Relative potencies of topical corticosteroid formulations

MADAM, We are concerned about the number of papers which have appeared during the last 3 years which draw conclusions concerning the relative potencies of topical corticosteroid formulations from a single reading of the degree of blanching produced after application of the formulation (Feather *et al.*, 1982; Gibson *et al.*, 1982, 1983; Ryatt *et al.*, 1982, 1983; Kirsch *et al.*, 1983; Poelman *et al.*, 1984). In these reports, after a period of occlusion, a single reading of the intensity of blanching is made 1 h after removal of the occluding materials.

We have three objections to this method. We have found that at the reading time of 1 h after removal of occluding materials, the bases in which the corticosteroids are formulated produce a blanching effect of their own, this rapidly declining 2–3 h after the removal of the occluding materials (Coleman *et al.*, 1979). It seems obvious, therefore, that single blanching readings at such an early time will incorporate a placebo effect component due to the ointment or cream base, thus rendering these readings inaccurate and misleading.

Secondly, even 1 h after removal of the occluding materials, we sometimes find that the skin is still obviously hydrated and measurement of blanching is therefore difficult.

Finally, if a multiple reading regimen is employed, a response-time profile results (Haigh & Kanfer, 1984). It has often been found that a formulation which produces relatively high balancing values in the early part of the response-time profile can show a rapid decline in blanching at later times and *vice versa* (Woodford & Haigh, 1979; Woodford, 1981). This implies that a single reading may not give an indication of the relative potencies of corticosteroid formulations. Blanching normally reaches a maximum about 12–14 h after application of a topical corticosteroid preparation. A single reading at this time would also be insufficient to define relative potencies as some corticosteroids produce sharp narrow profiles whilst others produce broad blunt profiles.

It seems to us, and others (Burdick, 1974), that multiple reading times are essential to produce the response-time profile. Comparisons of potencies of topical corticosteroid formulations should only be made on the basis of area under the curve measurements and statistical treatment of all values obtained at each reading time throughout the course of the experiment.

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