PSORIASIS TREATED WITH TOPICAL FLUOCINOLONE ACETONIDE AND OCCLUSIVE DRESSINGS

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The treatment of psoriasis by the topical application of adrenal corticosteroid compounds has in the past proved disappointing. It has been noted, however, that these corticosteroid compounds were of real benefit when applied to intertriginous psoriatic lesions, and this was confirmed by Mauray and Schiff (1962) using fluocinolone acetonide. The superiority of fluocinolone acetonide 0.025% as a local medicament compared with hydrocortisone 1%, in dermatoses responding to the latter, has been reported by a number of authors, including Robinson (1961) in the U.S.A. and Samman and Beer (1962) in this country.

Scholtz (1961a, 1961b), using fluocinolone acetonide 0.025% ointment, occluded with waterproof "polythene" film dressings, reported favourable results in the treatment of psoriasis and other dermatoses, while Sulzberger and Witten (1961) had similar results with flurandrenolone ointment. Clearance of psoriatic lesions, to which this technique was applied, was reported by these authors. Overton (1963) stimulated interest by his report on a large number of patients treated with this technique, their lesions being smeared with fluocinolone acetonide ointment and covered with polythene occlusive dressings for periods of three days. Hall-Smith (1962) confirmed the immediate good response of psoriatic patients to this method.

The purpose of the investigation described below was to study in detail results of this treatment applied to the skin surface affected by psoriasis, apart from the face, in a series of in-patients, and to follow their progress after discharge from hospital.

Materials and Methods

Twenty-seven patients (15 male, 12 female) with long-standing and extensive psoriasis were referred for a routine course of in-patient treatment. No selection was made regarding age or sex. Ages ranged from 12 to 67 years. The length of history of psoriasis was from 2 to 52 years.

A chart was prepared on admission showing the extent and distribution of psoriatic lesions; comparison with this was made when the clinical state was reviewed at monthly follow-up visits.

Fluocinolone acetonide 0.025% in bland paraffin and hydrogenated lanolin base was applied thinly to all psoriatic lesions. The whole body with the exception of the face and neck was occluded with polythene held in place with stockinet and hypo-allergic tape (Hinders Z.O. adhesive plaster) (see Fig.); the scalp was similarly treated. Polythene gloves were used on the hands, and the facial lesions were treated with the same ointment without occlusion. The polythene occlusive "suit" (see Fig.) was worn for three days. We found that approximately six 15-g. tubes of ointment were needed for each treatment of an adult patient. Flexible polythene, 6-8-in (15-20-cm.) tubes, gauge 120, was used for dressing legs and arms, and polythene sheeting of a somewhat finer texture was suitable for dressing the trunk.

Fluocinolone acetonide ointment was applied under a suit of polythene; the suit was retained for three days and then renewed after a bath containing ung. emulsificans B.P. and reapplication of ointment. This three-day treatment was repeated until the patient was clear of psoriasis, or up to a maximum of seven suits (21 days). If the psoriatic lesions were not cleared in three weeks the treatment was regarded as having failed. In all, 27 patients were treated—11 with the above regime, using fluocinolone acetonide alone under polythene occlusion. Staphylococcal folliculitis occurred in 8 of these 11 patients. Chlorhexidine dihydrochloride 2% ("hibitane") was accordingly added to the ointment when treating the remaining 16, and 60 ml. of 1% chlorhexidine digluconate was used in the bath taken by these patients at the end of each three-day application.

After the psoriasis had been cleared the patients were discharged and instructed to use tar paste on any recurring lesion; they were then reviewed at monthly intervals over the subsequent three months.

Previous workers (Mauray and Schiff, 1962) regarded a residuum of slight erythema and/or hyperpigmentation or depigmentation as being satisfactory criteria of clearance of the original scaling lesions. We adopted these criteria in our series.

Biopsy of lesions in three patients at the stage of clinical clearance, as defined above, showed no features diagnostic of psoriasis.

Of the 27 patients, 20 were cleared of all psoriatic lesions. In seven the skin condition was deemed not to be clear, but in six of them this failure to clear was attributed to the staphylococcal folliculitis.

Failure of Treatment; Complications

A few staphylococcal follicular (pustular) lesions were noted in nine patients after two or more suits had been applied. The degree of infection was not serious and the lesions resolved before completion of the course of treatment. Seven patients in this group were treated with fluocinolone acetonide ointment alone; two patients had chlorhexidine cream added to the ointment.

In six other patients, however (Table I), the follicular reaction rapidly became widespread, and it was found that the organism was of the same phage type as that

The occlusive polythene suit.

grown from a patient in the same ward who had a chronic varicose ulcer. The treatment was abandoned in these patients, on five of whom chlorhexidine had also been used. It is significant that this problem of cross-infection was not noted in other patients being treated without polythene occlusion in the same ward.

