

ORIGINAL CONTRIBUTIONS

TACHYPHYLAXIS TO TOPICAL THERAPY WITH CLOBETASOL PROPIONATE

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Tachyphylaxis to repeated application of clobetasol propionate under occlusion was demonstrated by the seventh day of the experiment on ten healthy volunteers using histamine induced wheal suppression technique.

Key words: Tachyphylaxis, Clobetasol propionate.

Tachyphylaxis to a topically applied corticosteroid is a relatively new concept. It was first reported by du-Vivier and Stoughton¹ using the vasoconstrictor effect of McKenzie and Stoughton.² It was also demonstrated by Singh and Singh³ with fluocinolone acetonide using modified histamine induced wheal suppression technique.^{4,5} The latter technique was used to study tachyphylaxis to repeatedly applied clobetasol propionate under occlusion.

Materials and Methods

The study was performed on ten healthy volunteers aged 15 to 30 years with clobetasol

of Reddy and Singh technique.⁵ The histamine wheal test was repeated on days 2,4,6,8,10,12 and 14 of the experiment.

Results

Table I shows suppression of the histamine induced wheal volume by topically applied clobetasol propionate from the very second day of the experiment. The wheal volume decreased gradually and reached its minimum on the 6th day indicating maximum effectiveness of topical corticosteroid. Thereafter, a gradual rise in its volume reaching its pretreatment level by the 14th day of the experiment was observed.

Table I. Suppression of histamine induced wheal volume by topically applied clobetasol propionate under occlusion.

Topical preparation	Mean (\pm S.D.) volume of wheal in mm ³ on the day of experiment							
	1	2	4	6	8	10	12	14
Bland cream	52.95 \pm	53.53 \pm	53.03 \pm	52.81 \pm	52.29 \pm	53.14 \pm	52.71 \pm	52.72 \pm
(Control)	20.53	19.95	19.82	19.52	19.65	19.59	20.02	19.47
Clobetasol	53.31 \pm	15.61 \pm	5.12 \pm	0.67 \pm	6.64 \pm	17.10 \pm	34.36 \pm	50.24 \pm
propionate (0.05%)	20.27	6.71	2.18	0.36	3.01	6.81	12.93	18.74

propionate (0.05%) and a bland cream under occlusion using Singh and Singh modification⁴

Comments

Clobetasol propionate is one of the newer and undoubtedly the most potent corticosteroid⁶ being used extensively in allergic and non-infective dermatoses. The present study demonstrated the diminished efficacy of clobetasol

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propionate by the seventh day of its continuous application. Therefore, it may be suggested that the continuous clobetasol propionate therapy must be limited to a one-week duration to achieve maximum efficacy. However, it needs clinical confirmation.

References

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