Treatment of Psoriasis Vulgaris with Topical Vitamin D Analogue (Calcipotriol): Open Multicenter Study

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Abstract

Sixty one psoriasis patients, 46 males and 15 females (mean age: 40 years, range: 20-70 years) with baseline PASI score of 7.16 (± 3.66 SD) were enrolled in the study. All subjects were advised to apply calcipotriol ointment twice daily for 6 weeks. Six patients dropped out, five after 2 weeks and one after 4 weeks of treatment. PASI scores of fifty five patients were reduced to 2.16 per cent, 46.78 per cent and 55.55 per cent by 2 weeks, 4 weeks and 6 weeks respectively versus the baseline. Overall clinical assessment showed remission in 7.27 per cent marked improvement 74.54 per cent and slight improvement 18.18 per cent. Mild erythema were observed in fourteen patients (22.95%) that were mostly transient except for one patient. Serum creatinine, calcium and phosphate were normal throughout the study.

Key word : Psoriasis Vulgaris, Calcipotriol, Vitamin D Analogue

Psoriasis is a common disease in the outpatient skin clinic, and the cause is still unknown. It is characterized by hyperproliferation with incomplete keratinization of epidermal keratinocyte. In 1985, Morimoto and Kumahara[1] reported a senile osteoporotic patient with psoriasis who was cured by one alpha dihydroxyvitamin. D_3; then in 1986[2] they did an open study of vitamin D_3 treatment for psoriasis vulgaris of both oral and topical forms with satisfactory results. The use of oral vitamin D_3[3,4] in this condition is limited because of its hypercalcaemic side effects. Calcipotriol[5] is an analogue of 1∝, 25-OH_2D_3 with 100 times less effect on calcaemic activity. Calcipotriol has affinity for calcitriol receptor in the epidermal cell which leads to antiproliferation and induction of complete keratinization of psoriatic skin at the same potency as 1∝, 25-OH_2D_3. Topical calcipotriol was later developed for anti-psoriatic therapy. In western countries, a number of clinical trials have

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been published, which showed the beneficial effect of calcipotriol ointment on psoriasis compared to placebo[6], betametasone ointment[7,8] and dithranol cream[9]. Calcipotriol ointment can be combined with UV light[10], PUVA and other forms of treatment.

Calcipotriol is dose-related and is available commercially in ointment form at a concentration of 50 mcg/g. No more than 100 g of 50 mcg/g calcipotriol ointment should be applied per week, as this may be associated with an increased risk of hypercalcemia. Long term use[12] such as one year showed satisfactory response without hypercalcemia.

The objective of the study was to determine the efficacy and tolerability of topical calcipotriol ointment in oriental psoriatic patients who have skin types different from western patients in an open multicentre study with 6 weeks treatment period.

PATIENTS AND METHOD

A multicenter open study on the efficacy of the topical calcipotriol ointment for the treatment of psoriasis vulgaris was carried out in the Institute of Dermatology, Siriraj Hospital and Chulalongkorn Hospital, Thailand from October 1993 to February 1997. Sixty one out-patients with chronic plaque type psoriasis were enrolled in the study. Patients included were 15 females and 46 males ages ranging from 20-70 years. The duration of the lesions varied from 2 months to 20 years and the patients had used various forms of treatments. Baseline analysis of blood studies such as complete blood count, liver function tests, serum calcium, phosphatase and creatinine were done, and all were within normal limits. Patients who had unstable psoriasis, pregnant women, impaired renal or hepatic functions, or those who had taken vitamin D or calcium preparations were excluded from the study.

Patients who had received systemic anti-psoriatic drugs or UV treatment had to stop the treatment for at least 2 months prior to the study. Patients who were on topical anti-psoriatic treatment had to discontinue treatment for 2 weeks.

A 2- week washout period with emollient was followed by 6 weeks of treatment with 50 mcg/g calcipotriol twice daily, and assessment was done every 2 weeks. Patients were instructed not to apply the ointment on their face of flexural areas to avoid possible local skin irritation and were told to wash their hands after each application to prevent inadvertent ointment transfer from hands to face.

