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Case Report

Combination of Systemic Cyclosporine and Topical Vitamin D3 Analogue as a Safe and Effective Option for Plaque Psoriasis

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ABSTRACT

Introduction: Psoriasis is an autoimmune multisystem disorder affecting the skin and joints. Prevalence of psoriasis is 2 to 3% of the general population. It is usually chronic and waxes and wanes throughout life. Hence patients need therapy with options between topical and systemic therapy. Systemic medications alone are usually given for a longer duration affecting safety. Nonetheless patients on systemic therapy would need some topical agents. Here we present a case series of 5 patients with moderate to severe psoriasis who were effectively treated within a short duration, with a combination of systemic and topical medication.

Case Presentation or Series: 5 patients of moderate to severe psoriasis were treated with a combination of systemic and topical therapy. The patients were given systemic therapy (cyclosporine 2.5-5mg/kg/day) for 6 weeks. Along with systemic therapy, the patients were given a vitamin D 3 analogue (calcipotriol) plus steroid (clobetasol) combination for initial 2 weeks followed by plain vitamin D 3 analogue (calcipotriol) for the next 4 weeks. The patients were evaluated on the basis of PASI scoring at the first visit, then after week 2 and finally at the end of treatment completion. All the patients showed good improvement in the clinical outcome of psoriasis within 6 weeks with minimal side effects. The average PASI reduction score was 70.6%

Conclusion: The case series presents those patients with moderate to severe psoriasis can be effectively treated with a combination of systemic and topical therapies. The combination treatment can reduce the treatment duration with a good safety profile. Topical therapy is the mainstay of treatment for mild to moderate psoriasis and serves as a useful adjunct support to systemic therapy in moderate to severe disease. However, efficacy and compliance to topical therapy in psoriasis have been a major concern.

Key-words: Psoriasis, Cyclosporine, Calcipotriol, Systemic, Topical Vitamin D3.

INTRODUCTION

Psoriasis is a chronic, autoimmune, inflammatory multisystem disease which predominantly affects skin and joints. It afflicts 2% to 3% of the general population. [1,2] Psoriasis substantially affects health-related quality of life (HRQoL). [3] Psoriasis burden is great, affecting physical, psychological, and occupational well-being. [4]

Recent genetic and immunological advances have greatly increased understanding of the pathogenesis of

psoriasis as a chronic, immune-mediated inflammatory disorder. [1,3]

For most patients, therapy options are between topical and systemic therapy. Systemic medications alone are usually given for a longer duration affecting safety. Nonetheless patients on systemic therapy would need some topical agents. Topical therapy may provide symptomatic relief, minimize required doses of systemic medications, and may even be psychologically cathartic for some patients. [5]

Here we present 5 cases of moderate to severe psoriasis who were effectively treated with a combination of systemic Cyclosporine (2.5 – 5mg/kg/day) for six weeks along with topical medications (Calcipotriol plus Clobetasol combination for first two weeks and plain Calcipotriol next four weeks). The average PASI reduction score for the 5 patients was 70.6%.

CASE HISTORY

Case 1:

A 47 year old male patient (BMI=32.4), hypertensive (152/92mmHg) with no relevant family history, who was earlier on Ayurveda and homeopathic medications for psoriasis presented with psoriatic lesions (fig 2, 3). Pretreatment PASI score is mentioned in table 1.The patient was given systemic cyclosporine along with topical combination of calcipotriol and clobetasol for two weeks. After two weeks, psoriatic lesions showed improvement. No adverse events were reported. His blood pressure (BP) -150/100mmHg was stable. The patient was advised to continue Cyclosporine and replace the combination with topical application of Calcipotriol twice a day for fifteen days. After six weeks, all lesions were healed with post inflammatory pigmentation (fig 3). His blood pressure was slightly higher as compared to his baseline BP -170/110mmHg.The PASI reduction score was 79.2%.

