

# Treatment of Hand Dermatitis: A Comparative Study of a Topical Glucocorticoid Ointment vs Solution Occluded with a New Thin Hydrocolloid Dressing

Sir,

Hand dermatosis (HD) represents a considerable clinical problem as the course is often prolonged and chronic. The purpose of the study was to see whether a treatment régime consisting of a thin hydrocolloid dressing combined with a potent topical glucocorticoid preparation could induce a remission of the HD with a minimum of applications of the preparations. Furthermore, we wanted to investigate the most suitable galenic composition of glucocorticoid preparation for treatment of palms and fingers.

## MATERIAL AND METHODS

Thirty consecutive patients, 9 men and 21 women, mean age 51 years, with an acute outbreak of symptoms of HD were included in the study. All patients were treated at the day care clinic of the Department of Dermatology, Karolinska Sjukhuset in Stockholm, Sweden. The following types and numbers of patients completed the study: pustulosis palmo plantaris (5); psoriasis (1); tylotic eczema (4); atopic eczema (3); dyshydrotic eczema (1); allergic eczema (7); non-allergic eczema (1); both dyshydrotic and allergic eczema (2).

The occupations of the 30 patients originally included in the study were classified into five categories: light manual labour, heavy manual labour, professional driver and frequent wet/chemical contacts.

Fifteen patients were randomly allocated to treatment with Clobetasol propionate (Dermovate®-Glaxo) solution (DS) and 15 with Clobetasol propionate ointment (DO). Clobetasol propionate solution or ointment was occluded with the thin hydrocolloid dressing (Contreet Derma Cover®- CDC, Coloplast A/S), consisting of particles from sodium carboxymethylcellulose embedded in a matrix composed of a synthetic, resin-like tackifier and a synthetic elastomer. The glucocorticoid preparation was applied twice a week for the first 2 weeks and once a week for the next 2 and during the corresponding time covered with the dressing. If symptoms disappeared within the first 3 weeks, CDC was applied only for 1 week after disappearance of the symptoms. Control visits took place 4 and 12 weeks after start of treatment. By the end of the study, all patients returned a questionnaire concerning their experiences of the treatment.

The symptom severity was characterized by four different symptoms: itching, erythema, infiltration and scaling. These symptoms were graded 15 min after the removal of bandage at each visit on a four-point scale: 0=no symptom, 1=mild, 2=moderate and 3=severe. Itch was graded by the patient on a 10-cm visual analogue scale. Vesicles and pustules were noted as present or absent but not quantified. A comparison of treatments considering the score of the different

symptoms separately and of the sum of the scores at baseline was performed by a *t*-test.

A comparison of treatments considering the profiles of the sum score was performed by repeated measures ANOVA, including diagnosis as a factor on seven levels and three levels, respectively. The ANOVAs are based on data including both observed and imputed values. Comparisons of the treatment groups at each separate visit were performed by exact permutation test.

A comparison of treatments considering healing, relapse rates and experience of disadvantages was performed by Fisher's exact test. All tests were two-sided.

## RESULTS

One patient treated with DO and another treated with DS were excluded due to adverse events, and 4 dropped out of

