

Treatment of Psoriasis and Other Dermatoses with a Single Application of a Corticosteroid Left Under a Hydrocolloid Occlusive Dressing for One Week

LENNART JUHLIN

Department of Dermatology, University Hospital, Uppsala, Sweden

Lotions of five different corticosteroids were applied on 3×4 cm areas of large infiltrated chronic psoriatic plaque in eight patients, and left occluded with a hydrocolloid dressing (Actiderm®) for one week. Areas treated with clobetasol, betamethasone and triamcinolone were clinically healed within one week in four patients, but slight residual erythema was observed in the other four. Hydrocortisone-treated areas showed better improvement than the non-steroid-treated control area, where infiltration and erythema remained unchanged. In 44 patients with psoriasis, lichen planus, chronic lichenified eczema, discoid lupus erythematosus and necrobiosis lipoidica, treatment with betamethasone applied 1–3 times under Actiderm once a week healed the lesions. The skin-coloured Actiderm is easy to apply and wear and does not loosen when taking a shower or hot bath.

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L. Juhlin, Department of Dermatology, University Hospital, S-751 85 Uppsala, Sweden.

Occlusion of a potent corticosteroid under plastic-like Saran wrap has been used for the treatment of psoriasis for a number of years, but is nowadays uncommon. The dressings had to be changed daily and the plastic was often found unpleasant. The introduction of a rather thin, skin-coloured hydrocolloid occlusive dressing (Actiderm®) which can be left on the skin for a week and even when taking a daily bath or shower has improved the acceptability of occlusive therapy. Actiderm is a hydrocolloid like Duoderm® but thinner. It has a moisture-impermeable polyurethane exterior and a hydrocolloid inner layer of gelatin, pectin, carboxymethylcellulose and polyisobutylene that adheres to the skin. Occlusion with Actiderm alone has been shown to improve psoriasis (1, 2). In a series of patients we have applied corticosteroids in alcoholic solution to psoriatic plaques and some other dermatoses and left the skin occluded with Actiderm for a week. The treatment was well tolerated and healing

was seen after one to three treatments. The results were compared with those of occlusion alone and of non-occluded skin.

MATERIAL AND METHODS

Preparations applied

Clobetasol propionate (Dermovat® lotion, Glaxo), betamethasone valerate 0.1% (Betnovate® lotion, Glaxo), betamethasone dipropionate 0.05% (Diproderm® lotion, Schering Corp.), triamcinolone 0.1% (Kenacort® lotion, Squibb) and hydrocortisone 1% dissolved in 99% ethyl alcohol.

Procedure

In eight patients the corticosteroids and an alcohol control were applied with a cotton swab on the same psoriatic plaque on 3×4 cm areas, leaving a 5 mm untreated zone between each steroid. The estimated use of the solution was 1 ml/dm². The solution was allowed to dry for 1–2 minutes before it was covered with an Actiderm dermatological patch (ConvaTec, Squibb, USA). All other patients were treated only with 0.1% betamethasone valerate under Actiderm, which was left on for one week. During this time the patients were allowed to take showers or baths as usual. After one week the Actiderm was removed, and the area was washed with 70% ethanol and inspected. The degrees of scaling, erythema and infiltration were noted. As a rule, the treatment was repeated for another week and in a few cases for 3 weeks. The patients received no systemic treatment. In psoriasis other areas were treated with UVB irradiation and/or anthralin. None of the patients had used any corticosteroids in the last month, but only vaseline or emollients.

Patients

Psoriasis: Twenty-three patients (ages 16–72 years) with chronic plaque lesions on the arms, legs and trunk, and six patients with lesions on the hands and/or feet.

Eczema and neurodermatitis: Eight patients (ages 25–76 years) with longstanding chronic lichenified plaques on the legs and arms that had not or only poorly responded to topical corticosteroids.

Lichen planus: Three patients (ages 47–62 years) with localized lesions on the arms and legs.

Discoid lupus erythematosus (LE): Two patients (36 and 62 years old) with longstanding infiltrated lesions on the face.

Necrobiosis lipoidica: Two patients (22 and 34 years old) who had had lesions on the legs for over a year. Resistant to topical corticosteroid ointments.

RESULTS

Effect on lesions

In four of the eight patients in whom 3–4 cm areas of the same infiltrated psoriatic plaque was treated for one week with clobetasol, betamethasone and triamcinolone under Actiderm, were clinically completely healed, and in the other four there was slight residual erythema. No difference in effect was found between these four drugs. Hydrocortisone showed some improvement in all patients as compared with the non-steroid-treated areas, where infiltration and erythema remained almost unchanged and only the scaling had disappeared.

The other patients were treated only with 0.1% betamethasone valerate. In six of 15 patients with plaque psoriasis the lesions appeared clinically healed, and in the other nine there was still slight diffuse or punctate erythema but no obvious infiltration or scaling. All lesions were healed after another week's treatment. To determine the minimal healing time, some plaques were inspected after 3–4 days. In four of 12 patients the lesions had then healed, whereas in the others there was some infiltration and erythema. The four patients who had healed after 3–4 days were found to show the most rapid improvement in other lesions treated with UVB or anthralin.

When treating psoriasis on the elbows and knees we found it best to apply the Actiderm in two parts. A small horizontal rim of non-healed psoriasis was commonly seen in the interface, but was covered the next week. Actiderm could also be applied on the fingers, but here the lesions were more difficult to heal than the plaques elsewhere. On the soles and heels Actiderm adhered well and did not usually loosen if covered with a disposable cotton stocking.

Relapses of the treated psoriatic lesions occurred after 4–8 weeks in most patients unless some preventive treatment with anthralin, corticosteroids or UVB irradiation was given once or twice weekly.

