

## Original Article

### Acitretin versus methotrexate in the management of psoriasis patients

<sup>1</sup>Amit Kumar, <sup>2</sup>Chiranjeevi Bonda

<sup>1</sup>Assistant Professor, Dept of Pharmacology, Major SD Singh Medical College and Hospital, Farrukhabad, UP., India;

<sup>2</sup>Assistant Professor, Dept of Pharmacology, KM Medical College and Hospital, Sonkh Road, Mathura, U.P., India

#### ABSTRACT:

**Background:** Psoriasis is a multisystem inflammatory disease with predominantly skin and joint involvement. The present study was conducted to compare acitretin and methotrexate in the cases of psoriasis. **Materials & Methods:** 90 patients with palmoplantar psoriasis of both genders were divided into 2 groups. Each group comprised of 45 patients. Group I patients were given oral acitretin 0.5 mg/kg daily for 3 months and patients in group II were given oral methotrexate 15mg/week for 3 months. Modified psoriasis area severity index (MPASI) score was recorded. **Results:** Group I had 20 males and 25 females and group II had 22 males and 23 females. The mean MASI score was 60.4, 40.6, 32.4 and 20.8 in group I at baseline, 1 month, 2 months and 3 months respectively. The mean MASI score in group II was 56.8, 36.4, 23.6 and 14.4 at baseline, 1 month, 2 months and 3 months respectively. The difference was significant ( $P < 0.05$ ). **Conclusion:** Acitretin and oral methotrexate found to be efficient in treating palmoplantar psoriasis.

**Key words:** Acitretin, psoriasis, methotrexate

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**Corresponding author:** Chiranjeevi Bonda, Assistant Professor, Dept of Pharmacology, KM Medical College and Hospital, Sonkh Road, Mathura, U.P., India

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#### INTRODUCTION

Psoriasis is a chronic disease. Psoriasis is a multisystem inflammatory disease with predominantly skin and joint involvement. It has a bimodal age of onset and affects both sexes equally.<sup>1</sup> Pathogenesis is multifactorial, involving dysregulated inflammation and genetic associations. Beyond the physical dimensions of disease, psoriasis has an extensive emotional and psychosocial effect on patients; it can result in stigmatization, poor self-esteem, and increased stress, affecting social functioning and interpersonal relationships.<sup>2</sup>

There is increasing evidence that psoriasis is a disease of systemic inflammation with ramifications for multiple organ systems. Thus, patients with psoriasis should receive appropriate therapy for psoriasis and management of comorbid conditions to improve long-term outcomes. Various types of psoriasis are described.<sup>3</sup> 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.<sup>4</sup> 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. Acitretin is a vitamin A derivative and is approved for the treatment of palmoplantar psoriasis.<sup>5</sup> The present study was conducted to compare acitretin and methotrexate in the cases of psoriasis.

#### MATERIALS & METHODS

The present study was conducted among 90 patients with palmoplantar psoriasis of both genders were enrolled for the study and their written consent was obtained.

Patient data such as name, age, gender etc. was recorded. Patients were divided into 2 groups. Each group comprised of 45 patients. Group I patients were given oral acitretin 0.5 mg/kg daily for 3 months and patients in group II were given oral methotrexate 15mg/week for 3 months. Modified psoriasis area severity index (MPASI) score was

recorded 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.