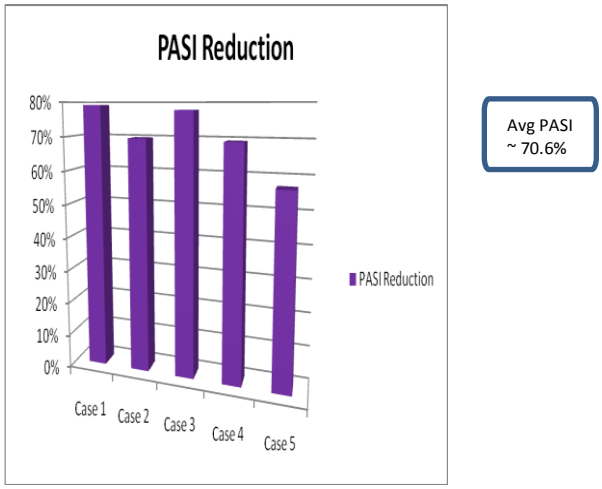

Fig.1: PASI score reduction in treated patients

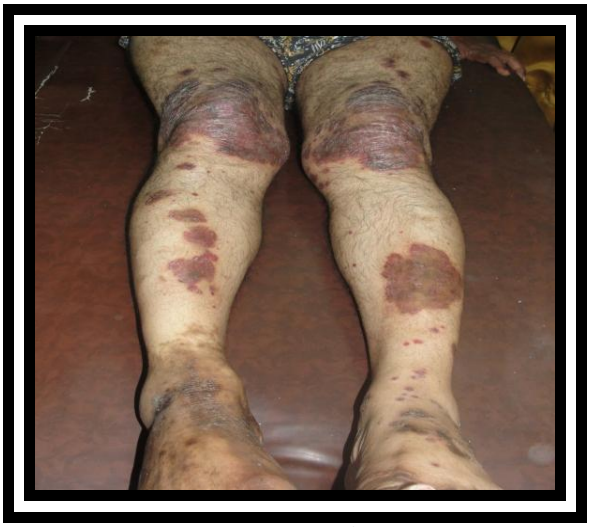

Fig 2: Psoriatic lesions on the knees of both lower extremities.

Table 1: PASI Scores at Baseline, 2weeks and 6 weeks

PASI				
Case/Week	Baseline	2 weeks	6 weeks	PASI Reduction
Case 1	14	10.8	2.9	79.2%
Case 2	17.5	15.3	5.3	69.7%
Case 3	12.2	6.9	2.7	77.8%
Case 4	22.2	11.5	6.8	69.3%
Case 5	29.4	16	12.6	57.1%

The PASI calculation for all patients as per week of therapy is stated in the table as above.

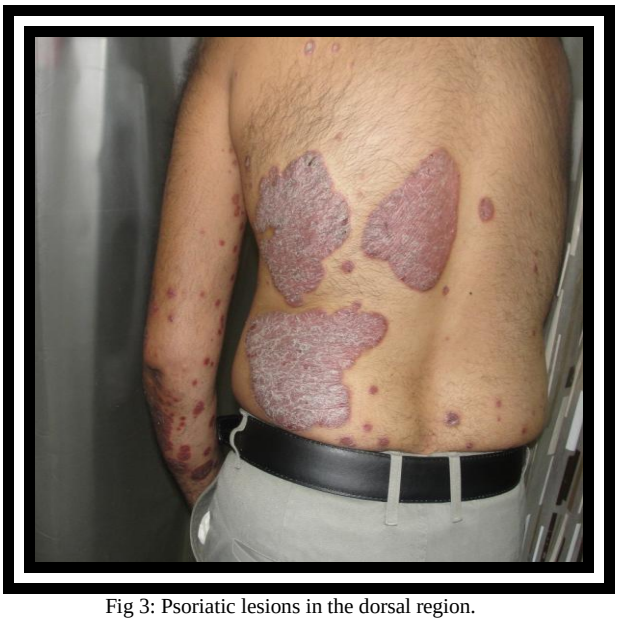

Fig 3: Psoriatic lesions in the dorsal region.

Case 2:

A 29 year old male patient (BMI=32.1) with no relevant past or family history presented with severe lesions (fig 5 and 6). His BP was 140/80mmHg. His pretreatment PASI is mentioned in table 1.The patient was prescribed systemic cyclosporine along with topical Calciportiol and Clobetasol combination once at night for two weeks. After two weeks, the patient showed early signs of improvement with no side effects. He was advised to continue Cyclosporine and replace the combination with topical Calcipotriol BD for the next four weeks. His BP was 148/88mmHg. His blood profile was normal. After six weeks, the patient had minimal lesions on upper and lower limbs without any side effects (fig 7). The PASI reduction score was 69.7%.

