We thank Dr. Rosemary Biggs for confirming the diagnosis in Case 2.

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Preliminary Communications

Double-blind Trial of Betamethasone

Topical applications of steroids have been recognized as effective in the control of numerous dermatoses since the introduction of local hydrocortisone by Sulzberger and Witten (1952). There have been many attempts to find more potent local steroids (Vickers and Tighe, 1960) or to reduce the cost of such treatment (Inman, 1959). This paper reports experience with a new topical steroid, betamethasone (16-β-methyl-9-α-fluoro-prednisolone), and presents the results of double-blind paired comparison trials of the new steroid and hydrocortisone. The betamethasone was supplied in two forms—the relatively insoluble free alcohol and the readily water-soluble phosphate ester. In the double-blind comparison trials betamethasone phosphate was compared with hydrocortisone and, in addition, the two forms of betamethasone were compared directly. The new steroid is approximately 20% cheaper than hydrocortisone.

INVESTIGATION

Double-blind Trials.—(1) Betamethasone phosphate and hydrocortisone: Only patients with eruptions which might be expected to respond to local steroid therapy were admitted to the trial and all had symmetrical lesions on the limbs. The two steroids were supplied in a water-miscible base and in identical tubes labelled B (blue label) and Y (yellow label). The concentration of hydrocortisone was 1% and that of betamethasone phosphate 0.1%. Only the manufacturer was aware of the identity of the tubes until the trial was completed. The patients were supplied with a tube of each steroid and instructed to apply Y to one limb and B to the other. The side treated with B was selected at random. If all four limbs were involved then B was applied to one upper limb and the contralateral lower limb, thus giving two paired results on one patient. Subjective and objective observations were made from five to ten days after entering the trial. Whenever possible two observers reviewed each patient, and care was taken that the reviewer was not aware of the side of application of B and Y till the assessment had been made. (2) Betamethasone phosphate and betamethasone alcohol: This trial was conducted under identical conditions to the first trial, except that the steroids were supplied in a greasy base and the tubes were labelled A and B. Both the betamethasone phosphate and the betamethasone alcohol were used in a concentration of 0.1%.

Clinical Use of Topical Betamethasone.—In addition to the double-blind trial, betamethasone was used topically as a lotion, a non-greasy cream, or a greasy ointment in the treatment of 52 other patients without symmetrical lesions but who were thought likely to respond to local steroid treatment.

RESULTS

Double-blind Trials.—(1) Betamethasone phosphate and hydrocortisone: Thirty-eight patients were admitted to the trial. The results are shown in Table I. When a difference was noted between the effect of betamethasone phosphate 0.1% and hydrocortisone 1% it was very slight. (2) Betamethasone phosphate and betamethasone alcohol: Fifty-two patients were admitted to this trial; the results are shown in Table II. Once again the differences noted were slight.

TABLE I

Dermatosis	No. of Cases	Pairs	Betamethasone Phosphate (B) Better than Hydrocortisone (Y)	Hydrocortisone (Y) Better than Betamethasone Phosphate (B)	No Difference
Atopic eczema ..	23	34	13	10	11
Discoid ,, ..	4	5	1	2	2
Seborrhoeic ,, ..	4	4	2	2	0
"Autosensitization eruptions" ..	7	7	1	0	6
Total ..	38	50	17	14	19

TABLE II

Dermatosis	No. of Cases	Pairs	Betamethasone Phosphate Better than Betamethasone Alcohol	Betamethasone Alcohol Better than Betamethasone Phosphate	No Difference
Atopic eczema ..	36	42	14	10	18
Discoid ,, ..	5	5	1	1	3
Seborrhoeic ,, ..	1	1	0	0	1
Lichen simplex ..	1	1	0	1	0
Contact dermatitis (fabric) ..	2	3	0	3	0
"Autosensitization eruptions" and eczema (unspecified)	7	7	0	2	5
Total ..	52	59	15	17	27

Clinical Use of Topical Betamethasone.—The 52 patients in whom the new steroid topical preparations were used as routine treatment were mainly suffering from atopic eczema (23), contact dermatitis (16), or ano-genital pruritus (9). The results of treatment were little different from those seen with local hydrocortisone in similar cases, though, contrary to the results of the double-blind trials, certain patients with very chronic dermatoses found local betamethasone more effective than local hydrocortisone or even triamcinolone.

DISCUSSION

The results of the double-blind trials show that betamethasone—as either the phosphate or the free alcohol, both at concentrations of 0.1%—is an effective local steroid with a potency equal to that of 1% hydrocortisone. Day-to-day use of the betamethasone local applications in another group of patients has confirmed this impression. It seems possible that those

patients who responded better to betamethasone than to hydrocortisone or triamcinolone did so because of the development of partial resistance to those steroids after prolonged use: this phenomenon has been observed before (Vickers and Tighe, 1960). In patients with chronic dermatoses, especially those with atopic eczema, such variations of local steroid therapy may be very helpful in maintaining reasonable control of an otherwise disabling condition. No adverse reactions have been seen to the preparations tested.

