

Short Communication

Contact urticaria from geraniol

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The most frequent causes of contact sensitivity to cosmetics are fragrances (1). Fragrances can cause contact dermatitis and both immunologic and non-immunologic contact urticaria (2). We report a patient with contact urticaria from geraniol, which is considered to be caused by immunological mechanisms.

Case Report

A 20-year-old woman with a history of atopic dermatitis developed oedematous erythema on her lips, cheeks, eyelids and neck. She also had noticed urticaria since August 2000.

She was open-tested on the volar forearm for 20 min with the 48 cosmetic products she used. Erythematous reactions were elicited with 3 cosmetic lotions. A 20-min closed-test showed wheal with these three products and erythema with another 4 products. The responses continued for about 60 min. No delayed hypersensitivity was observed after 24–72 h. The 7 products were composed of many ingredients including 11 common ingredients, such as glycerin, propylene glycol, ethyl paraben, tartrazine, sunset yellow FCF, liquid isoparaffin, triclosan, decamethyl cyclopentaxan, ethylenediamine tetraacetic acid disodium salt, perfume mix A, and perfume mix B. Perfume mix A and B, which had been prepared originally by the manufacturer, included several kinds of fragrance ingredients. The open test showed negative reactions with the 11 ingredients adjusted to the appropriate concentration by the manufacturer. The 20-min closed test showed erythema and wheal with perfume mix A and B. The 48-h closed test with these ingredients revealed a wheal with perfume mix B at 48 h. Moreover, after 24 h (72 h), she developed a generalized urticaria, unassociated with respiratory or other systemic symptoms. To identify the substance that caused contact urticaria, we asked the manufacturer for the ingredients of the perfume mix A and B, but could not get detailed information. We then attempted to test the patient with

balsam of Peru, fragrance mix (8%), and fragrance allergens provided by the Japanese Society for Contact Dermatitis, including benzyl alcohol, cinnamic alcohol, cinnamic aldehyde, hydroxycitronellal, bergamot oil, rose oil burgaria, Jasmine oil, ylang ylang oil, sandalwood oil, sandela, eugenol, musk ambrette, benzyl salicylate, oak moss absolute, farnesol, geraniol, iso-eugenol, lily aldehyde, and *trans*-2-hexenal. The 20-min closed tests with these substances showed a wheal to geraniol which was localized to the tested site, and erythematous reactions to balsam of Peru and fragrance mix, and cinnamic aldehyde. We asked the manufacture about the content of geraniol in perfume mix A and B. Both perfume mixes contained geraniol. Perfume mix B contained more geraniol than perfume mix A. Based on these findings, the patient was diagnosed as contact urticaria from geraniol.

Comment

Contact urticaria caused by fragrances is well known. However, there have been no previous reports of contact urticaria from geraniol. Geraniol may act by an immunological mechanism because our patient developed widespread urticaria and flare reactions on the face and neck at the 72-h reading of the patch test.

References

1. Larsen W, Nakayama H, Fischer T et al. Fragrance contact dermatitis: a worldwide multicenter investigation (Part II). *Contact Dermatitis* 2001; 44: 344–346.
2. Harvell J, Bason M, Maibach H I. Contact urticaria and its mechanisms. *Food Chem Toxic* 1994; 32: 103–112.

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