Comparison of calcipotriol ointment and dithranol paste in the treatment of psoriasis — a pilot study

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Topical vitamin D analogue, calcipotriol is a new effective option for the treatment of psoriasis vulgaris [1]. Sri Lanka was one of the first countries in South East Asia, where calcipotriol was made available for patient use. This pilot study was undertaken to see the effectiveness of calcipotriol in our patients in Sri Lanka and also to compare its effectiveness with dithranol which is widely used in the region. Previous reported trials with calcipotriol have been conducted mostly in caucasions. It has been found that the bioactive form of vitamin D3 is a potent inhibitor of keratinocyte proliferation. Calcipotirol which is a vitamin D analogue is known to be as effective as vitamin D3 in combining with receptors in the human keratinocyte, thus inhibiting proliferation. However the hypercalcaemic action of calcipotriol is about 200 times less than that of vitamin D3 [2].

Patients and method

Patients attending the skin clinic, Teaching Hospital Ragama with mild to moderate psoriasis who have not been on any therapy for a period of one month prior to selection, participated in the study. They were randomly allocated into either the calcipotriol or the dithranol group. We assessed the extent of psoriasis of the upper limbs, trunk and lower limbs on a 6 point scale, ie zero no involvement and 6 is 90 to 100% involvement. Head and neck were not assessed. The severity of psoriasis was recorded on a 4 point scale, zero absent and 4 most severe for erythema, thickness and scaliness of the lesions. Psoriasis area severity index (PASI) was recorded at each visit. Patients were either given calcipotrol ointment 50 μg/g for application twice daily or dithranol 0.1% in lassers paste to be applied once daily to the psoriatic patches on the trunk and limbs. Assessment was recorded at the onset and at 2,4 and 6 weeks of treatment. Serum calcium was measured in five of our patients before and after 6 weeks of treatment.

Results

Results of 32 patients were available for analysis. 17 Patients, 12 male and 5 female with a mean age of 38.4 were treated with calcipotriol. 15 patients, 11 male and 4 female with a mean age of 42.8 were treated with Dithranol. Scores for erythema thickness and for scaliness are shown in Figures 1, 2 and 3. Both treatments significantly reduced the three components of psoriasis that were noted. There was no significant statistical difference in the two groups. The PASI scores are shown in Figure 4 and Table 1.

Table 1. Mean scores for erythema thickness and scaling at onset and end of treatment

		Mean score	
		Dithranol	*Calcipotriol*
Erythema	— 0	2.29	2.09
	6 weeks	1.32	0.49
Thickness	— 0	2.42	2.35
	6 weeks	1.32	0.52
Scaling	— 0	2.31	2.24
	6 weeks	1.31	0.41
Pasi	— 0	14.74	13.77
	6 weeks	6.61	2.06

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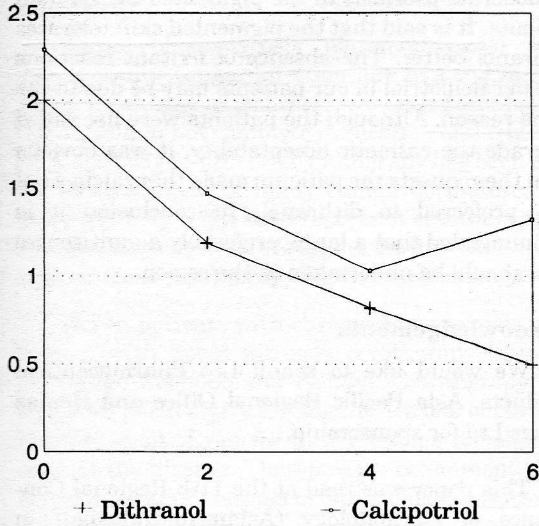

Figure 1. Mean changes in erythema.

