

Sensitization to and allergic contact dermatitis caused by Mirvaso® (brimonidine tartrate) for treatment of rosacea – 2 cases

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Rosacea is characterized by transient or persistent erythema, telangiectasia, papules and pustules primarily affecting the central facial region. Recently brimonidine tartrate gel 0.33% has been approved for the topical treatment of persistent facial erythema of rosacea (1). Allergic blepharitis caused by brimonidine in patients treated with brimonidine tartrate 0.33% eye drops has been documented (2–4), but allergic contact dermatitis caused by topical brimonidine had only been reported once before (5). We report 2 patients with rosacea who were sensitized and who developed allergic contact dermatitis following treatment with topical brimonidine 0.33%.

Case Reports

Two men, aged 50 and 60 years, respectively, with long-standing rosacea were treated with courses of antibiotics and local metronidazole, with a good effect on papules and pustules, but little effect on facial erythema. The patients started treatment with Mirvaso® gel, with an excellent effect on facial erythema, initially applied just for special occasions, but soon daily. After 3 months, the patients suddenly developed facial dermatitis in the treated area, both with secondary infection (Fig. 1). Treatment with Mirvaso® was discontinued, and the infected dermatitis was successfully treated with local steroids and a short course of antibiotics.

Both patients were patch tested with the European baseline series according to the recommendations of the ICDRG, Mirvaso® gel 'as is', the active ingredient in Mirvaso®, namely, brimonidine tartrate 0.5% aq., and the excipients, namely, carbomer homopolymer 10% aq.,

1% glycerol aq., methylparaben 3% pet., phenoxyethanol 1% pet., propylene glycol 5% aq., and titanium dioxide 1% pet. These preparations were supplied by Galderma Nordic AB (Uppsala, Sweden). We used 8-mm aluminium Finn Chambers® taped with Scanpor® (Epitest Oy, Tuusula, Finland). The exposure time was 48 h.

The results were as follows: for patient 1, a +1 positive test reaction to Mirvaso® on day (D) 2, and negative results on D3 and D7; and for patient 2, a +2 positive test reaction to Mirvaso® on D3, and a negative result on D7. Both had negative results for all individual ingredients. We also performed a repeated open application test (ROAT) with Mirvaso® gel on the upper inner arm of the patients twice daily, and this yielded a positive reaction within 1 week.

Discussion

Allergic contact sensitization to brimonidine tartrate in eye drops used to treat glaucoma has been documented in the literature (2–4). Only once before had a case of allergic contact dermatitis caused by Mirvaso® been reported (5): a 75-year-old woman with a history of intolerance to her eye drops used to treat her glaucoma, who developed dermatitis on her face following treatment with Mirvaso®. It was hypothesized that the patient was initially sensitized to brimonidine tartrate in her Alphagan® eye drops, and then developed allergic contact dermatitis of the face when re-exposed to this allergen in Mirvaso®. A use test with Mirvaso® gel gave a positive result, but the patch test with brimonidine tartrate as a pure compound gave a negative result. Very recently, a case of sensitization via Mirvaso® without prior exposure to brimonidine tartrate in eye drops was reported (6).

Likewise, our patients had never been treated with brimonidine tartrate before, and hence were sensitized on facial skin. As in the first-mentioned case, our 2 patients did not react to pure brimonidine tartrate 0.33%. Brimonidine tartrate may be rendered more allergenic in the

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Fig. 1. Allergic contact dermatitis caused by Mirvaso® gel.

presence of the other ingredients in Mirvaso® gel, and a higher test concentration of brimonidine tartrate may be necessary to elicit a positive patch test result. The positive test reactions in our patients disappeared on the following readings; however, patient 2 with a +2 reaction was given a potent topical steroid to relieve symptoms, and, as the ROAT gave a positive result, we believe that these were true allergic reactions. Our patients were advised to avoid brimonidine tartrate-containing products.

Mirvaso® has been proven to be effective for the treatment of persistent rosacea erythema; however, important side-effects have been reported, among which is a rebound phenomenon, whereby patients who initially respond well to the medication develop rebound with significantly greater erythema than baseline for the patient (7). It is important to differentiate this from allergic contact dermatitis, and to perform patch testing if contact allergy is suspected.

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