SUMMARY

Double-blind paired comparison trials of topical applications of a new steroid, betamethasone, and hydrocortisone are described, together with results of more extensive clinical use.

In this investigation betamethasone phosphate 0.1% and hydrocortisone 1% were shown to be of equal potency.

I thank Drs. I. B. Sneddon and R. E. Church for permitting me to treat their patients, and Glaxo Laboratories for supplies of the various local steroid applications; 1% hydrocortisone ("efcortelan"), 0.1% betamethasone phosphate ("betnesol"), and 0.1% betamethasone alcohol ("betnelan").

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Medical Memoranda

Entamoeba histolytica in Urine

Amoebae are rarely found in urine (Chatterjee, 1952). A search through the *Quarterly Cumulative Index Medicus*, the *Current List of Medical Literature*, and the *Index Medicus* of the last five years revealed only one report of amoebae in the urine (Gras *et al.*, 1956). The earliest record is by Baelz (1883), who identified amoebae in a catheter specimen from a Japanese woman. Craig (1911) found amoebae in the urine of a patient in whom a recto-vesical fistula was subsequently discovered at necropsy. Walton (1915) found them in the urine of an Indian male. These, as well as the cases reported by Macfie (1916) and De Mello (1931), appear authentic to Watson (1945b), who critically reviews the problem of urinary amoebiasis and cites 107 references. Manohar (1936), from this part of India, reported a case of urinary amoebiasis in a 27-year-old woman 20 days after delivery; the evidence, however, was somewhat equivocal (Watson, 1945b). We publish below the report of a case.

CASE REPORT

A 14-year-old village boy came to the out-patient department of the S.S.G. Hospital, Baroda, on June 30, 1959, complaining of burning micturition, purulent discharge, and inability to retract the prepuce. He had acquired the above complaints three months previously after rectal intercourse with another male. On examination a blood-stained purulent discharge per urethra was found soiling his clothes. An adherent and painful phimosis was present. No stricture was palpable. The penile urethra was moderately tender. Scrotal, testicular, and per-rectum examination revealed no abnormality. The left inguinal glands were enlarged, firm, tender, and non-suppurating. There was no other significant abnormality.

Laboratory Findings.—Fresh urine was repeatedly examined during his stay of four days in hospital. A catheter specimen was collected only once because of the difficulty in negotiating the catheter through the painful urethra. Microscopical examination of centrifuged urine invariably revealed progressively motile amoebae of about 40 microns in size. Many contained from one to six erythrocytes. Besides the amoebae there were many erythrocytes and from 20 to 30 pus cells per field (high-power). There were fewer amoebae, erythrocytes, and pus cells in the catheter or mid-stream specimen of urine than in the urine collected as a whole. Amoebae were plentiful when urethral discharge collected by directly milching the penile urethra was examined. A fair number of Gram-negative bacilli and a few Gram-positive cocci in groups were found on examination of stained smears of the deposit.

Repeated stool examination by the direct method as well as by three different concentration methods revealed no cysts or vegetative forms of *Entamoeba histolytica*. Thymol turbidity and alkaline phosphatase were within normal limits. Kahn and V.D.R.L. tests were negative.

The patient was treated with local fomentations. Three injections of procaine penicillin were given intramuscularly (400,000 units daily). The patient absconded after four days' stay in hospital and attempts to locate him have failed.

DISCUSSION

The initial diagnosis of urinary amoebiasis in this case was confirmed by subsequent examination in the out-patient laboratory of urine passed under supervision. The possibility of faecal contamination was eliminated. The identification of the amoebae found as *E. histolytica* is based purely on morphological grounds. In wet preparations they were from 35 to 45 microns in size and showed progressive motility, blunt pseudopodia with clear hyaline ectoplasm, and the presence in most of them of from one to six erythrocytes as well as faintly discernible outlines of the nuclei. When stained with iron-haematoxylin the nuclei of the parasites showed a typical pattern, characteristic of *E. histolytica*. The kitten pathogenicity test, unfortunately omitted, is regarded as unreliable for the identification of amoebae in urine (Watson, 1945b). As the urine and urethral discharge were examined immediately on collection, the possibility of confusion between haematophagus leucocytes and amoebae does not arise.

Penile amoebiasis has been reported by Straub (1924), Shih *et al.* (1939), and Hermann and Berman (1942), the lesion being subsequent to rectal intercourse in at least one instance (Straub). Although Watson (1945b) discusses in detail the four different ways by which amoebae may gain access to the genito-urinary tract, he does not mention rectal intercourse. Anderson *et al.* (1953), however, discuss this mode of acquiring the infection.

Urine, even in dilutions of 1:4, has an inhibitory or lethal effect on amoebae (Watson, 1945a), thus accounting for the rarity of this finding. To explain the presence of viable amoebae in this case a prior mucosal erosion, due either to trauma or to bacteria and resulting in a