

## THERAPY

# Calcipotriol: A Safe and Effective Topical Treatment for Psoriasis

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### SUMMARY

Calcipotriol, a vitamin D3 analogue, was used in the treatment of seventeen psoriatic patients. Most of these patients had a long standing disease, and had used one or more systemic or local therapeutic modalities. Calcipotriol was found to be effective and well tolerated by most of our patients with minimum side effects that were noted in few patients. We conclude that calcipotriol is both safe and effective for mild to moderate psoriasis. It also provides an alternative treatment for patients in whom other therapies are contraindicated.

### INTRODUCTION

Psoriasis is a very common skin disorder that is characterized by increased epidermal cell proliferation. A wide range of topical and systemic treatments had been used in psoriasis, each treatment has its advantages and disadvantages.

Calcipotriol is a relatively new synthetic Vitamin D3 analogue. But it is only 1% as active as Vitamin D3 on Calcium metabolism<sup>(1,2)</sup>. Both Vitamin D3 and its analogue are potent inhibitors of cellular proliferation. They increase differentiation in a number of cell lines<sup>(3,4)</sup>. In vitro studies have shown that calcipotriol is a potent inhibitor of human T lymphocyte activation induced by Interleukin-1<sup>(5,6,7)</sup>.

### MATERIALS AND METHODS

Calcipotriol was tried in the treatment of psoriasis in 17 patients of six different nationalities at the Dermatology Department, Hamad Medical Corporation, Doha, Qatar. Eight patients (47%) were males, and 9 patients (53%) were females. Age of the patients ranged from 9 to 51 years. Ten (58.82%) of the patients were above the age of 34 years. Duration of psoriasis varied from 1 to 23 years.

All patients were examined prior to the trial, af-

ter two weeks, and monthly thereafter for at least four visits. The Psoriasis Area and Severity Index (PASI) score was recorded for all the patients in each visit. Initial PASI score varied from 5 to 40. Sites affected by psoriasis in the patients included scalp, face, trunk and extremities. Only 11.76% of patients had palmoplantar lesions.

All patients were investigated, before, during and after the trial. These investigations included: C.B.C., fasting blood sugar, liver and renal function tests, serum calcium, S. cholesterol and triglycerides, and urine routine and microscopic.

Six patients (35.29%) had one or more of the following medical problems prior to Calcipotriol therapy: abnormal findings of either liver or kidney functions, hyperlipidemia, cardiac problems, or hypertension. Thus, Methotrexate (MTX), Etretrate, PUVA, and Cyclosporin-A therapies were contraindicated.

Six patients had been on one or more of the following systemic treatments: PUVA, Etretrate, MTX and Cyclosporin A. Twelve patients had used Anthralin in the treatment of their psoriasis. Seventeen patients had used topical steroids. Eleven of the latter have used Betamethasone while 6 patients used Clobetasole propionate.

Two patients used Betamethasone 17 valerate on the left side lesions and another 2 patients used Clobetasol propionate. Only one patient used Anthralin 0.5% on the left side lesions. Calcipotriol was used as treatment of psoriatic lesions on the right side of the body lesions in these patients.

In all patients, Calcipotriol 50 mcg/ gram was applied twice daily and the maximal amount of Calcipotriol did not exceed 100 gram/week.

### RESULTS

At the end of the 2nd week, 13 patients (76.4%) showed at least 25% improvement and one (5.8%) showed complete clearance.

At the end of the 6th week 11 patients (64.7%) showed at least 50% improvement. Eleven patients (64.7%) showed 95% improvement at the end of the 10th week of treatment. Two patients (11.76%) showed 75% improvement and this means that at least 75% improvement was achieved in 75% of patients in 10 weeks. One patient (5.8%) showed 25% improvement, while two patients (11.7%) did not show any change. One patient (5.8%) discon-

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tinued the treatment.

Patients with palmoplantar lesions (2 patients) did not show any change, even after 14 weeks of continuous treatment with Calcipotriol. However, other lesions in these patient cleared completely. Three patients (7. 17.64% ) used Calcipotriol on their scalp lesions and it proved effective and well-tolerated.

Relapse period varied from 2-4 weeks after discontinuation of Calcipotriol. Furthermore, Calcipotriol cleared or improved new lesions as well.

It was noticed that guttate lesions responded faster than large plaque lesions. Also, lower limbs responded slower than trunk and upper limbs. In patients who used concurrent comparative treatment, Calcipotriol was superior to anthralin and more acceptable. Calcipotriol was almost as effective as Betamethasone and clobetasole propionate.

As regards side effects, one patient (5.88%) complained of irritation and pruritus. Two patients (11.76%) experienced burning sensation, while 14 patients (82.34%) did not record any side effect. None of the 17 patients(100%) in this study showed any change in their biologic parameters throughout the period of the trial.

## DISCUSSION

Calcipotriol is colourless, odorless and does not stain clothes.<sup>8</sup> When compared to other traditional treatments of psoriasis, Calcipotriol was found to be more effective and better accepted than short con-

tact Anthralin therapy,<sup>9,10</sup> and as effective as betamethasone 17-valerate ointment.<sup>11,12</sup>

Reviewing the literature showed that our impression about Calcipotriol in treatment of Psoriasis was comparable to results obtained by various workers.

Calcipotriol was found to be both effective and tolerated in more than 3000 patients with psoriasis vulgaris.<sup>13</sup> It was able to control psoriasis in 167 patients safely over a period of one year with a maximum of 100 gram weekly.<sup>14</sup>

Calcipotriol was used in the treatment of 10 patients with extensive psoriasis, and it was concluded that Calcipotriol is an effective treatment in such conditions. All side effects were reversible.<sup>15</sup> Not only this, but Calcipotriol was also used safely in the treatment of three generalized pustular psoriasis in a dose more than 100 gram/week for 1-3 weeks then other systemic treatments were considered.<sup>16</sup>

Calcipotriol was used also in the treatment of a 29-year-old patient with erythrodermic H.I.V.-related psoriasis which responded well. As it is known, systemic therapies for H.I.V.-related patient are limited because of their immunosuppressive effects.

In conclusion, we found that Calcipotriol is both safe and effective in treating psoriasis vulgaris. In our opinion, It is preferred to Anthralin and Betamethasone ointment in mild to moderate psoriasis. Furthermore, Calcipotriol may have a place in the treatment of extensive psoriasis, especially if other systemic treatments are contraindicated. However, the cost and bi-daily use may restrict its use.

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