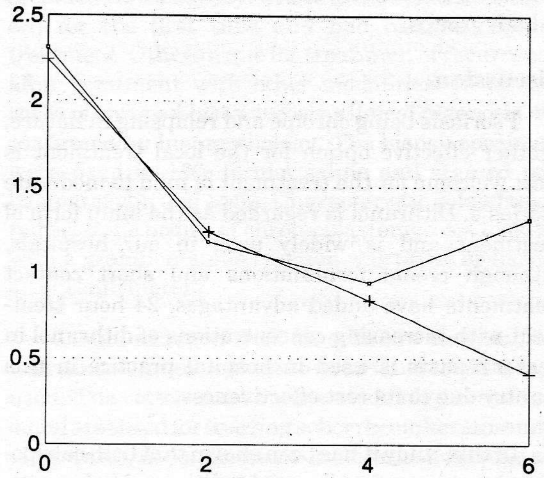

Figure 3. Mean changes in scaling.

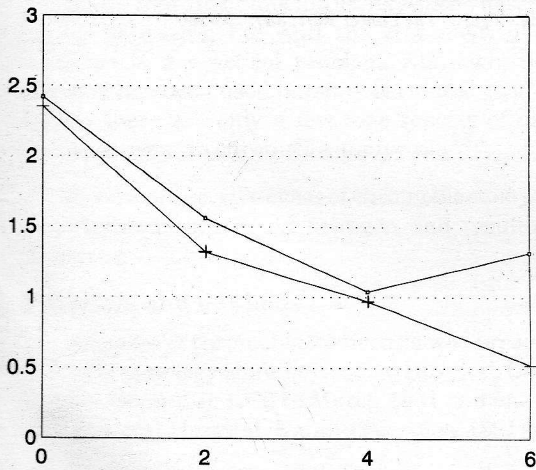

Figure 2. Mean changes in thickness.

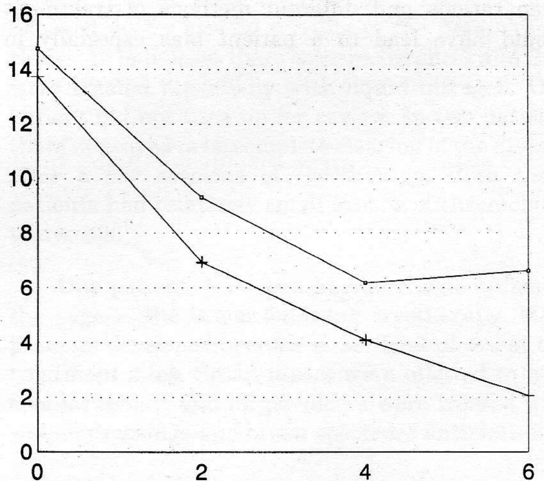

Figure 4. Mean changes in PASI score.

Mean PASI score fell significantly from 14.74 to 6.61 in the Dithranol group and from 13.77 to 2.06 in the calcipotriol group. However there was no statistically significant difference in the two groups. Serum calcium remained normal and except for some residual pigmentation no adverse effects were noted in both groups.

Discussion

Psoriasis being chronic and relapsing in nature, another effective option for the local treatment is most welcome for the treatment of mild to moderate psoriasis. Dithranol is regarded as the main form of treatment and is widely used in our hospitals. Although cream formulations and short contact treatments have added advantages, 24 hour treatment with increasing concentrations of dithranol in Lasser's paste is used in hospital practice in this country due to its cost effectiveness.

In this study it has been shown that both calcipotriol ointment and 24 hour 0.1% dithranol in Lasser's paste significantly reduced the observed parameters of psoriasis. The PASI score fell significantly in both groups. Lesional, perilesional or facial irritation usually reported [3] were not encountered in our study. Some residual staining of the skin were noted in both groups. There are many drawbacks in this study. The main weakness in that the number of patients recruted were too small. Although the trial was meant to be double blind the difference in nature of the two preparations and different methods of treatment would have lead to a patient bias especially in the case of patients who have previously had many forms of treatment.

However we could conclude that calcipotriol ointment is an effective form of treatment for mild to moderate psoriasis in the pigmented Sri Lankan patients. It is said that the pigmented skin tolerates dithranol better. The absence of irritant reactions due to calcipotriol in our patients may be due to the same reason. Although the patients were not asked to grade the cosmetic acceptability, it was obvious from the requests the patients made that calcipotriol was preferred to dithranol. In conclusion it is recommended that a large, preferably a multicentre trail should be undertaken in the region.

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