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Assessment of efficacy of methotrexate and acitretin in the management of psoriasis

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Abstract

Background: Psoriasis is a chronic inflammatory skin disease characterized by a prominent T-cell infiltrate, epidermal hyper proliferation and abnormal keratinocyte differentiation. The present study was conducted to assess efficacy of methotrexate and acitretin in the management of psoriasis.

Materials & Methods: 72 patients diagnosed with palmoplantar psoriasis were divided into 2 groups of 36 each. Group I patients were prescribed oral methotrexate 15mg/week for 3 months and group II were given oral acitretin 0.5 mg/kg daily for 3 months. Modified psoriasis area severity index (MPASI) score was assessed.

Results: There were 16 males and 20 females in group I and 18 males and 18 females in group II. The mean MASI score at baseline, 1 month, 2 months and 3 months was 58.2, 38.4, 23.2 and 14.6 and 60.4, 40.2, 30.5 and 20.4 in group I and II respectively. The difference was significant ($P < 0.05$).

Conclusion: Oral methotrexate and acitretin were highly effective in treating palmoplantar psoriasis. Oral methotrexate reduces the lesions faster than acitretin.

Keywords: Acitretin, methotrexate, psoriasis

Introduction

Psoriasis is a common chronic, disfiguring, inflammatory skin condition, in which both genetic and environmental influences have a critical role, and clinically characterized by sharply demarcated, erythematous, silvery white, scaly, indurated plaques mainly distributed over extensor surfaces, lower back and scalp^[1].

Psoriasis is a chronic inflammatory skin disease characterized by a prominent T-cell infiltrate, epidermal hyper proliferation and abnormal keratinocyte differentiation (parakeratosis), infiltration of many different leukocytes and increased vascularity in the dermis^[2]. It is systemic immune-mediated disease accompanied by arthritis in a significant percentage of patients called psoriatic arthritis. Psoriasis has a substantial influence on health-related quality of life that is comparable to that of other serious medical conditions e.g. cancer, heart disease, diabetes and depression^[3].

Various types of psoriasis are described. Among them palmoplantar psoriasis affecting palms and soles is very resistant to treatment. This could be due to the greater thickness of the involved skin, which makes it difficult for the topical agents to penetrate, or koebnerization triggered by repeated trauma^[4].

Therapy for palmoplantar psoriasis usually consists of topical medications with or without occlusion, coal tar, PUVA therapy, systemic retinoids, and methotrexate or cyclosporine. Existing topical treatments are ineffective and show unpredictable response. So other systemic can be used for patients with disability or added to the regimen of those who have failed topical therapy. Acitretin is a vitamin A derivative and is approved for the treatment of palmoplantar psoriasis^[5]. The present study was conducted to assess efficacy of methotrexate and acitretin in the management of psoriasis.

Materials and Methods

The present study was conducted among 72 patients diagnosed with palmoplantar psoriasis of both genders. All enrolled patients were informed regarding the study and their consent was obtained. Data of each patient such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 36 each.

Group I patients were prescribed oral methotrexate 15mg/week for 3 months and group II were given oral acitretin 0.5 mg/kg daily for 3 months. Follow up was done monthly once by calculating modified psoriasis area severity index (MPASI) score. Improvement was graded as: no change, slight improvement, moderate, marked and almost cleared. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

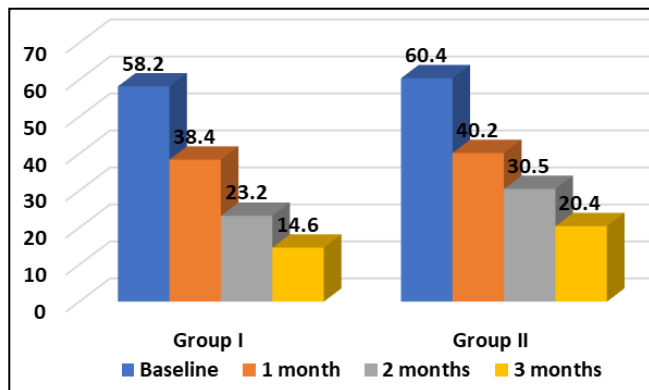
Groups	Group I	Group II
Drug	Oral methotrexate	Oral acitretin
M:F	16:20	18:18

Table I shows that there were 16 males and 20 females in group I and 18 males and 18 females in group II.

