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Activities of Various Concentrations of Triamcinolone Acetonide

BLANK[1] has reported that 0·01 per cent triamcinolone acetonide, applied topically, was at least comparable in clinical efficacy with 1·0 per cent hydrocortisone, although somewhat less effective than 0·1 per cent triamcinolone acetonide, the concentration usually adopted clinically. In a larger group of cases Olansky[2] found that 0·1 per cent triamcinolone acetonide was significantly more active than the 0·01 per cent concentration, but he quoted earlier studies[3] which suggested that 0·025 per cent triamcinolone acetonide was difficult to distinguish from the 0·1 per cent concentration. Since there would be economic advantages in using a reduced concentration if this could exhibit the activity of 0·1 per cent triamcinolone acetonide in most dermatitides, we have conducted experiments to compare the effects of three concentrations of triamcinolone acetonide and 1·0 per cent hydrocortisone.

Chemical irritants such as cantharidin and volatile oil of mustard were found unsatisfactory for the production of uniform inflammation, while turpentine was considered to be possibly dangerous. It was therefore decided to use the 'Cellophane' tape method described by Wells[4] to produce a standardized trauma on the flexor aspect of the forearms of volunteers. 'Cellophane' tape, 0·5 in. wide, was smoothed on to a marked area and stripped off sharply in one direction. A fresh piece of tape was applied to the same area and stripped off in the opposite direction, this process being repeated until the surface became uniformly red and glistening. Erythema was produced in this way to a length of approximately 14 cm but only the central portion of 10 cm was used for division into control and treated areas.

Lotions containing 0·01, 0·025 and 0·1 per cent triamcinolone acetonide and 1·0 per cent hydrocortisone were prepared and packed in code-labelled containers. Measured quantities of these lotions were applied at random and under double-blind conditions to marked areas of the 'stripped' skin and were spread evenly, care being taken to avoid the control areas interposed between treated areas. By marking five areas, each 2 cm in length, it was found possible to compare three preparations simultaneously. After the lotions had been applied, the areas were examined at intervals and the responses were recorded after 2 and 6 h. The preferences at 2 h were analysed sequentially[5] with $\alpha = 0{\cdot}025$, $\beta = 0{\cdot}05$ and $\theta_1 = 0{\cdot}85$, although in some instances results continued to become available after a boundary had been crossed.

Table 1. TRIAMCINOLONE ACETONIDE (T.A.) 0·01, 0·025 AND 0·1 PER CENT COMPARED WITH HYDROCORTISONE 1·0 PER CENT (H)

T.A. concentration (per cent)	T.A. better		H better		No difference	
	2 h	6 h	2 h	6 h	2 h	6 h
0·01	13/32	14/32	9/32	8/32	10/32	10/32
0·025	15/32	21/32	6/32	3/32	11/32	8/32
0·1	17/32	23/32	5/32	0/32	10/32	9/32

Table 2. TRIAMCINOLONE ACETONIDE (T.A.) 0·01 AND 0·1 PER CENT COMPARED WITH TRIAMCINOLONE ACETONIDE 0·025 PER CENT

T.A. concentration (per cent)	T.A. 0·025 per cent better		T.A. 0·01 per cent or 0·1 per cent better		No difference	
	2 h	6 h	2 h	6 h	2 h	6 h
0·01	16/32	18/32	5/32	6/32	11/32	8/32
0·1	9/32	3/32	11/32	8/32	12/32	21/32

The total results are summarized in Tables 1 and 2.

The results read at 2 h indicate that 0·025 and 0·1 per cent triamcinolone acetonide have similar activities and that both concentrations are more active than 1·0 per cent hydrocortisone, while 0·01 per cent triamcinolone acetonide is similar in activity to 1·0 per cent hydrocortisone and less active than 0·025 per cent triamcinolone acetonide.

After 6 h the preferences for both 0·025 and 0·1 per cent triamcinolone acetonide over 1·0 per cent hydrocortisone are increased, but there are still no significant differences between these two concentrations of triamcinolone acetonide.

Wells[4] found that the effects of hydrocortisone were apparent on the 'stripped' area after about 4 h and became maximal after 12 h, but he applied the drug 3 times in 24 h if the experiment was prolonged. In our experiments, the activity of all the preparations appeared to be maximal after 2–3 h following a single application and the effects of hydrocortisone were often beginning to fade at the sixth hour.

The results obtained by the 'Cellophane' tape-stripping method support the clinical evidence that 0·025 per cent triamcinolone acetonide is indistinguishable from the 0·1 per cent concentration, although the latter may be preferred in refractory dermatoses. The experimental results also suggest that 0·025 and 0·1 per cent triamcinolone acetonide have longer, as well as greater, activity than 1·0 per cent hydrocortisone.

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Effect on the Plasma Citrate of Treatment of Primary Hypothyroidism with Triiodothyronine

DURING the course of metabolic studies on myxœdematous subjects it was noted that the plasma citrate-level was in some cases raised. In the hope that useful information might be obtained on the mode of action of thyroid hormones on tissue metabolism, the plasma citrate-level was followed during the treatment of four female patients suffering from primary myxœdema, using ordinary replacement