At each visit, the investigators assessed the extent and severity of psoriasis with a modified Psoriasis Area and Severity Index (PASI). The patient assessed the changes of their skin lesions on a 5-point scale and were to report any adverse events. The investigators also assessed the clinical changes on a 5-point scale and recorded the skin reactions on each visit. Serial serum calcium, creatinine and phosphate levels were measured after 2 weeks and 6 weeks of treatment.

RESULT

Sixty one patients with a mean PASI score of 7.6 received topical calcipotriol ointment. Five patients dropped out after 2 weeks of treatment, four due to stinging and erythema and one patient was lost to follow-up. After 4 weeks of treatment, one patient was withdrawn because of unsatisfactory PASI score from 5.4 to 3.2.

Fifty five patients completed the 6 weeks of calcipotriol treatment. The mean PASI scores at 0,2,4 and 6 weeks were 7.61, 5.53, 3.45 and 2.80 respectively. A progressive reduction of PASI scores were significantly observed from the second through the sixth weeks of treatment (2.16%, 46.78%, and 55.55% respectively) as compared with the baseline.

One patient had facial dermatitis which disappeared after being cautioned about hand contamination. Serum calcium and creatinine levels were normal in the second and sixth weeks of treatment. No systemic side effects were found.

DISCUSSION

This study has shown that topical calcipotriol is an effective, well tolerated anti-psoriatic therapy for oriental patients who always tan after sun exposure. The only adverse effect was mild and transient skin irritation. Normal serum calcium levels during the 6-week treatment period suggested that there was no significant systemic absorption of vitamin D_3. Calcipotriol can improve psoriasis as shown by the reduction in the mean PASI scores 46.8 per cent and 55.6 per cent after 4 weeks and 6 weeks of treatment respectively. The improvement seen in this study was shown to be the same as that reported in western countries[3,6-8].

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การรักษาโรคโซริเอสิส ด้วยครีมไวตามินดี (Calcipotriol)

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เนื่องจากโซริเอสิส เป็นโรคผิวหนังชนิดเรื้อรัง จึงมีผู้คิดค้นยาใหม่ ๆ อยู่ตลอด มีทั้งยาทาเฉพาะที่และยารับประทาน การศึกษาในต่างประเทศพบว่ายาทาผสมไวตามินดี (Calcipotriol) ได้ถูกนำมาใช้รักษาและพบว่าได้ผลดี รายงานนี้เป็นการศึกษาผลการรักษาและภาวะแทรกซ้อนที่อาจเกิดจากการใช้ครีมไวตามินดีรักษาโรคผิวหนังโซริเอสิสในผู้ป่วยคนไทย การศึกษาใช้วิธี open study และ multicenter ร่วมกัน 3 สถาบัน เป็นเวลา 6 สัปดาห์ จำนวนผู้ป่วย 61 ราย ชาย 46, หญิง 15 (อายุเฉลี่ย 40 ปี) PASI score 7.16 (± 3.66 SD) โดยให้ทายาวันละ 2 ครั้ง เป็นเวลา 6 สัปดาห์ ผลการรักษาพบว่าผู้ป่วยไม่ได้มาติดตามผลจำนวน 6 คน ผู้ป่วยที่เหลือจำนวน 55 คน PASI scores เพิ่มขึ้นเป็น 2.16%, 46.78% และ 55.55% ในสัปดาห์ที่ 2, 4 และ 6 ตามลำดับ การแปรผลจากอาการทางคลินิก พบว่า 7.27% ผื่นหายหมด 74.54% อาการดีขึ้นมาก 18.18% อาการดีขึ้นเล็กน้อย พบภาวะแทรกซ้อนมีอาการผิวแดงระคายเคือง 22.95% ค่า creatinine, calcium และ phosphate ในซีรั่มไม่มีการเปลี่ยนแปลง สรุปผลการรักษาพบว่าได้ผลดีไม่มีภาวะแทรกซ้อน และแนะนำให้ครีมไวตามินดีเป็นทางเลือกอีกทางหนึ่ง ในการรักษาโรคนี้โดยเฉพาะในรายที่ดื้อต่อการรักษาด้วยยามาตรฐานชนิดอื่น

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