TOPICAL MANAGEMENT OF ATOPIC DERMATITIS BY DEMECLOCYCLINE AND TRIAMCINOLONE OINTMENT

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Atopic dermatitis is a characteristic hereditary skin disease of undetermined etiology. During the last several years however, atopic dermatitis has been viewed as being casually associated with some abnormality of the autonomic nervous system, especially of the sympathetic division. Adult atopic dermatitis is a fairly common clinical condition met with in our country. There is no single specific therapy available for this dermatological problem which poses a challenge to the clinician. Thus, the search for newer topical agents for the management of adult atopic dermatitis still continues. One such topical agent, Declocort* containing demeclocycline and triamcinolone acetonide in a lanoline and white petrolatum base was made available to us for a clinical trial.

Method and Materials

A total of thirty indoor patients, male and female, admitted to the Dermatology Wards of Osmania General Hospital, Hyderabad, Andhra Pradesh,were taken up for this trial. All cases were screened for the typical "atopy triad", rhinorrhoea, asthma and eczema, either in the patient or his relative. Unfortunately, for reasons beyond our control, only 17 patients (15 males and 2 females) completed the trial and were available for follow-up examinations. This paper is therefore based on our experiences in these 17 cases.

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On admission, a complete clinical examination was made; a histopathological specimen as well as a clinical photograph was taken before the commencement of the treatment as well as after treatment. The lesions met with in the cases examined are indicated in Table I.

The duration of these lesions before treatment was commenced, varied from 1 month to 4 years (Table II). Declocort ointment was applied topically either with a dressing lightly tied, or if the lesions were fairly dry, without a dressing. Four to five applications of the drug were made daily. Treatment was given for a period of 1 to 9 weeks with an average period of 3 weeks.

Oral antibiotics and steroid were used in some of the cases as and when required.

For an objective assessment of the effects of the drug, the severity of the skin lesions was arbitrarily graded as follows: O indicates no lesion; +, macular lesion without lichenification : ++, papular lesion with lichenification; +++, papular lesion with lichenification and slight oozing; ++++, papular lesion with marked lichenification and severe oozing (Table II).

In order to determine the antipruritic effect of the drug, pruritis was arbitrarily graded as follows: ++++, indicates degree of itching before treatment; +++, 25 percent relief; ++, 50 per cent relief; +, 75 per cent relief; 0, 100 per cent relief (no pruritis) (Table II).

TABLE I

No. of Cases	Site of Lesion	Nature of Lesion
2	Dorsum of hand	Discoid
3	Ante cubital fossae	Papular acute dermatitis of the atopic type
1	Ankle	Infected eczematoid changes - irregularly circular
2	Thigh	Irregular large coin-shaped lesions
3	Dorsum of foot	Discoid pigmented lichenified
1	Forearms and arms	Papular and maculopapular, small circinate
1	Elbows and forearms	Infected papular discoid pruritic lesions
1	Face and neck	Sides of face and neck-irregularly macular
1	Posterior leg and ankle	Diffuse small circular lesions
1	Sides of leg	Discoid lesions - multiple
1	Above the elbow	Irreuglarly circular 4" in size

TABLE II

Case No.	Name	Age in Yrs.	Sex	Duration of Illness	Duration of treatment in days	Skin Lesion		Pruritis		Overall response
						Before treatment	After treatment	Before treatment	After treatment	
1	G.K.	26	M	1 year	12 days	++	+	++++	+	+++
2	S.	28	M	2 mths.	15 ,,	+++	+	++++	++	++++
3	S.S.	22	F	1 year	11 ,,	++	+	++++	+++	++++
4	Y.	30	M	3 mths.	20 ,,	+++	+	++++	+	++
5	A.B.	20	F	4 years	14 ,,	++++	++	++++	++	++++
6	B.A.	40	M	3 mths.	8 ,,	+++	+	++++	+	++++
7	S.A.	70	M	2 years	9 ,,	++	+	++++	+++	+++
8	S.L.A.	20	M	6 mths.	11 ,,	+	0	++++	+	++++
9	M.S.P.	22	M	6 mths.	8 ,,	++++	++	++++	+	++
10	K.	45	M	2 mths.	9 ,,	+++	+	++++	++	++++
11	K.	20	M	1 year	6 ,,	+++	+	++++	+	++
12	S.	42	M	3 mths.	27 ,,	++++	++	++++	+	++
13	G.	43	M	3 mths.	35 ,,	++++	++	++++	0	++
14	L.R.	20	M	2 mths.	12 ,,	++++	++	++++	+	++++
15	P.R.	27	M	4 mths.	12 ,,	+	0	++++	+	++++
16	N R.	26	M	1 year	18 ,,	+++	+	++++	++	++
17	N.	30	M	3 years	11 ,,	+++	+	++++	+	++

Results

The response to the topical application of the drug at the end of the scheduled period of treatment was evaluated on the following basis: ++++, almost cured: +++, markedly improved (75 per cent); ++, moderately improved (50 per cent); +, slightly improved (25 per cent); nil, no improvement. The results obtained are shown in Table II.