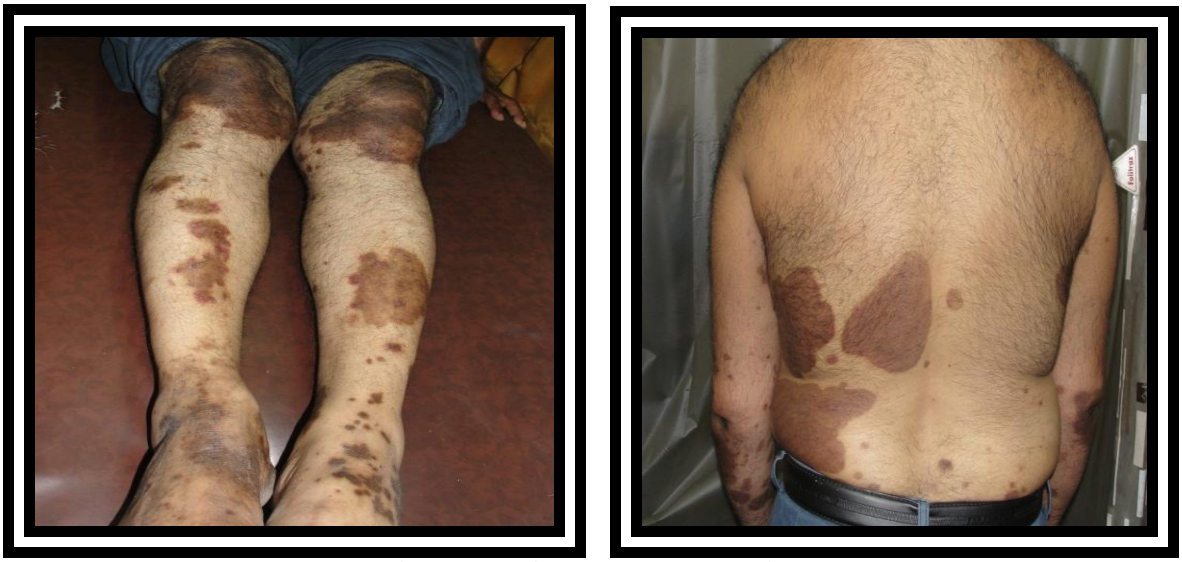

Fig 4: Healed lesions after six weeks of treatment showing post inflammatory pigmentation

Case 3:

A 46 years old male patient (BMI-27) with no relevant family or medical history presented with psoriasis (fig 8 and 9). His BP was 124/74 mmHg. He had earlier taken Methotrexate for Psoriasis without any side effects. His pretreatment PASI is mentioned in table 1.The patient was advised systemic Cyclosporine along with topical Calcipotriol and Clobetasol combination OD. After two weeks, the patient showed good improvement with no side effects. After four weeks, the patient presented with gastric upset and acidity. His psoriatic lesions showed improvement. His BP was slightly raised- 136/90mmHg. He was advised to continue Cyclosporine and take Rabeprazole (20mg OD) along with

topical Calcipotriol BD for fifteen days. After five weeks, the patient developed pain in the abdomen and was advised USG which showed renal calculi. BP was 140/80mmHg. Urine showed traces of albumin. Blood urea (42.4 mg%) and Sr. Creatinine (1.9 mg/dl) were raised. His lipid profile was also raised (TGL-317mg%, Total Cholestrol-259mg%, HDL-41.9mg%, LDL-153.7mg%, VLD-63.40%).

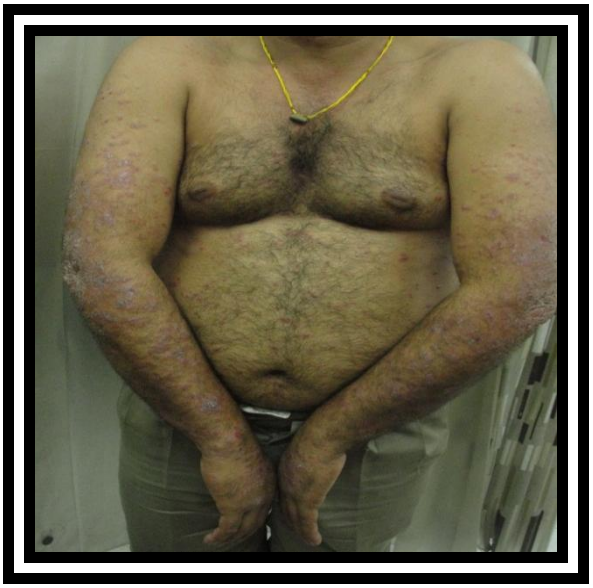

Fig 5: Bilateral Psoriatic lesions on upper limbs

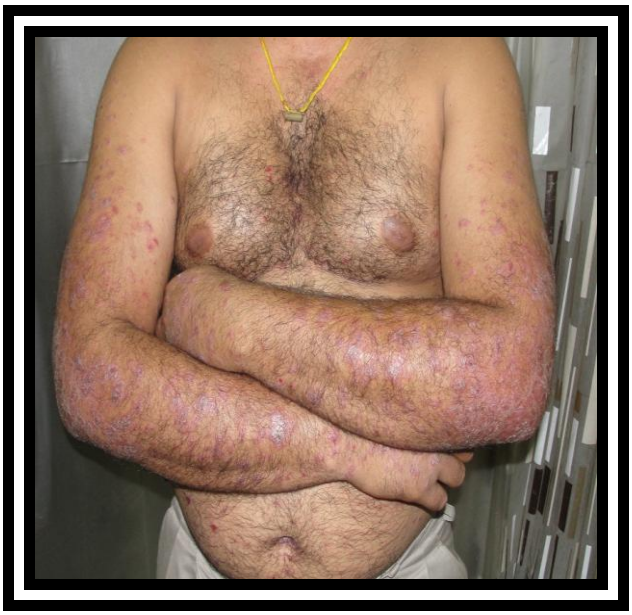

Fig 6: Extensive silvery white scaly lesions visible bilateral on both arms.