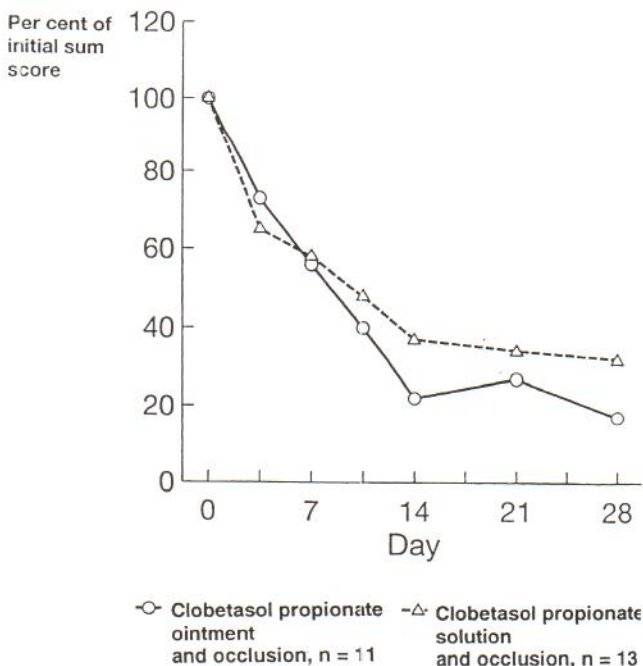


Fig. 1. Mean sum scores of estimated symptoms (itching, erythema, infiltrations, scaling, pustules and vesicles) in all patients irrespective of hand dermatosis.

the study for other reasons. Of the 24 patients who completed the study, 3 were treated unilaterally since no symptoms appeared on the other hand at inclusion. The results are presented according to the intention to treat principal.

Of the estimated clinical parameters, itch responded swiftly to both treatments. Nearly all pruritus had disappeared in 2 weeks. No difference was observed between the DO preparation and DS, except that the ointment caused less erythema than the solution. The mean scores decreased during the first 14 days of treatment, and after 28 days, the mean score of symptoms was reduced by approximately 80%. The number of patients within each diagnosis is too small for comparison of treatments. However, neither of the plots indicate statistically significant differences between the two treatments.

*Adverse effects.* Mefix<sup>®</sup> was used to fix the CDC dressing around the wrist. One patient reacted with an eczematous reaction, strictly located to the skin underneath the adhesive tape. Testing confirmed that the reaction was caused by colofony in the Mefix<sup>®</sup> paste. In one case a patient experienced severe erythema and vesicles under the Contreet bandage. Two patients experienced significant bacterial infections, but in one case the infection was localized outside the treated area. One in each treatment group dropped out of the study.

*Follow-up.* Out of the 24 patients who completed the study, 6 in each treatment group did not experience relapse. In each treatment group, one patient developed a total relapse. In the remaining 10 patients, a partial relapse was observed. Four of these patients were treated with DO and 6 with DS.

## DISCUSSION

Several studies have been published during the last 10 years demonstrating the effectiveness of combining hydrocolloid dressings with local steroids. Most studies have investigated the effect on psoriasis plaques (1). Other steroid-responsive conditions successfully treated with this combination are different forms of eczema, including neurodermatitis, localized lichen ruber planus, palmoplantar pustulosis and necrobiosis lipoidica (2). It has also convincingly been shown that occlusion with hydrocolloid dressings is more effective in the case of skin diseases than different forms of plastic film (3). Furthermore, hydrocolloid dressings combined with triamcinolone or betamethasone have been shown to be at least as effective or more effective than the most potent local steroid clobetasol (4–6) or UVB alone (7).

The traditional hydrocolloid dressings were designed for stoma-care mainly on the abdomen. They were not flexible enough to function satisfactorily over joints and were too thick to allow treatment of the hands. However, new thinner

and more flexible hydrocolloids have been developed. Contreet Derma Cover<sup>®</sup> is an example of such a dressing, primarily intended for occlusive treatment of dermatosis. It is somewhat difficult to fix the dressing when an ointment is used, but once in place, the dressing can without problems be used for a week. Occlusion with a cream caused more frequent dressing changes. The dressing is large enough to cover the whole palm, including the lateral and medial margin of the hand. The flexibility allows free movement of hand and fingers. This flexibility allowed patients to continue their work during the treatment period. The exception were 2 patients both working in restaurant kitchens, who had to be reported sick in order to be able to continue the treatment.

Although no one expects this treatment regime to cure chronic hand dermatosis, it offers a possibility of fast symptom reduction, enables the patient to continue working and can significantly reduce the number and length of absences from work.

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