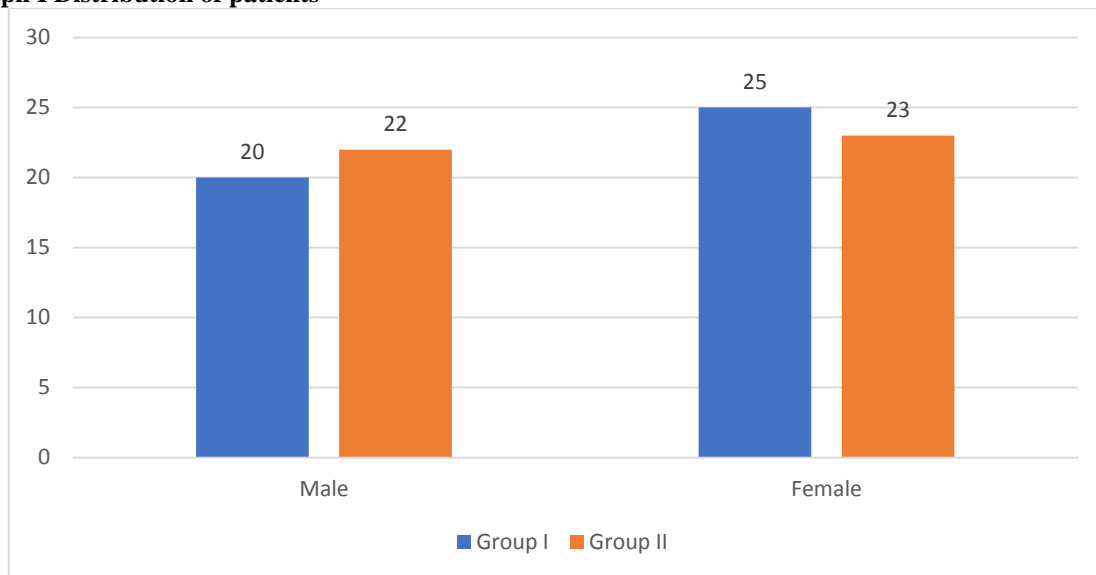
**RESULTS**

**Table I Distribution of patients**

Groups	Group I	Group II
Drug	Acitretin	Methotrexate
M:F	20:25	22:23

Table I, graph I shows group I had 20 males and 25 females and group II had 22 males and 23 females.

**Graph I Distribution of patients**

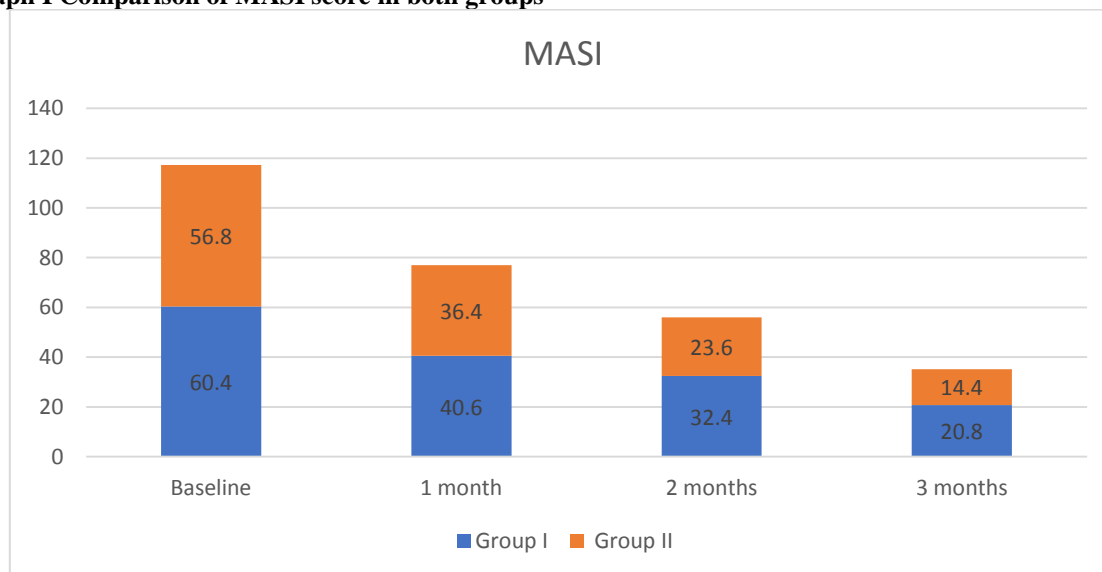


**Table II Comparison of MASI score in both groups**

Groups	Group I	Group II	P value
Baseline	60.4	56.8	0.02
1 month	40.6	36.4	0.09
2 months	32.4	23.6	0.05
3 months	20.8	14.4	0.01

Table II, graph II shows that mean MASI score was 60.4, 40.6, 32.4 and 20.8 in group I at baseline, 1 month, 2 months and 3 months respectively. The mean MASI score in group II was 56.8, 36.4, 23.6 and 14.4 at baseline, 1 month, 2 months and 3 months respectively. The difference was significant (P< 0.05).

**Graph I Comparison of MASI score in both groups**



## DISCUSSION

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.<sup>6</sup> 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.<sup>7</sup> Corticosteroids are considered the cornerstone of topical treatment, corticosteroids are often well tolerated and effective for patients with mild psoriasis. Overall, topical steroids in various formulations, strengths, and combinations are efficacious initial therapy for rapid control of symptoms.<sup>8</sup> For instance, salicylic acid, a keratolytic agent, can be combined with steroid therapy to help treat plaques with thicker scales, for better penetration of medication.<sup>9</sup> Although uncommon, long-term use is complicated by possible side effects of local skin changes, tachyphylaxis, and hypothalamic-pituitary adrenal axis suppression.<sup>10</sup> The present study was conducted to compare acitretin and methotrexate in the cases of psoriasis.

