

Effect of mometasone 0.1% and salicylic acid 5% versus mometasone 0.1% on histamine wheal suppression

Sir,

Topical corticosteroids are an integral part of dermatological treatment. Corticosteroids can be used alone or in various combinations in order to reduce adverse effect or to augment the benefits of steroids.^[1] Mometasone furoate is widely used in various dermatological conditions and in combination with salicylic acid, it enhances the anti inflammatory effects of mometasone by facilitating the penetration into the stratum corneum.^[2,3] The ability of topical steroids to suppress the histamine induced wheal is used to assess the relative efficacy of the steroid.^[4] So we conducted a blinded study to assess the wheal suppression of mometasone with and without salicylic acid.

This study was done on 20 volunteers who had not used systemic or topical steroids, antihistamines for one week. Pregnant and lactating females, individuals with history of atopy were excluded from the study.

A template was made using plastic transparent sheet with three apertures (3 × 3 cm) cut 3 cm apart. The template was placed on both forearms and with a marker pen each aperture was outlined. The squares on both forearm were numbered as 1, 2, 3. Half fingertip unit of mometasone furoate 0.1% (momate) was applied on the right forearm and half fingertip unit of mometasone furoate 0.1% plus salicylic acid 5% (momate S) was applied on the left forearm within the three squares. After one hour, prick test was performed on the first square on both forearms by the standard method. A drop of 0.1% W/V histamine solution was placed on the test site. Skin was pricked through the histamine solution with a lancet. The tip was kept parallel to the skin surface and skin was lifted by tenting the lancet by 45 to 60 degrees. After 15 minutes, the size of the wheal was recorded in millimeters by an independent person who was not aware of the nature of application. The mean size of the wheal was calculated by measuring the maximum diameter and the orthogonal diameter of the wheal with a transparent scale. Similarly, prick testing

was performed on the second and third squares of both forearms at the end of second and third hours.

The mean (standard deviation) of wheal at various time intervals are tabulated in Table 1.

Topical corticosteroids and keratolytics are both used widely in the management of various dermatoses. Topical steroids inhibit histamine release and reduce the sensitivity of vascular smooth muscle to histamine and increase peripheral resistance.^[5] Salicylic acid causes desquamation by dissolution of intercellular cement material. It enhances the shedding of corneocytes and in some decreases corneocytes to corneocyte cohesion.^[6] Salicylic acid enhances the anti inflammatory effects of mometasone by facilitating the penetration of stratum corneum.^[2] Various studies have shown that the sequential treatment of mometasone 0.1% and salicylic acid 5% proved to be more efficient than the monotherapy with mometasone 0.1% in the treatment of psoriasis, which was evaluated by psoriasis area severity index (PASI) score and dermatology life quality index (DLQI).^[1,6] The combination has a rapid onset of action and is well tolerated^[1]

In our study, we concluded that there was a statistically significant suppression of wheal after one hour of application of mometasone 0.1% plus salicylic acid as compared to mometasone 0.1% alone. And there was no statistically significant difference between mometasone 0.1% plus salicylic acid 5% and mometasone 0.1% at the end of 2 h and 3 h.

Table 1: The mean (standard deviation) of wheal at various time intervals

| Hours (h) | Mean (SD) Right | Mean (SD) Left | Level of significance |
|-----------|-----------------|----------------|-----------------------|
| 1 | 5.400 | 5.8250 | <i>P</i> 0.43 |
| 2 | 5.4500 | 5.2750 | Not significant |
| 3 | 4.200 | 4.6250 | Not significant |

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