Before treatment, all cases had erythematous, vesiculo-pustular coin sized or crusted lesions. Subjectively, all signs like vesiculation, papulation, encrustation and erythema improved on an average in about 2 weeks of application. Smarting and pruritis also improved along with clinical improvement. The preparation had a remarkable anti-pruritic effect which was evident on the fourth day of treatment. As seen from the table, all patients showed improvement, in 10 of the 17 patients improvement was over 75 per cent.

Histologically, before treatment, all 17 cases showed intact epidermis with the dermis showing hyperemia, hemorrhage and oedema of the dermal papillae at the dermo-epidermal junction with mild lymphocytic or round cell infiltration along the blood vessels. In one case there were mononuclear cells. The dermal adnexa was atrophied in some cases. In one case there was moderate to mild hyperplasia and hyperkeratosis; in another the stratum corneum was poorly formed and there was moderate acanthosis with elongation of the retepegs with pigmentation of the basal cells.

At the end of treatment - about 2 weeks, - five cases showed a normal histological appearance. In others, hyperkeratosis and parakeratosis was seen. The deeper dermis showed arteriolar walls to be thickened whilst the venules were thinned. The cellular infiltrate was markedly reduced in almost all the cases. There was neither spongiosis nor vesicle formation.

The clinical photographs showed remarkable improvement which compared very well with the histological improvement and was present in more than 50 per cent of the cases (Figs. 1 to 5).

No untoward effects were observed in any patient. No local sensitization reactions were observed, nor were effects of systemic absorption of steroids from the skin area observed in any of the cases. Haematological, urine and stool examinations were normal in almost all the cases except for the presence of albuminuria in 5 cases.

The number of declocort tubes (5 Gm. each) required for amelioration of the skin symptoms ranged from three tubes in localized nonextensive lesions to about five in fairly extensive lesions.

Discussion

The word "atopy" has been used to denote a frequently inherited tendency to develop eczema, asthma, hay-fever and the term "atopic dermatitis" to describe the flexural and other types of acute, sub-acute and chronic dermatitis often shown by these types of individuals. The skin of these individuals react far more readily than the normal person to various types of antigens and is unduly sensitive to all specific and non-specific exogenous and endogenous stimuli, minor trauma, extremes of temperature, humidity, sunlight, cold winds and neurogenic stimuli. There is also an abnormal and excessive vasoconstrictor response of the cutaneous blood vessels of the patient with atopic dermatitis. This response may be due to the catecholamines.

Declocort ointment in this clinical trial has emerged as having a definite "triple action". It appears to be anti-inflammatory, decongestant and anti-pruritic. The micropulverization of its active ingredients and the anhydrous lanoline base regenerates the epidermal cells very rapidly and quick relief is obtained. There may also be another unknown factor which may be the immunological factor which may act on the skin cells whose synergistic action alone can be said to be the cause for the rapid recovery seen in all the cases in this trial. It is significant to note that topical application of Declocort is a valuable medicament which produces both subjective and objective improvement in the shortest possible time in various types of atopic dermatitis, since the duration before treatment in three cases ranged from 4, 3 and 2 years respectively and in 4 cases was of 1 year's duration with recovery on an average within 3 weeks of treatment. It is significant to note that no side-effects could be ascribed to the use of Declocort ointment. In no case in the series under trial has there been any signs of systemic absorption of steroids from the skin nor was any local sensitization reaction observed.

Fig. 1 (a)

Before treatment. Discoid coinshaped lesion on dorsum of hand.