In present study group I had 20 males and 25 females and group II had 22 males and 23 females. Karn et al<sup>11</sup> 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  $23.34 \pm 1.12$  for MTX and  $21.25 \pm 1.07$  for CsA group. After 12 weeks of treatment the mean  $\pm$  S.E PASI score found to be  $5.37 \pm 0.42$  for MTX and  $4.56 \pm 0.41$  for CsA group. The difference in the response between the groups acquired statistically not significance ( $p=0.160 > 0.05$ ) meaning there is no difference in the effectiveness of MTX and CsA.

We found that mean MASI score was 60.4, 40.6, 32.4 and 20.8 in group I at baseline, 1 month, 2 months and 3 months respectively. The mean MASI score in group II was 56.8, 36.4, 23.6 and 14.4 at baseline, 1 month, 2 months and 3 months respectively. Baros et al<sup>12</sup> assessed 60 adult patients, of both sexes, with different clinical forms of psoriasis, who were divided into three groups according to the applied therapeutic modalities: the first group (treated with standard therapeutic modalities), the second group (treated with balneotherapy) and the third group (treated with combined therapy-standard methods therapy and balneotherapy). The Psoriasis Area and Severity Index was determined in first, third and sixth week of treatment for all patients. The average length of

remission in patients treated with standard therapeutic modalities and in those treated with balneotherapy was  $1.77 \pm 0.951$  months and  $1.79 \pm 0.918$  months, respectively. There was a statistically significant difference in the duration of remission between the patients treated with combination therapy and patients treated with standard therapeutic modalities ( $p = 0.019$ ) and balneotherapy ( $p = 0.032$ ).

## CONCLUSION

Authors found that acitretin and oral methotrexate found to be efficient in treating palmoplantar psoriasis.

## REFERENCES

1. Brunasso AM, Puntoni M, Aberer W, Delfino C, Fancelli L, Massone C. Clinical and epidemiological comparison of patients affected by palmoplantar plaque psoriasis and palmoplantar pustulosis: a case-series study. *Br J Dermatol*. 2013;168:1243-51.
2. Petty AA, Balkrishnan R, Rapp SR, Fleischer AB, Feldman SR. Patients with palmoplantar psoriasis have more physical disability and discomfort than patients with other forms of psoriasis: implications for clinical practice. *J Am Acad Dermatol*. 2003;49:271-5.
3. Farley E, Masrouf S, McKey J, Menter A. Palmoplantar psoriasis: a phenotypical and clinical review with introduction of a new quality-of-life assessment tool. *J Am Acad Dermatol*. 2009;60:1024-31.
4. Camp RDR. PUVA therapy. In: Camp RDR, eds. *Textbook of Dermatology*. 1st ed. Oxford: Blackwell Publishing; 1992.
5. Weinberg JM. Successful treatment of recalcitrant Palmoplantar psoriasis with etanercept. *Cutis*. 2003 Nov;72(5):396-8.
6. Mehta BH, Amladi S. Evaluation of topical 0.1% tazarotene cream in the treatment of palmoplantar psoriasis: an observer blinded randomized controlled study. *Indian J Dermatol*. 2011 JanFeb;56(1):40-3.
7. Nikam BP, Amladi S, Wadhwa SL. Acitretin. *Indian J Derm Venereol Leprol*. 2006;72:167-72.
8. Pilkington T, Brogden RN. Acitretin: a review of its pharmacology and therapeutic use. *Drugs*. 1992;43:597-627.
9. Parsam SB, Ireddy S. Comparative study of oral methotrexate and acitretin in the treatment of palmoplantar psoriasis. *Int J Res Med Sci* 2015;3:47-52.
10. Giovani E, Tekin O, Gulekon A, Gurer M. A retrospective analysis of treatment responses of palmoplantar psoriasis in 114 patients. *J Eur Acad Dermatol Venereol*. 2009;23(7):814-9.
11. Karn D, Amatya A, Khatri R. Comparative study of Methotrexate and Cyclosporine in the treatment of Psoriasis. *NJDVL* 2010; 15-21.
12. Ninković-Baroš Đ, Gajanin VS, Gajanin RB, Zmić B. Comparative analysis of success of psoriasis treatment with standard therapeutic modalities and balneotherapy. *Medicinski preglad*. 2014;67(5-6):154-60.