Patient discontinued cyclosporine and was given treatment for renal calculi. His psoriatic lesions showed excellent recovery (Fig 10). The PASI reduction score was 77.8%.

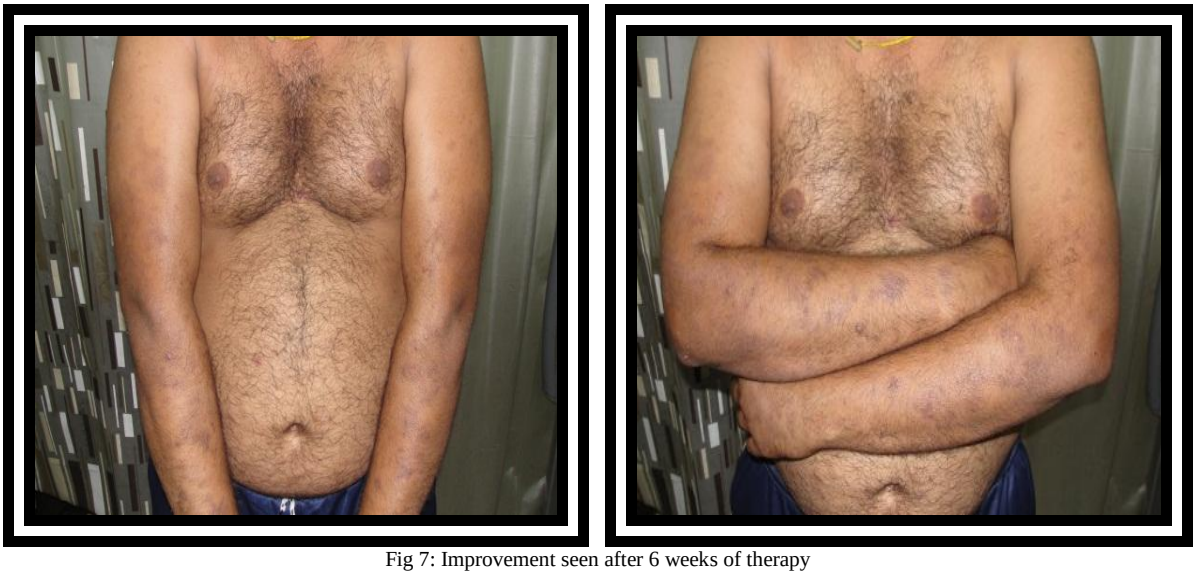

Fig 7: Improvement seen after 6 weeks of therapy

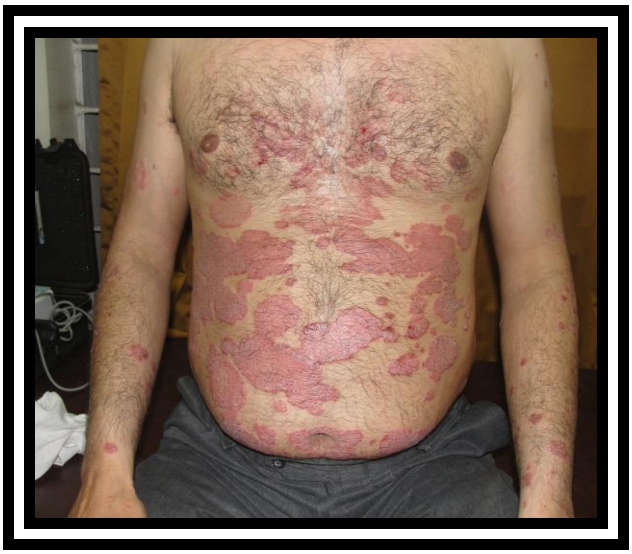

Fig 8: Extensive Psoriatic lesions on the trunk.