Fig. 1 (b)

After treatment. Marked regression and improvement of lesions

Fig. 2 (a)

Before treatment. Pingmented, multiple papules exuding serum over both forearms and elbows

Fig. 2 (b)

After treatment. Note marked improvement

Fig. 3 (a)

Before treatment. Pigmented lichenified papules over the flexures and antecubital fossa

Fig. 3 (b)

Aftea treatment Note marked improvement

Before treatment

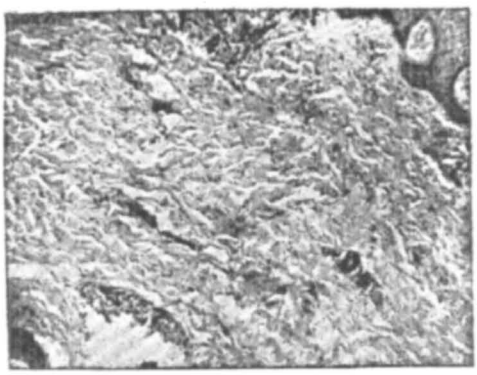

Fig. 4 (a)

Biopsy specimen under low power showing intact and normal looking epidermis beneath which the dermal papillae and deeper dermis show marked oedema and round cell infiltration

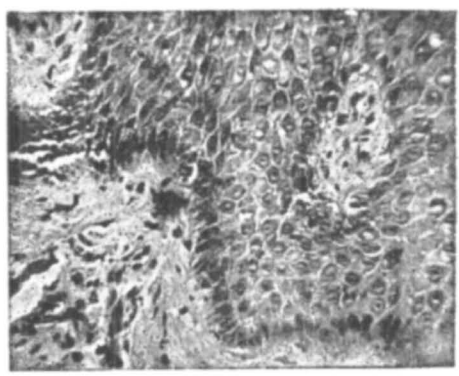

Fig. 4 (b)

A high power of (a) showing normal looking epidermis; the dermal oedema and round cell infiltration are well brought out

After treatment

Fig. 4 (c)

Biopsy specimen under low power showing healing of the small superficial ulcerated Part. The oedema of the dermis is shown as having been absorbed, revealed in the picture as empty spaces. The dermal infiltrate is less marked. The heavy perivascular infiltration is not seen

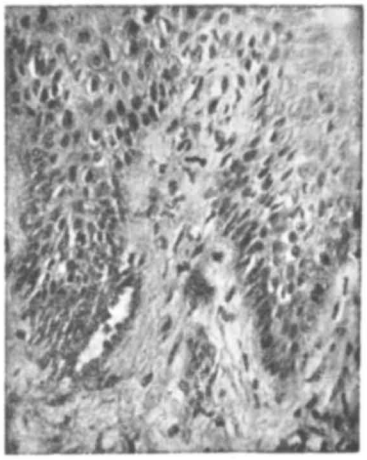

Fig. 4 (d)

A high power view of (c) showing the same histological reparative changes. The perivascular infiltration is much less

Fig. 5 (a)

Before treatment. A low power view showing stretching of the stratum corneum. Mild hyperkeratosis, irreguiar acanthosis and intradermal vesicles are seen. Note the marked oedema in the dermis with pronounced round cell infiltration in the dermal region and similar infiltration around the perivascular region

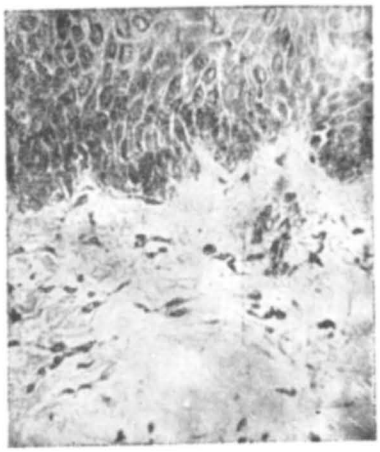

Fig. 6 (b)

After treatment. A high power view showing mitotic activity of the basal layers of the epidermis. There is absence of the focal acanthosis and inflammatory oedema, the latter being evident as vacant space in the dermis. There is few round cell infiltration in the upper areas. Marked reparative process is seen which is rapidly settling

Summary

1. Seventeen cases of various types of atopic dermatitis were treated by topical application of an ointment containing demeclocycline and triamcinolone acetonide in a lanolin and white petrolatum base.

2. Results were assessed clinically, subjectively and histologically (biopsy specimens).

3. All patients improved; in 10 of the 17 patients, the clinical improvement was over 75 per cent.

4. The ointment had a remarkable antipruritic effect which was evident on the fourth day of treatment.

5. No untoward effects were noticed.

Acknowledgment

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TRUE or FALSE?

Cytarabine has been found to be useful against DNA viruses and has been used in the treatment of Hautarzt zoster.

(Answer page No. 212)