In the two patients with discoid LE the lesions were less obvious when covered with Actiderm than before. The patients improved markedly within one week and after 2 and 3 weeks, respectively, the lesions were clinically healed. Relapses were seen after 2 and 3 months. The patients with lichen planus, neurodermatitis, chronic lichenified eczema and necrobiosis lipoidica all showed marked improvement after 2 weeks and the lesions were considered healed after 3 weeks. No side effects such as infections or local atrophy were noted during 2–3 weeks of treatment.

Patients' opinions

Actiderm was well accepted by the patients and easy to apply and wear. Care must be taken, however, to see that the skin is not greasy from previous treatment with ointments. For the patients it is psychologically very important to find that the lesions can disappear quickly. Another advantage is that Actiderm only has to be applied once a week. Although they took a shower or a hot bath daily the Actiderm remained intact. Two patients who had been sunbathing found that when the Actiderm was very hot it became sticky and almost melted. When they had left the sun, with the Actiderm still in place, it looked normal again after 10–20 minutes. If the patients are treated with UV irradiation the Actiderm-treated area does not pigment. Care must be taken not to burn this area when UVB treatment is continued without Actiderm.

DISCUSSION

Occlusion with a thin plastic dressing such as Saran wrap in steroid-responsive dermatosis is known to induce rapid healing when used in combination with potent corticosteroids. Formerly such dressings were usually changed daily. They are inexpensive but have the disadvantage that they easily tear off when fastened with various tapes, unless an elastic adhesive bandage is applied over the wrap, which can be done around the arm or leg. Such treatment was tested in some patients and could be left in place for 3 days. It was effective, but the patients all preferred the skin-coloured and easily applicable Actiderm.

In psoriasis we found no advantage of using the most potent corticosteroids such as clobetasol under Actiderm. Betamethasone and triamcinolone seemed, as used by us, to have equally good effects in psoriasis. A clear effect was also seen here after use of 1% hydrocortisone, but this did not induce healing as well as the other corticosteroids. Actiderm alone has been reported to improve psoriasis (1). In a multi-centre study some healing was observed after 10 weeks of Actiderm treatment (2). The combination with corticosteroids is much more effective. The Actiderm method can also be used to study the effects of new potential anti-psoriatic drugs. Of the old treatments, crude coal tar and anthralin were tested on some psoriatic plaques under Actiderm for a week. The tar-treated area showed an improvement, whereas anthralin in the formulation used had no definite

effect, probably because it was inactivated to coloured products within 2 days.

In dermatoses such as lichen planus, neurodermatitis, discoid LE and necrobiosis lipoidica, the effect of 0.1% betamethasone valerate with Actiderm was also most impressive, but the duration of treatment time has to be prolonged.

Treatment of Psoriasis with a New UVB-Lamp

O. LARKÖ

Department of Dermatology, University of Göteborg, Sahlgrenska Sjukhuset, Göteborg, Sweden

Twenty-nine patients with psoriasis took part in a study which compared the therapeutic effect of Philips TL12 with a new narrow-band UVB lamp (Philips TL01). The patients were treated on an out-patient basis and treatments were given 3–5 times weekly for a maximum of 8 weeks. The study was conducted in a randomized left–right double-blind fashion. The total score on the TL01-side decreased rather more than on the TL12-side. Eleven patients preferred the TL01 lamp and one the TL12-side, whereas 17 patients had no preference. One of the drawbacks with the new lamp is that radiation times are almost doubled.

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O. Larkö, Department of Dermatology, University of Göteborg, Sahlgrenska Sjukhuset, S-413 45 Göteborg, Sweden.

Treatment of psoriasis with UVB irradiation is convenient for the patient, cheap, and reasonably safe (1, 2). Fischer et al. found 313 nm to be the most effective wavelength for the treatment of psoriasis (3, 4). Parrish & Jaenicke demonstrated that the psoriasis action spectrum closely resembles the erythema action spectrum above 300–305 nm (5). Omitting the radiation below this wavelength region ought to be advantageous.

In a recent study, van Weelden et al. found a new sunlamp to be superior to the old equipment in a limited number of cases (6). Using Ingram treatment, the lamp has also been found to be more useful than the old equipment (7).

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In a left–right comparison study we have evaluated the effect against psoriasis, using the new narrow-band lamp (Philips TL01) and compared it with the regular UVB equipment (Philips TL12).

MATERIAL AND METHODS

Twenty-nine patients took part in the study; 21 females and 8 males. The median age was 35 (range 19–76) years, the median duration of their psoriasis, 10 years (range 0–36 years). The average area of the body covered with psoriasis (calculated by the rule of nine) was 57%.

Equipment

The two types of fluorescent lamp were housed in four separate holders supplied by ESSHÄ Electrical Products, Sweden. Each holder contains three lamps. Patients were irradiated from the left- and right-hand side with 6 TL01- and 6 TL12-lamps, respectively, in randomized order. Using an International Light radiometer with a SED240 probe, the irradiance on the TL01 side was 0.07 mW/cm² and on the TL12 side, 0.7 mW/cm². The different emission spectra for TL01 and TL12 are shown in Fig. 1.

Treatment regime

The study was conducted at the Department of Dermatology, University of Göteborg. The patients were treated on an out-patients basis and came for evaluation every second week. Treatment was given three to five times weekly, for a maximum of 8 weeks. The study was conducted during autumn and winter in order to avoid disturbing influence from natural sunshine. No concomitant psoriasis therapy was allowed, except for emollients. The irradiation doses were increased according to the response of the patient, i.e. increased until a slight erythema developed. For practical reasons, the maximum irradiation time was set to 30 min.