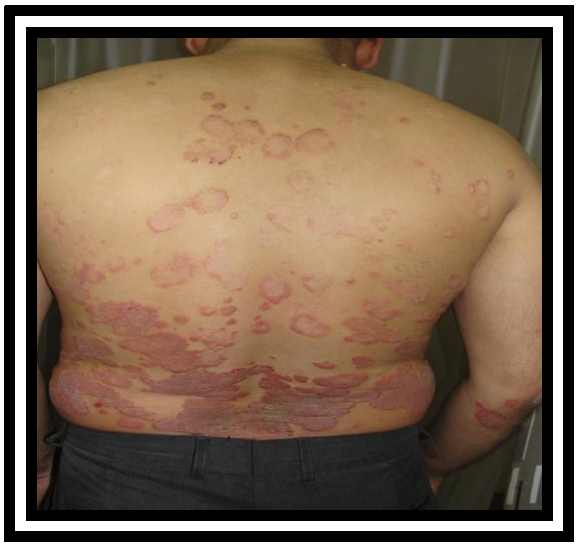

Fig 9: Psoriatic lesions on the lower back

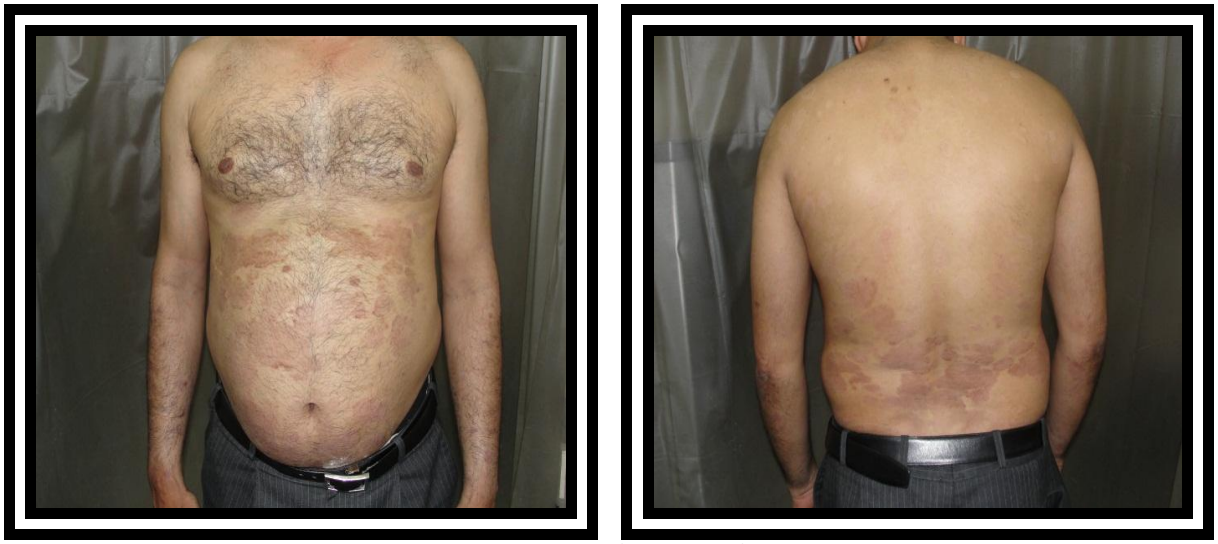

Fig10: Improvement seen after 6 weeks of treatment.

Case 4:

A 47 years old male patient (BMI-19.1) with past history of psoriasis since 3 years presented with exacerbations (figs 11, 12 and 13). He had earlier taken Methotrexate treatment. His BP was 134/84mmHg with a normal blood profile. His pretreatment PASI is mentioned in table 1. He was given systemic cyclosporine along with topical calcipotriol and clobetasol combination for fifteen days. After two weeks, he showed good improvement with no side effects. His BP was 140/90mmHg. He was advised to take continue systemic Cyclosporine along with topical Calcipotriol ointment OD. After six weeks, the lesions on the trunk totally cleared and on the legs showed improvement (Fig 13, 14). There were no side effects. His BP was raised to 164/103mmHg. The PASI reduction score was 69.3%.

Case 5:

A male patient with no relevant medical or family history presented with

severe psoriasis (fig. 16, 17). His BP- 118/82mmHg was normal. His pretreatment PASI is mentioned in table1. He was advised to take systemic Cyclosporine with topical Calcipotriol and Clobetasol combination for 15 days. After two weeks, he showed good improvement with no side effects. His BP- 120/80mmHg was normal. He was advised to continue systemic cyclosporine with topical Calcipotriol ointment BD for four weeks. After six weeks, his BP was a little raised to 126/78mmHg.The PASI reduction was 57.1%.

