## REPLY: POSITIVE MITSUDA LEPROMIN REACTION IN LONG-TERM TREATED LEPROMATOUS LEPROSY AND TUBERCULOID RELAPSE IN LEPROMATOUS LEPROSY

Sir,

We are very grateful for the interest shown by Dr Walter, whose work with the World Health Organization, and in particular whose studies on the post-lepromin scar (PLS), from the WHO BCG Immunoprophylaxis Study in the Singu area of central Myanmar (Burma), is well known.

In our studies on tuberculoid relapse in lepromatous leprosy,[1] the original London biopsies of patients 3–6 were all reviewed and all were classified as subpolar lepromatous (LLs). Pretreatment biopsies were not available for patients 1 and 2, but their clinical histories (patient 1 was becoming blind from lepromatous infiltrate in the anterior part of the eye, and patient 2 had developed lepromatous laryngitis, before they commenced treatment with dapsone), clinical findings and smear results all confirmed the diagnosis of LLs. In our study of positive Mitsuda lepromin reactions in long-term treated lepromatous leprosy,[2] the original London biopsies of all patients in group 1 were reviewed and were classified as LLs. In some cases, Mitsuda results from 22 or more years ago were available and all had been negative. Clinical findings and past smear records also confirmed that all patients in group 1 had suffered from lepromatous disease.

In our studies, we used standard lepromin containing $4 \times 10^7$ leprosy bacilli/ml, prepared from human lepromas, and kindly supplied by Dr M J Colston. No special attempt was made to look for the PLS; however, the majority were retested at 6 months and at 1 year, when the forearm was carefully inspected, and no postlepromin scar was seen. But it must be remembered that a number of the Mitsuda reactions were biopsied. On biopsy, an epithelioid granuloma was found, confirming the positive Mitsuda status of the patients. Incidentally, in Dr Walter's original paper,[3] a 3-mm Mitsuda reaction was graded 1+ positive, not 'doubtful', as in his letter. Our finding of epithelioid granulomata confirms that these 3-mm tests were indeed positive. We agree that the development of a 3–4 mm positive Mitsuda reaction does not necessarily imply subsequent lifelong immunity, but it would suggest that on relapse, should it ever occur after 2 years of multidrug therapy which almost all group 1 patients had received, the initial relapse would be borderline–tuberculoid in character.

We have observed a small number of PLS in patients who have had strongly positive (3+) Mitsuda reaction, but do not recall having seen a PLS after a weak positive (1+) Mitsuda response. It is difficult to picture the mechanism of scar formation in the latter type of response, although Dr Walter (who was using lepromin containing $1{\cdot}6 \times 10^8$ leprosy bacilli per ml) has reported that it can occur infrequently after 3–5 mm (1+) and 6–9 mm (2+) reactions without necrosis or ulceration.[3] Perhaps Dr Walter might like to suggest a hypothesis, other than that such patients might have scratched their Mitsuda papules after the readings of their reactions had been performed.

We would like to add a postscript to our original report on these patients. Further review of the

voluminous old notes of the patient in Group 1 who was known to have taken treatment irregularly for many years, confirms that he did in fact relapse in 1968. Therefore only 3 patients with completely negative Mitsuda reactions in this group had no history of relapse, and Table 1[2] should be appropriately amended.

We would also like to record that patient 5 in our study of tuberculoid relapse in lepromatous leprosy[1] developed a second tuberculoid relapse, or rather a late reversal reaction, at the end of December. His dry erythematous plaques were exactly similar, clinically and histologically, to those which developed in June 1984, although some of the sites were different. It must be noted that he was still receiving rifampicin monthly. His lepromin test had remained negative both in 1984 and in 1989; when retested in January 1991, he developed a 2-mm tiny nodule at the site of the lepromin injection, which on biopsy, revealed a focus of loose granulomatous inflammation indicating a weakly positive response.

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## References

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[2] Waters MFW, Ridley DS, Lucas SB. Positive Mitsuda lepromin reactions in long-term treated lepromatous leprosy. *Lepr Rev*, 1990; **61:** 347–52.
[3] Walter J, Tamandong CT, Gallego-Garbajosa P, *et al.* Note on some observations about the post-lepromin scar. *Lepr Rev*, 1977; **48:** 169–74.