

TREATMENT OF PSORIASIS: COMPARISON OF 8-METHOXYPSORALEN AND 4, 5, 8-TRIMETHYLPSORALEN USING SUNLIGHT (Low dosage daily regime)

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Summary

A comparative study of the effectiveness of 8-methoxypsoralen and 4, 5, 8-trimethylpsoralen in the treatment of psoriasis revealed that when taken orally in 20 and 10 mg. doses respectively, and 2 hrs. later lesions exposed to natural sunlight, remission was achieved within 8-weeks. Progressive improvement among patients was variable. Effectiveness of both the drugs was comparable, and the difference was insignificant. Drug 4, 5, 8-trimethylpsoralen achieved equal remission at half the dosage, and for this reason its use is advocated. Failure of the drugs in 2 patients and recurrence in 1, points out the limitations of this method of treatment.

In recent years, photochemotherapy of psoriasis has drawn considerable attention. In the past, psoriasis vulgaris patients were treated by giving orally 40 mg. methoxypsoralen^{1,2,3,4} or 20 mg 4, 5, 8-trimethylpsoralen^{5,6} and after an interval of 2 hrs. these patients were exposed to artificial UV light or natural sunlight. Successful remission was achieved with both the drugs. In view of the fact that maximum drug concentration is reached within 2 hrs and the drug remains in the body upto 12 hours, 2 days interval was considered unnecessary, and it was considered desirable to administer

half the dosage daily of the drugs to achieve fast remission. Furthermore, administration and monitoring of UV light is expensive and time consuming and requires the attendance of an expert. A study was, therefore, designed, (i) to compare the relative effectiveness of methoxypsoralen vs 4, 5, 8-trimethylpsoralen, (ii) to see whether daily administration of drug at half the dosage provides faster remission, and (iii) to test the effectiveness of natural sunlight in this drug schedule. Results of this study are reported in this paper.

Materials and Methods

The study was undertaken on two groups of 17 (Group 1) and 23 (Group 2) psoriasis vulgaris patients respectively. There were 26 males and 14 females. Their ages ranged from 14 to 55 years. The duration of the disease was variable. Group 1 and 2 were administered a daily oral dose of 20 mg. 8-methoxypsoralen or 10 mg. 4, 5, 8-trimethylpsoralen respectively. Controls

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consisted of 20 patients who were exposed to sunlight without administration of any drug. All patients of group 1 and 2 were advised to take the drug after breakfast and 2 hours later expose their lesions to sunlight. Sunlight exposure varied from 10-30 minutes between 11.00 a.m. and 3.00 p.m. The controls had the same duration of exposure as the other groups. The treatment and observation period varied from 2-8 weeks. Qualitative evaluation of the therapeutic response to the drugs was done by weekly observations on decrease in scaling, flattening of the lesions, regression of erythema and any evidence of new lesions. The results were recorded in the following way: (0) No improvement; (1+) 25 percent; (2+) 50 percent; (3+) 75 percent, and (4+) 100 percent improvement.

Total and differential leukocyte count, blood sedimentation rate, urine and stool examination were done before, during and after the completion of treatment. In addition liver function tests were also done.

Observations

Results of this study (Table 1) revealed that intake of 8-methoxypsoralen produced varying degrees of improvement viz. 25 percent improvement was observed in 1 patient in 2

weeks and 4 patients in 4 weeks; 50 percent improvement was observed in 1 patient in 2 weeks, 2 patients in 4 weeks and 1 patient each in 6 and 8 weeks; 75 percent improvement was observed in 5 patients in 8 weeks; and 100 percent improvement was observed in 1 patient each in 6 and 8 weeks.

Similarly, intake of 4, 5, 8 - trimethylpsoralen also produced varying degrees of improvement viz. 25 percent improvement was observed in 5 patients in 2 weeks and 3 patients in 4 weeks; 50 percent improvement was observed in 1 patient each in 4, 6 and 8 weeks, 75 percent improvement was observed in 1 patient each in 6 and 8 weeks; and 100 percent improvement was observed in 1 patient in 2 weeks, 2 patients in 4 weeks and 5 patients in 8 weeks. Two patients did not respond to treatment over 8 weeks period and discontinued the treatment. In addition 1 patient relapsed after 8 weeks of therapy and discontinued the treatment. In this particular case the relapse was probably due to the disturbed mental state of the patient.

There was no significant difference between the effects of the two drugs ($x^2 = 1.79$). Controls in contrast had shown no appreciable improvement during the observation period.

TABLE I
Comparative evaluation of 8 - methoxypsoralen and 4, 5, 8 - trimethylpsoralen in the treatment of psoriasis

Improvement Index %	Number of patients showing improvement							
	8 - methoxypsoralen				4, 5, 8 - trimethylpsoralen			
	Weeks				Weeks			
	2	4	6	8	2	4	6	8
0	-	-	-	-	-	-	-	2
25	1	4	-	-	5	3	-	-
50	1	2	1	1	-	1	1	1
75	-	-	-	5	-	-	1	1
100	-	-	1	1	1	2	-	5

1 patient had relapse - after 100% improvement.

Discussion

The present study revealed that both the drugs are useful in the treatment of psoriasis but the speed of remission was variable. Reducing the dosage to half on daily basis followed by natural sunlight irradiation proved to be an effective method of treatment in comparison to the earlier reports^{3,5}.

Further, reduction in the dosage would minimise side effects if any and also reduce its cost. Since 10 mg. of 4, 5, 8-trimethylpsoralen has almost the same effect as 20 mg. of 8-methoxy-psoralen, the former may be preferred because of less drug intake on long term basis. The use of sunlight vis-a-vis ultraviolet irradiation needs a special emphasis for it is abundantly available in tropics and subtropics and has been proved safe and equally effective³. The limitations of this treatment are apparent because these drugs may fail in providing relief or remission to the patient and relapses may also occur.

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TRUE or FALSE

The affinity of the Langerhans' cells to metal is restricted to gold and is therefore specific for morphological identification of these cells in the tissue.

(See Page No. 20)