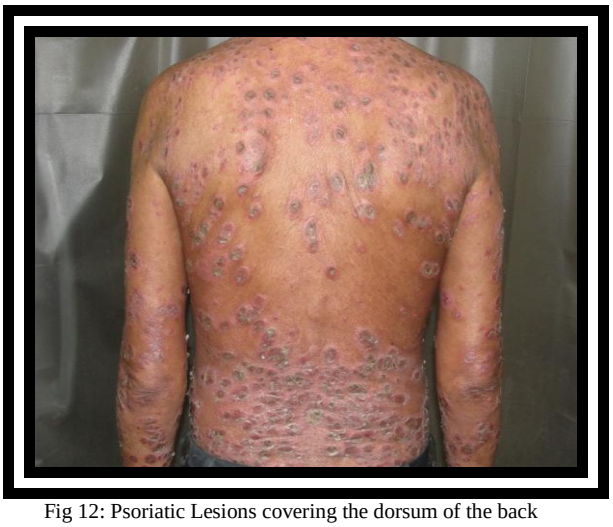

Fig 12: Psoriatic Lesions covering the dorsum of the back

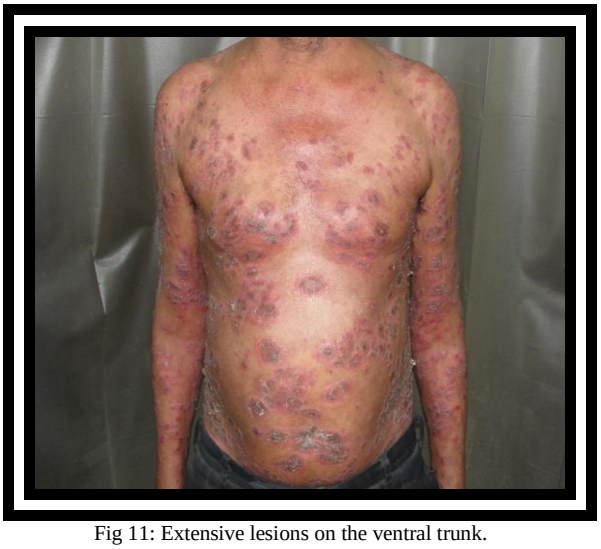

Fig 11: Extensive lesions on the ventral trunk.

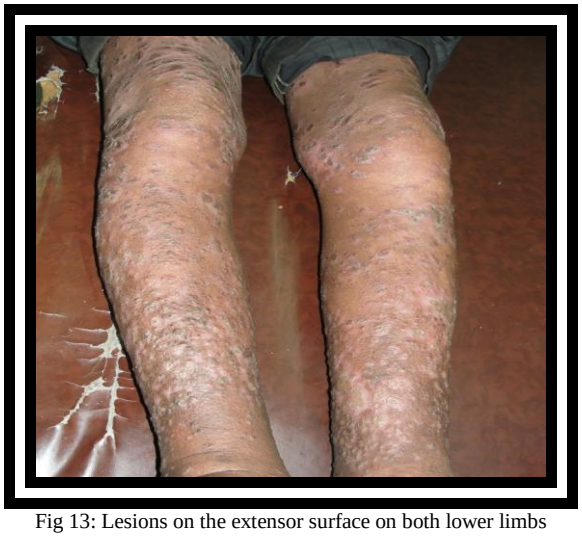

Fig 13: Lesions on the extensor surface on both lower limbs

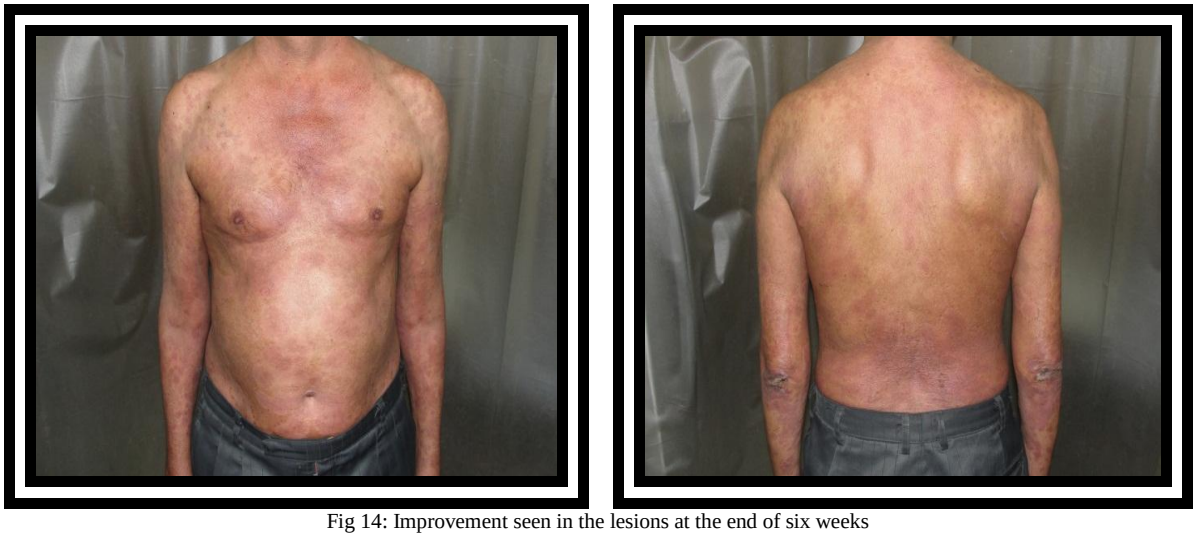

Fig 14: Improvement seen in the lesions at the end of six weeks

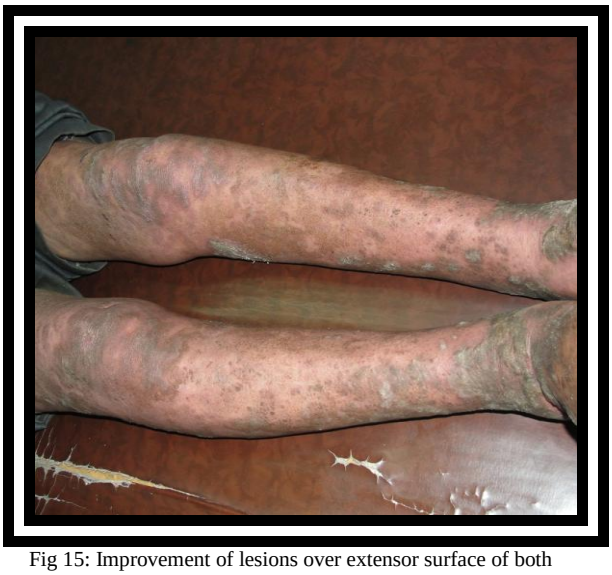

Fig 15: Improvement of lesions over extensor surface of both lower limbs seen after 6 weeks of therapy