The seventh patient (Table I) had no complications but his psoriasis failed to clear completely after three

TABLE I.—*Response to Treatment*

Number treated	27
Failed to clear completely*	7
Cleared completely on discharge	20

* Six patients developed infection with staphylococci.

weeks' treatment with polythene, fluocinolone acetonide, and chlorhexidine, although an initial improvement was noted after two or three applications.

Five patients developed a sweat-retention type of rash. Two of these had fluocinolone acetonide without chlorhexidine and three had chlorhexidine added to the ointment.

In the first 11 patients treated with fluocinolone acetonide and polythene, three developed a purpuric rash on the upper and lower limbs, not related to constriction from polythene or tape. Hess's test was negative and the blood count was normal. A biopsy revealed nothing of diagnostic significance.

One patient developed an eczematous type of reaction over previously normal skin on the back after two applications of fluocinolone acetonide and polythene.

Seven patients had no complications at all—two in the fluocinolone acetonide and polythene group and five in the fluocinolone acetonide, chlorhexidine, and polythene group.

During treatment and at subsequent monthly examinations it was noted that areas of skin affected by folliculitis, purpura, and eczematous reactions subsequently developed psoriasis, and in one patient a Köbner reaction developed on that part of the skin which had been in contact with adhesive tape used to secure the polythene dressings.

Follow-up of Patients Cleared of Psoriasis

According to our criteria 20 patients were cleared of psoriasis. The average duration of treatment was 15 days. After discharge from hospital the patients were seen at monthly intervals. The area of psoriatic skin seen on admission had already been charted and rated at 100%. The area affected (including lesions on new sites) was compared at the follow-up with the original and the degree of relapse recorded (Table II). Patients showing 30% or more recurrence were not asked to attend further, and were given alternative treatment. This policy was pursued at each monthly follow-up, and at three months there were only five patients with 30% relapse or less.

TABLE II.—*Follow-up of 20 Patients Cleared of Psoriasis*

Recurrence of Area of Psoriasis	Time after Discharge		
	1 Month	2 Months	3 Months
Over 30%	6	12	15
10%–30%	5	2	4
Less than 10%	9	6	1

Discussion

This trial has confirmed previous reports that it is possible to clear patients with extensive psoriasis by the

use of topical fluocinolone acetonide ointment and occlusive dressings. The likelihood of cross-infection from a patient with an infected leg ulcer in our ward was considerable. This risk could probably be reduced by using occlusion for shorter periods or by an out-patient regime. There is some evidence that the use of an antiseptic with fluocinolone acetonide lessens the risk of minor degrees of folliculitis, but it does not influence the progress of gross skin infection.

A considerable degree of relapse occurred on ceasing the treatment. Areas of previous folliculitis were especially prone to develop psoriatic lesions.

We have subsequently treated six patients with fluocinolone acetonide and chlorhexidine applied for 48 hours under polythene occlusion and then continued with the conventional dithranol therapy. This seems to offer good immediate results with less tendency to relapse after cessation of treatment, and the problem of secondary infection has not occurred.

Summary

Twenty-seven patients with long-standing and extensive psoriasis were treated with 0.025% fluocinolone acetonide ointment applied to all psoriatic areas and occluded with polythene sheeting for repeated periods of three days until the patient was completely clear according to our criteria or up to a maximum of seven applications.

Treatment was abandoned in one patient because of failure to respond after seven applications.

Treatment was abandoned in six patients owing to extensive folliculitis due to a cross-infection from a patient with a leg ulcer.

Twenty patients were cleared of all psoriatic lesions.

After three months all but five patients showed a relapse to an extent greater than 30% of the original area of skin affected with psoriasis.

This occlusive technique may well be used with advantage to augment treatment by more conventional methods such as dithranol or tar therapy. Initial treatment with fluocinolone acetonide and occlusion followed by dithranol therapy has proved of benefit in ten patients.

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REFERENCES

- Hall-Smith, S. P. (1962). *Brit. med. J.*, **2**, 1233.
 Mauray, J. T., and Schiff, B. L. (1962). *J. invest. Derm.*, **38**, 321.
 Overton, J. (1963). *Trans. St John's Hosp. derm. Soc.* In press.
 Robinson, H. M., jun. (1961). *Arch. Derm.*, **83**, 149.
 Samman, P. D., and Beer, W. E. (1962). *Brit. J. Derm.*, **74**, 3, 96.
 Scholtz, J. R. (1961a). *Calif. Med.*, **95**, 224, 6 (footnote).
 — (1961b). *Arch. Derm.*, **84**, 1029.
 Sulzberger, M. B., and Witten, V. H. (1961). *Ibid.*, **84**, 1027.

The Ministry of Health has endorsed a report on the artificial lighting of hospital wards produced by a joint committee of the Medical Research Council and the Building Research Board, and has recommended that Regional Hospital Boards and Boards of Governors should be guided by it, particularly in the planning of new buildings.