EFFECT OF PROTHIONAMIDE IN LEPROSY CLINICO - BACTERIOLOGICAL OBSERVATIONS

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Summary

Mouse footpad studies indicate the strong bactericidal property of prothionamide against *M. leprae* supported with limited clinical experience. Based on the recommendation made by the Expert Committee on Experimental Chemotherapy, Mexico as well as by Ellard, 6 LL and 2 BL cases were administered prothionamide alone 500 mg. and 250–375 mg. daily for a period of 3–6 months.

Maximum fall of MI upto 99% was observed by the end of second month correlated with marked clinical improvement.

Introduction

The mouse foot pad studies[1] indicate strong bactericidal property of prothionamide (PTH) against *M. leprae* to the extent of 98 to 99%. Available limited literature shows its effect on leprosy patients[2,3]. Controlled clinical trial or evaluation of the anti leprosy activity of this drug in patients with 375 to 500 mgs. dose daily has been recommended by the Expert Committee on Experimental Chemotherapy at the XI International Leprosy Congress, Mexico[4] as well as by Ellard[5].

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In the light of the above recommendations a small study was designed to find out the effect of prothionamide in multibacillary leprosy cases (LL and BL) by means of clinical and bacteriological parameters.

Material and Methods

Keeping in mind the limitations and danger of administration of single drug in multibacillary cases, the study was limited to 8 cases, of which 6 were LL and 2 were BL types. No histopathological classification was done. All the cases were previously treated with DDS for various periods and presented mostly with relapse except in one instance. Skin smears from standard sites for BI and MI were done at various intervals. Other investigations like liver function tests were done at different intervals to study any toxic effect on liver.

The patients were divided into two groups and tablet prothionamide was administered as the single antileprosy

drug for a period of 3-6 months under supervision in the hospital.

Group-I consisted of 6 cases which were administered prothionamide 500 mg. daily in 2 divided doses.

Group-II constituted 2 cases, one adult who was administered prothionamide 375 mg. daily in 2 divided doses and one child who was administered prothionamide 250 mg. daily as a single dose.

TABLE 1

Group I : Prothionamide (PTH) 500 mg. / day

Case No.	I	II	III	IV	V	VI
* Types of cases	LL	LL	LL	LL	LL	LL
Initial BI + MI%	5	2.5	3.4	5	4.3	3.5
	25	4.7	0.4	3	1.5	1.0
MI changes end of						
1st month	8.3	1.0	N.D	4.2 (40%)	0.75	0.66
	(67%)	(78%)		18 days	(50%)	(34%)
End of 2nd Month	0.9	0	0	N.D	N.D	N.D
	(96.4%)	(99.9%)	(99.9%)	0	0	0
				(99.9%)	(99.9%)	(99.9%)
				40 days	105 days	135 days
Early Clinical Changes						
(days)	36	32	60	53	27	11

* Clinical classification and all were adult patients.
ND :— Not done.

Observations and Discussion

Table 1 represents the 6 cases in Group I which received prothionamide (PTH) 500 mg. per day. All patients were clinically classified as LL.

Table 2 represents the 2 cases in Group II which received PTH of 250 mg. and 375 mg. per day. The patient who received 250 mg. daily was a child.

Maximum bactericidal property could be demonstrated only at the end of second month in patients receiving 375 to 500 mg. of PTH daily when M.I. reduced by 96 to 99%. These changes correlated with marked clinical improvement. However, this was not observed in case No. VII where 250 mg. daily was used and where 77% improvement was noticed only on the 105th day of starting therapy.

Early clinical improvement was noticed by eleventh day in case No. VI where infiltration reduced appreciably.

TABLE 2

Prothionamide : 250-375mg/day

Case No.	VII † (250 mg)	VIII (375 mg)
* Types of cases	BL	BL
Initial		
BI +	3.7	5.2
MI %	2.2	2.3
MI Changes		
End of 1st month	1.8	1.9
	(16%)	(17%)
End of 2nd month	N.D.	0
	0.5	(99.9%)
	(77%)	
	105 days	
Early Clinical Changes (days)	30	50

* Clinical classification
† Childhood case
N. D. : Not done

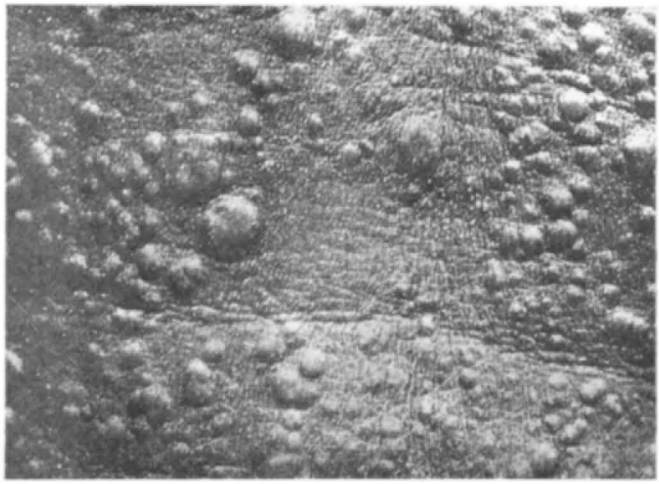

Fig. 1 Before Treatment

Figures 1 & 2 show the marked regression of nodules and infiltration in case No. V, after the administration of PTH. Similar changes were also observed in other cases as also reduction in the shinyness of nodules. Bragina[3] in his small series of study administered PTH alone to 4 cases and observed regression of clinical signs after one to two months. Six months later regression in skin infiltrates and nodules was marked.

No perceptible change was observed in BI status.

All cases in this study tolerated the drug well. No reaction was observed during the period of study.

Liver function tests were normal throughout the study period.

This short term study in a small series of patients confirmed the bactericidal property of PTH in humans which has earlier been demonstrated in mice.

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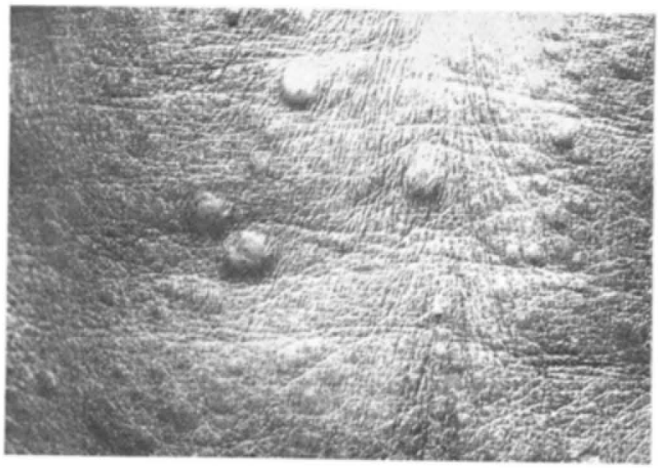

Fig. 2 4 Months After Treatment

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