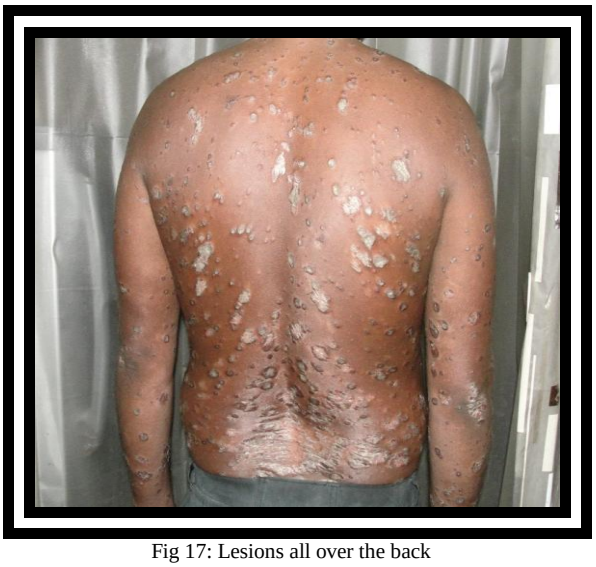

Fig 17: Lesions all over the back

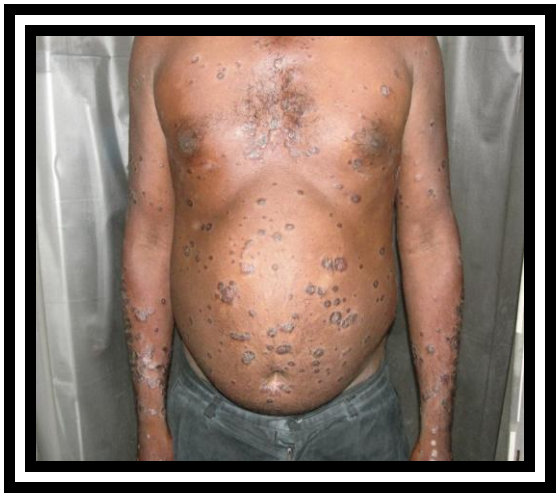

Fig 16: Psoriatic lesions on the trunk

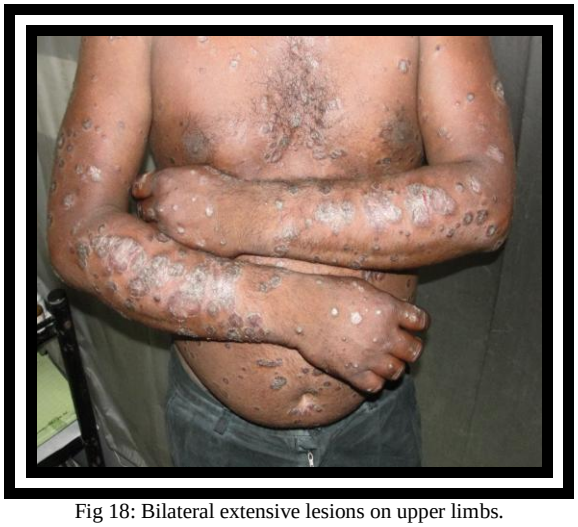

Fig 18: Bilateral extensive lesions on upper limbs.

