in respect of lytic ability. These results fail to confirm the findings of Barbieri and Correa [this *Bulletin,* 1968, v. 65, abstr. 919], and of Beiguelman [*ibid.*, abstr. 2523]. Possible reasons for this discrepancy are discussed.

G. R. F. Hilson

8. **Systemic sclerosis masquerading as leprosy in Ghana,** by J. ADDY. *Ghana med. J.,* 1971, **10**, 218-222.

This is a report on 2 Ghanaian males who were originally suspected of having leprosy because some areas of skin had become hypopigmented. In both cases subsequent developments led to a correct diagnosis of systemic sclerosis. After discussing the symptoms and signs of this disease, the author comments that, with regard to the skin, "All that is hypopigmented or depigmented is not leprosy" and, with regard to the fungus, "All that is trophic and clawed is not leprosy."

W. H. Jopling

9. **Does entrapment neuropathy contribute to nerve damage in leprosy?,** by H. SRINIVASAN and P. R. NAMASIVAYAM. *Indian J. med. Res.,* 1971, **59**(9), 1385-1391.

In leprosy, a disease in which intraneural damage is characteristic, transposition of the ulnar nerve (external decompression) is of limited value in treatment. However, a small proportion of those wih signs of ulnar nerve involvement may benefit from this operation; in this paper, based on a study of 192 adult patients suffering from lepromatous leprosy, the authors show that this small group can be selected on the basis of the following criteria: (1) a small interval between the olecranon and the medial epicondyle of the humerus (25 mm or less with the elbow extended), and (2) when this interval increases by more than 50% with the elbow fully flexed. Anatomical abnormalities of the arcuate ligament were investigated but were exonerated as causes of entrapment neuropathy.

W. H. Jopling

10. **Characterization of the cellular immune defect in lepromatous leprosy: a specific lack of circulating *Mycobacterium-leprae*-reactive lymphocytes**, by T. GODAL, B. MYKLESTAD, D. R. SAMUEL and B. MYRVANG. *Clin. Exp. Immunol.*, 1971, **9**, 821-831.

"The blastogenic response of leucocyte cultures from patients with tuberculoid and lepromatous leprosy has been studied. The leucocytes from the two groups were studied simultaneously and cultivated in the same pool of normal human serum. While the leucocytes from 28 tuberculoid patients responded quite strongly to *Mycobacterium leprae* after 7 days of culture (average lymphocyte transformation 11.1%), there was a complete lack of response in similar cultures from 27 lepromatous patients (average 0.1% transformed cells). These results were confirmed by studies on cellular incorporation of ^{3}H-thymidine in the cultures from four tuberculoid and four lepromatous patients."

"This lack of response was quite specific as leucocytes from several lepromatous patients responded to BCG. Furthermore, 4 patients with both lepromatous leprosy and tuberculosis responded as strongly to BCG and PPD as tuberculous patients without leprosy. In the mixed leucocyte reaction, between two lepromatous or two tuberculoid patients respectively, the lepromatous cells responded well (average 15%) and comparably to tuberculoid cells (average 12.1%)."

"The blastogenic response of purified lymphocytes to *M. leprae* revealed a similar pattern, i.e. the tuberculoid cells responded well, while again there was a lack of response in the lepromatous group."

"It is concluded that the lepromatous patients lack circulating lymphocytes responding to *M. leprae*, indicating that their immunological defect as observed in the present study has features in common with immunological tolerance."

Authors' summary

11. **Primeiros resultados do tratamento da lepra com a kanamicina. (First results of the treatment of leprosy with kanamycin)**, by D. V. A. OPROMOLLA and S. C. ALMEIDA. *Revta Bras. Leprol.*, 1970, **37**, 17-39.

10 patients with lepromatous leprosy were treated with kanamycin in a daily dose of 1 g for 90 days. In 6 patients there was transitory albuminuria and in 8 patients auditory involvement as indicated by audiometry. Only one patient showed gross symptoms such as giddiness, deafness and tinnitus and he was obliged to discontinue treatment. In the other patients the auditory damage occurred in the higher frequency above the level of social conversation and it was not perceptible to the patients themselves. The clinical results of treatment were similar to those seen with other antibiotics such as rifamycin and oxytetracycline, being clearly evident in the first 30 days especially in patients whose condition was deteriorating. In the cases studied bacteriologically there were morphological changes in the bacilli and 3 patients became bacteriologically negative. Kanamycin is endowed with bactericidal activity for leprosy bacilli, which is particularly evident in the elongated bacilli characteristic of patients who are deteriorating. Kanamycin is a drug with high toxicity for the auditory part of the ear, so that its administration requires careful clinical vigilance, and whenever possible, audiometric control. It is not suitable for mass campaigns, but its restrained use is recommended for patients who have not responded to classical treatments or who are clinically deteriorating. The period of treatment should not exceed 30 days. Further investigation is desirable in order to establish the optimal therapeutic doses and to diminish toxicity.

F. Hawking

12. **BCG oral e reacão leprominica (Oral BCG and the lepromin reaction)**, by J. ROSEMBERG and M. C. ROCHA PASSOS, Jr. *Revta Bras. Leprol.*, 1970, **37**, 51-60.

This is a review of previous work by Rosemberg and by other workers. For the details the original must be consulted.

The authors conclude that BCG vaccination exerts an indisputable effect upon the lepromin reaction, achieving in certain circumstances a conversion in 100% of cases. There is no difference whether the vaccination is administered orally or parenterally. Ingestion of BCG orally (a) transforms lepromin-negative persons into Mitsuda-positive ones; (b) produces positive lepromin reactions in persons who were negative when tested years earlier; and (c) can intensify lepromin reactions which are already positive. Oral vaccination with BCG shows clearly that positive Mitsuda reactions are produced independently of allergy; the reactions occur in the same form whether tuberculin allergy is previously present or absent. There is dissociation between allergy to tuberculin and the reaction to lepromin, the two phenomena being independent of one another. Immunity to leprosy (as measured by the Mitsuda reaction) can be created without the occurrence of sensitization to tuberculin. All the observations under review strongly suggest that BCG, whether given orally or parenterally, exercises a specific protection against leprosy.

F. Hawking