Table 2: Comparison of MASI score

Groups	Baseline	1 month	2 months	3 months	P value
Group I	58.2	38.4	23.2	14.6	0.04
Group II	60.4	40.2	30.5	20.4	0.05
P value	0.2	0.14	0.05	0.02	

Table II, graph I shows that mean MASI score at baseline, 1 month, 2 months and 3 months was 58.2, 38.4, 23.2 and 14.6 and 60.4, 40.2, 30.5 and 20.4 in group I and II respectively. The difference was significant ($P < 0.05$).



Graph 1: Comparison of MASI score

Discussion

Because of the recalcitrant nature, easy visibility and location on functionally exposed parts, the condition can lead to disability and significant psychological effects in many patients [6]. Many patients with palmoplantar psoriasis do not have psoriasis of other parts of their body. Diagnosis of psoriasis is usually clinical. Treatment of palmoplantar psoriasis is very demanding and challenging to the physician [7]. The physical quality of life index is severely impaired with this type and with successful treatment there is significant improvement in quality of life [8]. The present study was conducted to assess efficacy of methotrexate and acitretin in the management of psoriasis.

In present study we found that there were 16 males and 20 females in group I and 18 males and 18 females in group II. Charles B [9]. Reported a case series, where a study of 45 patients with mild to moderate palmoplantar psoriasis treated with oral acitretin for 3 months. Results showed that

mean PASI score reduced from 11 at baseline to 1.65 at the end of 3 months. 27 patients developed cheilitis and 10 patients showed elevation in triglyceride levels. Finally, they concluded that measurable improvement was seen in 100% of patients.

We found that mean MASI score at baseline, 1 month, 2 months and 3 months was 58.2, 38.4, 23.2 and 14.6 and 60.4, 40.2, 30.5 and 20.4 in group I and II respectively. Giovanni *et al.* [10]. 17 reported the efficacy of oral acitretin in 42 patients with hyperkeratotic palmoplantar dermatitis. After 1 month of treatment oral acitretin was significantly better in clearing the lesions ($P < 0.0001$). They advised oral acitretin as the first choice.

Parsam *et al.* [11]. In their study 50 patients with palmoplantar psoriasis were randomized into 2 groups. Patients in group I received oral methotrexate and patients in group II received acitretin for 3 months. Baseline grading was done with Modified Psoriasis Area Severity Index (MPASI) score. MPASI score was assessed monthly. Scores at the beginning and at the end of 3 months of treatment were compared. Quality of life was assessed using a questionnaire. Results: MPASI score in group I was 57.15 ± 17.17 at baseline and 14.50 ± 13.55 at the end of 3rd month. The difference in scores before and after treatment was statistically significant. MPASI score in group II was 57.76 ± 18.60 at baseline and 21.30 ± 8.168 at the end of 3rd month. Intragroup analysis showed statistically significant difference before and after treatment. There was significant improvement in the quality of life after treatment.

Karn *et al.* [12]. Compared the efficacy of methotrexate and cyclosporine in the treatment of Psoriasis. A total of 64 patients (33 receiving MTX and 31 receiving CsA) were enrolled. These patients were followed every week for first month and their PASI score and side effects were recorded at 0, 1st, 2nd and 3rd month interval. In the study, the mean (\pm S.E) PASI score at base line was 23.34 ± 1.12 for MTX and 21.25 ± 1.07 for CsA group. After 12 weeks of treatment the mean \pm S.E PASI score found to be 5.37 ± 0.42 for MTX and 4.56 ± 0.41 for CsA group. The difference in the response between the groups acquired statistically not significance meaning there is no difference in the effectiveness of MTX and CsA.

Conclusion

Both oral methotrexate and acitretin were highly effective in treating palmoplantar psoriasis. Oral methotrexate reduces the lesions faster than acitretin.

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