

**STUDY OF EFFECT OF METHOTREXATE ON PSORIASIS IN COMPARISON WITH AZATHIOPRINE**J. Vijayashree<sup>1</sup>, J. Srinivas Kumar<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT:** It is a chronic inflammatory skin disorder clinically characterized by erythematous sharply demarcated papules and rounded plaques covered by silvery micaceous scales psoriatic lesion demonstrate infiltrates of activated T-cells that are thought to elaborate cytokine responsible for keratinocyte hyper proliferation.<sup>(1)</sup> Present study is a prospective study, conducted in tertiary care teaching hospital in coastal Andhra Pradesh prior permission from ethical committee was obtained.). In our study on 80 patients it was found that methotrexate was oral effective than Azathioprine in treatment of psoriasis.

**KEYWORDS:** Psoriasis, Methotrexate, Azathioprine.

**INTRODUCTION:** Robert Willan, is credited with the first accurate clinical description of psoriasis, in 1808.<sup>(2)</sup> Before that time, this common cutaneous illness was confused with leprosy, syphilis, tuberculosis or other skin diseases. Psoriasis is a chronic immune-inflammatory-mediated disease affecting approximately 1-3% of the population worldwide.<sup>(3,4)</sup>

It is a chronic inflammatory skin disorder clinically characterized by erythematous sharply demarcated papules and rounded plaques covered by silvery micaceous scales psoriatic lesion demonstrate infiltrates of activated T-cells that are thought to elaborate cytokine responsible for keratinocyte hyper proliferation.<sup>(1)</sup> Agents inhibiting T cell activation, clonal expansion or release of pro-inflammatory cytokines are effective for treatment of serves psoriasis.

Most patients with localized, plaque type psoriasis are managed with topical agent but for severe wide spread psoriatic disease various systemic agents are used like, methotrexate, cyclosporine, and azathioprine etc. Present study has been conducted to study the efficacy and safety of methotrexate and azathioprine in 80 patients.

**MATERIAL AND METHOD:** It is a prospective study, conducted in tertiary care teaching hospital in coastal Andhra Pradesh prior permission from ethical committee was obtained.

80 patients between age group 18 to 60 yrs. were enrolled for the study, of both the sex, study was conducted between November 2012 to April 2015, with following inclusion and exclusion criteria.

**Exclusion Criteria:**

- Liver and kidney diseases.
- Pregnancy and lactation.
- Pt, on steroid or immune modulators.
- TLC less then 3000/dl.

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- Diabetes and hypertensive.
- Alcoholics.

Detailed history of pt, including drug, life style, family, were taken. Various test like complete haemogram, hepatic and renal function test, blood sugar and Blood pressure were obtained.

Patient were randomised and were divided into two Group A were given methotrexate 10mg weekly on every Monday for 8weeks and Group B were given Azathioprine 2mg/k8/day for 8weeks on every Monday. Group A consists of 48 patients and Group B consists of 42 patients.

Severity of psoriasis was assessed by measurement scores according to PASI scale, which is considered gold standard created by Frederickson and Peterson in 1978 to evaluate the clinical efficacy of psoriasis <sup>(5)</sup>

All the above mentioned parameter were repeated every week up to 12 week PASI score were also scored 0, 1, 2, 3, 4, 6, 8, and 12week.

	No.	Male	Female
Group A	48	32	16
Group B	42	28	14

**Table 1**

Age	No.
20-30	12
30-40	38
40-50	30
50-60	10

**Table 2**

Interpretation of result was done as follows:

- 75% → very good response.
- 74to65% → good response.
- 64to55% → fair response.
- 55to 45% → poor response.
- 44% → very poor response.

**RESULT:** In group A there were 48 patients out of that 32 were male and 16 female. In group B there were 42 patients out of that 28 male and 14 female, between age group -20 to 60yrs of age.

PASI score was calculated at the time of start of study and was as follows;  
PASI score at the start of study.

PASI score	Group a methotrexate	Group B Azathioprine
1-15	12	10
15-30	28	18

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30-45	7	3
>45	1	1

Table 3

### Response after 4 week Response to treatment after 8 week

Response	Group A Methotrexate	Group B Azathioprine
81to100%	4(8.3%)	1(2.4%)
61to80%	15(31.25%)	14(33.4%)
41to60%	20(41.66%)	15(35.7%)
20to40%	8(16.7%)	8(19.06%)
0to20%	1(2.08%)	4(9.5%)

Table 4

Response	Group A	Group B
81to100%	8(17.4%)	4(9.5%)
61to80%	24(53.4%)	20(47.6%)
41to60%	10(22.3%)	14(33.3%)
20to40%	6(13.3%)	4(9.5%)
0to20%	0	0

Table 5

At 4 week and 8 week of treatment % changed in the PASI score in the group. A and Group B was as per table 4 and table 5. After 4 week of treatment with methotrexate 8.3% of patient has more than 80% reduction in PASI score, 31.25% has 61% to 80% reduction, 41.66% has 41% to 60% and 16.7% patient have 20 to 40% reduction in PASI score. Pt in the group B. Treatment with Azathioprine 2.4% of patient has more than 80% reduction in PASI score 33.4% has 60% to 80%, 35.7% has 40% to 60% and 19.06% has reduction in PASI score by 20to40%.

After 8wk of treatments in Group A 17.4% have 81 to 100% reduction in PASI score 53.4% have 61% to 80%, 22.3% have 41% to 60% and 3.3% have 20 to 40% reduction in PASI score. After 8 week in group B 9.5%of the patient has reduction in PASI score by 80 to 100%, 47.6% have 61% to 80%, 33.3% have 41% to 60% and 9.5% have 20to 40% reduction in PASI score.

**DISCUSSION:** Total eighty patients with psoriasis were included into the study and divided into two groups, Improvement with respect to percentage change PASI score was seen in both the group at the end of 4 weeks and 8 weeks.

At the end of 8week it was observed that methotrexate group have better response in the form reduction in PASI score.

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It has been found that methotrexate has an immediate inhibitory effect on pure glucose 6 phosphate dehydrogenate whereas azathioprine produces no change in this. And also methotrexate inhibited "acid" phosphatase activity of human skin, so methotrexate is more effective than Azathioprine what we have got in our study.<sup>(6)</sup>

In 1961 Kravetz and Balsam for 1<sup>st</sup> time used azathioprine in psoriasis they used the dose 2mg/kg/day in 12 patients with improvement.<sup>(7)</sup> In 1970 Greaves and Dauber used 2.5mg/kg/day in 10 patients with 25% clearance.

In 2002 Kumar and Saraswat used methotrexate for 197 patients more than 75% improvement occurred in 88% of the patients.<sup>(8)</sup> In our study on 80 patients it was found that methotrexate was orally effective than Azathioprine in treatment of psoriasis.

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