

PRELIMINARY AND SHORT REPORT

EFFECT OF PERCUTANEOUS ABSORPTION OF METICORTELONE ON THE EOSINOPHILE COUNT*

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Percutaneous absorption of hydrocortisone through normal skin was demonstrated by Malkinson and Ferguson (1) by the detection of radio activity in the urine following topical application of hydrocortisone 4C incorporated in an ointment base. Smith (2) noted no change in circulating eosinophile counts following a single inunction of hydrocortisone acetate in ointment base into the skin of each of 8 normal subjects and 7 patients with generalized skin diseases. It is known, however, that adreno-cortico-tropic hormone (ACTH), cortisone, epinephrine and insulin can cause eosinopenia. Henry, Oliner and

TABLE
Eosinophile count before and after Meticortelone inunctions

Case No.	Age	Diagnosis	Count Before	Count After	Change
1	55	Eczema (chronic)	156	100	-56
2	68	Neurodermatitis disseminata	33	39	+6
3	40	Eczema (localized)	112	100	-12
4	45	Neurodermatitis disseminata	56	56	0
5	67	Psoriasis	22	11	-11
6	13	Eczema (atopic)	100	22	-78
7	65	Pemphigus	78	67	-11
8	46	Stasis Eczema Leg	56	44	-12
9	42	Lichen Simplex Chronicus	100	123	+23
10	23	Eczema (general)	257	178	-79
11	66	Sulzberger-Garbe	117	112	-5
12	27	Eczema (atopic)	22	22	0
13	67	Contact Dermatitis	22	22	0
14	46	Neurodermatitis disseminata	22	16	-6
15	37	Exfoliative Dermatitis	202	67	-135
16	51	Eczema (widespread)	246	78	-168
17	22	Eczema (atopic)	94	53	-41
18	29	Eczema (widespread)	272	200	-72
19	51	Eczema (recurrent)	67	67	0
20	50	Psoriasis	22	22	0

Ramey (3) have shown that the C-11 oxysteroids given intramuscularly and intravenously with epinephrine in small doses produces an eosinopenia in adrenalectomized dogs. Experiments in animals (4) have shown that inunction of Meticortelone ointment can cause eosinopenia.

The authors selected 20 patients confined to The Skin and Cancer Hospital with various dermatoses to observe the effect of inunctions of Meticortelone ointment† on the circulating

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eosinophile count. Two ounces of 0.5 per cent of Meticortelone ointment were rubbed into one quarter of the skin surface including the affected and non-affected skin of these patients daily after first determining the eosinophile count per cubic millimeter of capillary blood. Four hours later a second count was made. The findings are shown in the Table.

Study of the Table reveals that in every patient—with one exception—showing an eosinophile count of 100 or more, there was a drop in the number of eosinophiles within a period of four hours following inunction of Meticortelone ointment.

In order to prove that the Meticortelone is responsible for the drop in the circulatory eosinophile count, a patient with generalized pruritus and an eosinophile count of 224 was anointed in the identical way with the ointment base alone. Four hours later the circulatory eosinophile count was identical.

SUMMARY

Inunctions of 0.5 per cent Meticortelone ointment into one-quarter of the body surface resulted in a fall in the eosinophile count in a period of four hours in all but one patient having 100 or more eosinophiles per cubic millimeter of blood.

REFERENCES

1. MALKINSON, F. D. AND FERGUSON, E. H.: Percutaneous absorption of hydrocortisone in two human subjects. *J. Invest. Dermat.*, **25**: 281, 1955.
2. SMITH, C. C.: Failure to demonstrate absorption of hydrocortisone when applied topically to the human skin. *Ann. New York Acad. Sc.*, **61**: 517, 1955.
3. HENRY, W. L., OLINER L. AND RAMEY, E. R.: Relationship between actions of adrenocortical steroids and adrenomedullary hormones in production of eosinopenia. *Am. J. Physiol.*, **174**: 455, 1953.
4. *Loc. Cit.* unpublished.