

## PENTOXIFYLLINE IN REACTIONS IN LEPROSY

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A study was conducted to assess the response of reactions in leprosy to pentoxifylline therapy. Ten cases were studied; 8 cases had type 2 reaction and 2 cases had type 1 reaction. Pentoxifylline was given orally 400 mg three times daily. In patients with type 2 reaction, good response was observed within one week. There was near complete regression of ENL lesions within one month. Cases with type 1 reaction did not respond to pentoxifylline.

**Key Words:** Leprosy, Type 2 reaction, Pentoxifylline

### Introduction

The complex immunological phenomena in leprosy determines the type of the disease and the type of reaction. Steroids and thalidomide are used for reactions; steroid for type 1, steroid and thalidomide for type 2. The results are good but side effects are many. For this reason, WHO recommended search for acceptable alternatives to these drugs.<sup>1</sup> Immunomodulating drugs like zinc, levamisole have been tried, still the search is on for a better drug.

Pentoxifyllin (oxyntoxifylline) is a methylxanthine derivative with potent haemorrhagic properties used for intermittent claudication. Soon it was discovered that pentoxifylline and its metabolites have immunomodulating effects. These agents suppress monocyte production of tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ) and inhibit leukocyte stimulation by TNF- $\alpha$  and interleukin 1 (IL-1).<sup>2,3</sup> Sarno et al are of the view that elevated concentration of TNF- $\alpha$  and IL-1 may be implicated in reactional states in leprosy.<sup>4</sup> Pentoxifylline may be useful in treating reactional states through inhibition of the production and cellular responses to TNF- $\alpha$  and IL-1.

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### Materials and Methods

Ten leprosy patients with reaction (7 male and 3 female) were taken for study during the period from 9/95 to 2/96. Among them 8 patients were having type 2 and 2 cases were having type 1 reaction. Two male patients with type 2 reaction were admitted to ward. Others were treated as OPD patients as they refused admission. Diagnosis was based on clinical and bacteriological examinations.

Selection of cases was done on the following criteria : 1. Cases previously treated with steroid, but reactions recurring after tapering or omission of steroid, 2. Cases where there was contraindication of steroid, and 3. Reaction cases not given steroid before and not in urgent need of steroid.

Pentoxifylline (PF) was administered orally 400 mg three times daily. Patients were examined weekly. All cases were on MDT (MB) before and it was continued.

### Results

Eight cases with type 2 reaction showed regression of ENL lesions and related symptoms of fever, malaise and joint pain. There was general improvement of all these 8 cases within one week and all cases showed near complete regression of ENL lesions within a month. Two patients with type 1 reaction showed no improvement and were shifted to steroid therapy. The side effects of

PF noted were mild gastritis in two cases and slight dizziness in one case due to mild hypotension. None of these cases needed stoppage of the drug as the gastritis was effectively controlled by antacids and dizziness passed off as the patient used the drug for a few days.

## Discussion

Use of PF has now expanded in different conditions with production of cytokines which are the mediators of inflammation. Cytokines are stimulated by many factors among which immune complex is one. Type 2 reaction in leprosy is an immune complex phenomenon. The elevated levels of TNF- $\alpha$  and IL-1 probably act synergistically in producing acute inflammation in type 2 reaction. Talahari et al<sup>5</sup> reported encouraging results with PF in 5 cases of type 2 reaction and 1 case of type 1 reaction. They got no response in two cases of type 1 reaction. The present study is comparable to that of Talahari et al. We got good results in ENL cases, but no response in type 1 reaction.

In conclusion it can be said that the present study, though small, demonstrated

interesting results of pentoxifylline in type 2 reaction in leprosy. Our followup is limited from sept 95 to February 96. It is too early to recommend pentoxifylline as a standard therapy for management of type 2 reaction of leprosy. It is hoped bigger multicentric studies will enlighten us better.

## References

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