

# Triple Combination and Glycolic Peels in Post-Acne Hyperpigmentation

Sir,

Acne vulgaris is a common multifactorial inflammatory condition of the pilosebaceous follicle. In a recent population-based study, hyperpigmentation was found to be more prevalent in African American and Hispanic (65% and 48%, respectively) than in Asian, Continental Indian and Caucasian (18%, 10% and 25%, respectively) women.<sup>[1]</sup> Post-acne hyperpigmentation is common in Indian skin. Post-inflammatory hyperpigmentation (PIH) is commonly induced by acne lesions, particularly in people with skin of colour.<sup>[2]</sup>

We studied triple combination of 2% hydroquinone, 0.05% tretinoin and 0.01% fluocinolone acetonide cream with glycolic acid peels, in the treatment of post-acne hyperpigmentation. This combination is available in India. A higher concentration of hydroquinone may cause irritation in few patients. Twenty Indian patients with post-acne hyperpigmentation on the face and with skin types IV and V (four men and 16 women), in the age group of 18–30 (mean age 22), with duration ranging from 3 months to 1 year, were included in the study. Those with a history of recurrent herpes and nursing and pregnant women were not included in the study. Those patients with active acne were not included in this study. All the patients were informed about the procedure, and their consent was taken. All patients with melasma were put on a maintenance regimen of the triple combination cream containing tretinoin (0.05%), hydroquinone (2%) and fluocinolone acetonide (0.01%), to be applied at night. The patients were instructed to apply medication all over the face to avoid blotchiness. In the morning, a physical sunscreen of SPF 19 (micronized zinc oxide 15%) was used. Serial glycolic acid peels were used at 2-week intervals, for 2–6 min, depending on tolerance and erythema. Glycolic acid of 57% with free acid 55% and a pH value of 2.3 was used in a gradually increasing duration of application on the face. Before peel, the face was cleansed with acetone; glycolic acid was applied with the help of a cotton bud all over the face except at angles of mouth and eyelids. The peel was neutralized with water. Postpeel care was in the form of calamine lotion and sunscreens for 2 days. Patients were instructed to stop using triple combination 2 days prior to the peel.

All the patients were photographed before starting the therapy and at the end of three peels. The overall response to the treatment was rated by the physician

and the patient, at the end of the study as excellent (75–100% improvement), good (50–74% improvement), fair (20–49% improvement), and poor (0–19% improvement). Adverse effects were noted during each visit. Two patients were lost to follow-up. The results were noted after three peels, in the form of more than 50% improvement in pigmentation in 12 out of 18 patients.

Three patients showed more than 75% improvement [Figures 1 and 2]. The remaining three patients showed fair improvement. Adverse reactions like hyperpigmentation and irritation were encountered in one patient.



Figure 1: Before treatment



Figure 2: After treatment

Wang *et al.* reported skin brightening with peeling, as an important benefit for Asian patients.<sup>[3]</sup> Grover *et al.* found that peeling improved PIH and had some beneficial effect on acne scarring in patients with skin types III-V.<sup>[4]</sup>

It is thought that PIH occurs through the oxidation of arachidonic acid by peroxidase, cyclooxygenase and 5-lipoxygenase to intermediates that form prostaglandins, leukotrienes and thromboxanes.<sup>[5]</sup> The result is the appearance of hyperpigmented lesions with indistinct, feathered borders that vary in size, shape and colour after acne treatment with conventional therapies. Erythematous changes associated with the inflammatory process may be somewhat masked by a high melanin content in dark-skinned individuals. The intensity of the PIH is somewhat related to the intensity of the initial inflammation.<sup>[6]</sup> Skin inflammation too can induce hyperpigmentation by causing melanocyte hyperactivity and release of inflammatory mediators.

We found this triple combination suitable for Indian skin. This combination is little different from international formulation in the form of 2% hydroquinone instead of 4% available internationally. The addition of glycolic acid peels enhances the overall improvement in hyperpigmentation.

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