Serum Levels of Acid and Alkaline Phosphatase In Leprosy Patients in Pakistan

Pages with reference to book, From 352 To 352

Dear Editors,

A recent survey of Leprosy control programme in Pakistan (Pfau, R., JPMA, June, 1984) suggested that Leprosy is an indigenous as well as a migration problem in Pakistan. Clinically, Leprosy is a mycobacterial infection, the biochemical basis of which is not well understood. The disease may range from the most resistant, localized tuberculoid form to the least resistant, generalized form. It is known that mycobacterium leprae are intracellular organisms that proliferate within the host macrophages. Macrophages contain a large number of enzymes and some of these such as phosphatases are of importance in the digestion of phagocytosed material. It is possible, therefore, that M. leprae proliferates within the macrophages by secreting factors that inhibit enzyme activities of macrophages involved in the digestion process. Therefore as a .part of study to investigate these changes, we determined acid (ACP) and alkaline (ALP) phosphatase activities in the sera of leprosy patients. Serum ACP and ALP levels were measured at 37°C in 10 cases each of untreated leprosy, treated leprosy patients (with dapsone and/or lamprene) and compared to those found in sera of 10 normal healthy adults. Patients with signs of liver damage were not included in this study. The results obtained are presented in the following table.

Table

Subjects	No.of Subjects	Acid phosphatase Range in Units/L	Alkaline phosphatase Range in Units/L
Normal (control)	10	2 – 15	22–60
Leprosy (untreated)	10	5 – 12	27–352
Leprosy (treated)	10	5 – 14	33–143

In the 10 eases studied, it was found that the serum levels of ACP did not show any change in leprosy, whereas ALP levels in both the untreated and treated groups of leprosy were higher than the normal range. Since the treated group was receiving dapsone and/or lamprene, we tested the effects of these two drugs on normal serum ALP. Neither dapsone nor lamprene upto a concentration of 1mM had any effect on serum ALP. Thus the high activity of ALP in treated group was not drug induced. Although a

definite correlation could not be established between ALP levels and the type of leprosy, the highest value of 352 was obtained in an untreated case of lepromatous leprosy. Since none of the cases included in the present study exhibited any signs of liver damage, these fmdings need to be evaluated further in a larger study to give ALP a predictor, prognostic value in the diagnosis of leprosy itself and also in establishing the type of disease.

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