A CLINICO - HISTOPATHOLOGICAL OUTCOME OF 4 WEEKS METHOTREXATE PULSE THERAPY IN PSORIASIS

BL Masuria, NK Bansal, M Sharma, MK Singhi, A Mittal, LK Gupta

A clinico - histopathological study was carried out in 50 patients of psoriasis to see clinical and histological outcome and/or correlation of weekly methotrexate pulse therapy. Clinically, results of therapy were evalutated by estimating the percentage of total body coverage with psoriasis. Prior to therapy, average involvement was 47.5% which after 4 weeks methotraxate therapy reduced to 8.3%. A complete clearing of psoriasis occurred in 40% of patients after methotraxate therapy. The clinical response started as early as I week in most of patients. Only 2 patients failed to respond even after 4 weeks of therapy. Histopathologically in pretreatment biopsy, 34 showed classical psoriatic pathology while in 16 biopsy was suggestive of psoriasis but not confirmative. Histopathological examination after 4 weeks treatment showed that 41 still showed one or more histological evidence of psoriasis, although only two patients had classical, psoriatic pathology, in rest 9 patients there were complete regression. Thus, with methotrexate, clinical clearance was much faster than histopathological clearance.

Key Words : Psoriasis, Methotrexate

Introduction

Psoriasis is a chronic, common, genetically determined, inflammatory and hyperproliferative disease of skin with an unpredictable clinical course marked by relapse and remissions. The histopathologic picture of psoriasis vulgaris varies considerably with the stage of lesions and usually diagnostic only in early scaly papules and near the margins of plaque.[1] Methotraxate is generally recognised as an effective drug in the management of psoriasis.[2] In this study, a pre and post treatment (4 weeks after) clinico-histopathological assessment was undertaken in an attempt to correlate clinical and histological outcome of 4 weeks methotrexate pulse therapy.

From the Department of Dermatology, Venereology & Leprosy, RNT Medical College, Udaipur

Address correspondence to :

Dr M.K. Singhi

Q.No. 3/2 MDM Hospital Campus, Shastri Nagar, Jodhpur (Rajasthan)

Materials and Methods

Fifty patients with psoriasis attending skin, op department of RNT Medical College, Udaipur were included in the study and hospitalised during period of therapy. All necessary investigations and precautions as guide lines laid down by sub committee on methotrexate of the psoriasis task force of national programme for Dermatology,[2] were carried out before instituting methotrexate therapy.Clinical assessment was made with minor modification in PASI scale. The extent of involvement was measured by rule of nine and severity index by EPSI (Erythema, Pruritus, scaling, Induration) scale. Clinical examination was done at weekly intervals for assessment of parameters already laid down. Pre and post treatment histology was done in all patients. For histopathological examination, a well developed single lesion was selected and biopsied before starting methotrexate and 4 weeks after methotrexate therapy. All patients were treated with methotrexate pulse therapy (15

mg/wk in three divided dosage at 12 hours apart). Vigil was kept on any side effect which was noted.

The percentage of the total body coverage with psoriasis as calculated by rule of nine, prior to therapy was 47.5%, whereas after 4 weeks methotrexate therapy it reduced to 8.3%. A complete clearance of psoriasis occurred in 20 (40%) patients. The response on ESPI scale was excellent in 32 (64%), very good in 9 (18%), good in 6 (12%), fair in 1 (2%) and poor in 2 (45) patients. A weekly clinical assessment is given in Table-1.

Table I. Anti psoriatic effects of methotrexate (ESPI) Scale

Response	I week	II week	III week	IV week
Poor (0-20%)	16 (32%)	6 (12%)	2 (4%)	2(4%)
Fair (21-40%)	27 (54%)	9 (18%)	6(12%)	2 (4%)
Good (41-60%)	6 (12%)	21 (42%)	6 (12%)	5 (10%)
Very good (61-80%)	0 (0%)	12 (24%)	22 (44%)	9 (18%)
Excellent (81-100%)	1(2%)	2(4%)	14(28%)	32 (64%)

Table II. Pre and Post treatment histology of psoriatic lesion

Changes	pretreatment		Post treatment	
	No. of Pts.	%	No. of Pts	%
Parakeratosis	50	100	19	38
(i) Uniform	28	56	8	16
(ii) Patchy	15	30	11	22
(iii) Alternate	7	14	-	-
Granular layer +ve	33	66	48	96
(i) Uniform	9	18	35	70
(ii) Patchy	24	48	13	26
Elongation of rete ridges	40	80	1	32
Thinning of supra papillary epidermis	17	34	4	8
Munro's abscesses	34	68	5	10
Dermal vessels dilatation	48	96	36	72
Dermal infiltrate	50	100	40	80

Discussion

Methotrexate is a time tested, well proven drug for severe form of psoriasis. Antipsoriatic action of methotrexate lies in its competitive inhibition of enzyme dihydrofolate reductase,[3] and inhibition of polymorphonuclear leucocyte (PMBL) chemotaxis.[4] Our experience with this drug in dose of 15 m/gweek shows complete clearance of psoriasis in 40% of patients in 4 weeks time; and more than 60% clearance in 82% of patients. High rate of clearance have been reported with combination therapy.[5] A number (9) of patients in this study were slow responders. Slow response to methotrexate could be due to low proliferative rate of epidermis in this variety of psoriasis. Similar observation was reported by Talwar.[6]

Histopathological remission was seen in 18% of patients as compared to clinical remission in 40% of patients. In psoriasis clinical regression precedes histopathological regression a fact which is fairly well established.

The slow recovery of the vascular changes found in our study is also in accordance with the findings of Talwar et al.[7] This may account for the early relapse, if such lesions are not treated long enough. Capillary dilatation may be the starting point for development of psoriatic lesion.

References

1. Lever WF, Lever GS. Histopathology of Skin, 7th edn. Philadelphia. JB Lippincott Company 1990: 156-164.

2. Roenigk R, Auerbach R,Maiback H, et al. Methotrexate in psoriasis : revised guidelines. J Am Acad Dermatol 1988; 19: 145-150.

3. Tayor JR. Halprin KM. Levine V, et al. Effects of methotrexate in vitro on epidermal cell proliferation. Br J Dermatol 1983; 108: 45-61.

4. Walsdoefer U, Christophers E, Schroder JM. Methotrexate inhibits Polymorphonuclear leucocyte chemotaxis in psoriasis. Br J Dermatol 1983; 108: 451-4560.

5. Prasad PVS, Felix John. Topical coal tar alone and in combination with oral methotrexate in management of psoriasis: A retrospective analysis. Indian J Dermatol Venereol Leprol 1997; 63:26-28.

6. Talwar S. Methotrexate PUVASOL combination in treatment of psoriasis. Indian J Dermatol venereol Leprol 1992; 58: 15-19.

7. Talwar S, Tiwari VD, Lakhtakia R, et al. Sequential clinico-histological study in psoriasis following methotrexate therapy. Indian J Dermatol Venereol Leprol 1995; 61: 284-287.