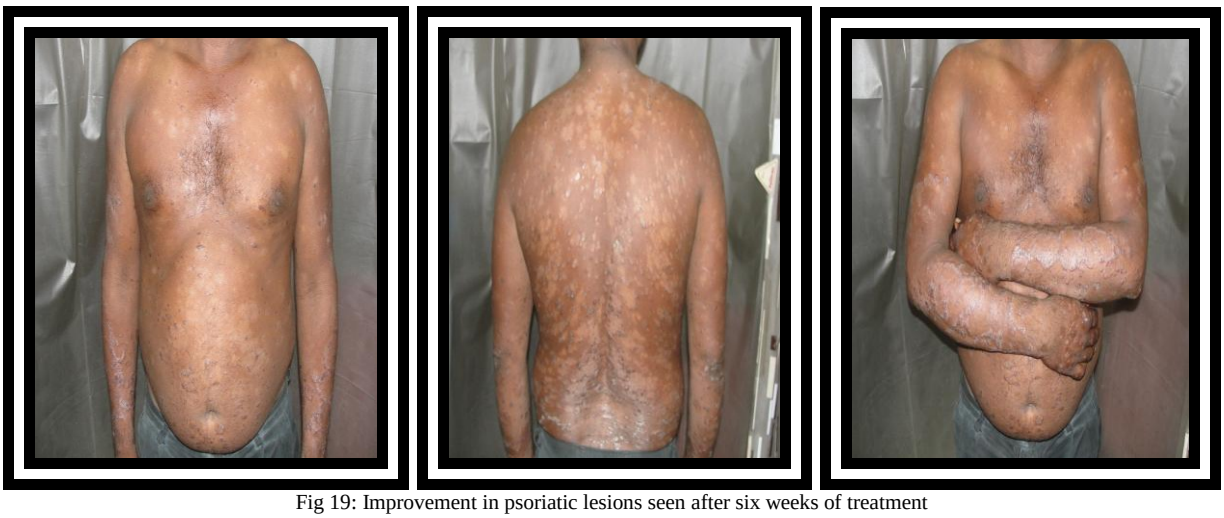

Fig 19: Improvement in psoriatic lesions seen after six weeks of treatment

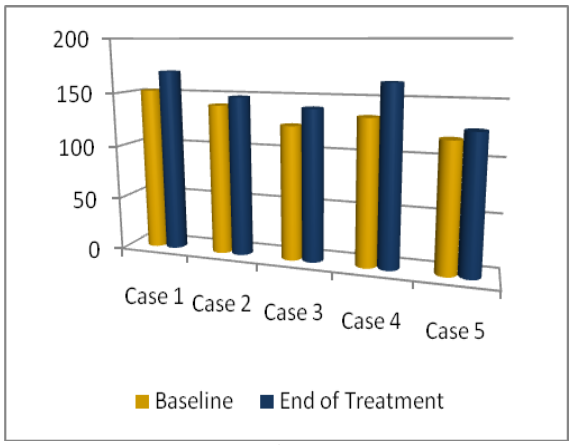

Fig 20: Systolic Blood Pressure for each Patient at the start and end of Treatment.

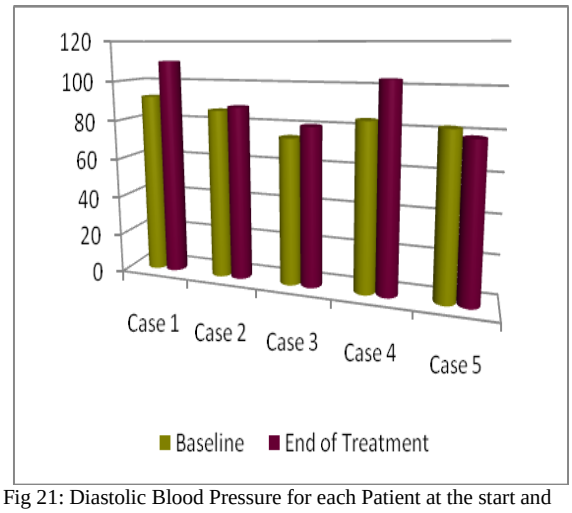

Fig 21: Diastolic Blood Pressure for each Patient at the start and end of Treatment.

DISCUSSION

Psoriasis is an immune-mediated disorder (T-cell-mediated disorder affecting keratinocytes). During an active disease state, there is an inflammatory response. [6]

Remission is difficult to achieve and sustain in patients with moderate to severe psoriasis. [7] Hence both acutely acting and long-term maintenance agents are needed. Speed and efficiency of available monotherapies tend to be inversely proportional to safety. [8] Cyclosporine is a calcineurin inhibitor (acts on the T cells), Calcipotriol is a vitamin D 3 analogue which inhibits hyperproliferation of keratinocytes (acts on Vitamin D receptors) and Clobetasol is a potent steroid (action on inflammatory cells and mediators). [4] We gave a combination of systemic Cyclosporine with topical Calcipotriol plus Clobetasol combination for two weeks followed later by Calcipotriol alone for four weeks in patients with moderate to severe psoriasis.

Combining agents with complementary adverse effect profiles is preferable. [8] Cyclosporine is known to cause hypertension and nephrotoxicity, while calcipotriol may cause irritation and hypercalcemia. Clobetasol being a potent steroid is known to cause skin atrophy, irritation, telangiectasia, etc. The mechanism of action for the three drugs varies and so does their side effect profile. [1,4] The benefit of the combination reduced the duration of therapy to six weeks. The combination also improved the safety for the drugs. [1,4]

Using two or more therapies is thus the rule rather than the exception for most patients with moderate-to-severe psoriasis, but picking a combination that serves to balance safety and efficacy needs careful consideration, especially since no evidence-based treatment guidelines exist. [8,9]

CONCLUSION

The schematic and systematic approach of systemic plus topical treatment of psoriasis with cyclosporine, calcipotriol plus clobetasol combination and calcipotriol over 6 weeks is an effective and safe method for faster control over psoriasis.

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