

Occupational allergic contact dermatitis and Type I sensitization caused by *Gerbera* in a greenhouse worker

Rutger I. F. van der Waal,
Thomas Rustemeyer, Willeke G. Kamphof
and Derk P. Bruynzeel

Department of Occupational Dermatology/
Netherlands Expert Centre of Occupational
Dermatology, Free University Medical
Centre, Amsterdam, the Netherlands

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I reaction.

Gerbera is a rare contact sensitizer. Some solitary cases have been reported of allergic contact dermatitis (1, 2) and Type I allergic reactions to *Gerbera* with conjunctivitis and respiratory complaints (2, 3).

Case Report

A 45-year-old Caucasian male was referred to our department for investigation of an 8-month history of conjunctivitis, rhinitis, itch in the facial region and, for 6 months, dermatitis of the hands, neck, left lower abdomen and ventral aspect of the left upper leg. The patient was self-employed and cultivated *Gerbera*. He did not handle other plants at work, nor did he develop symptoms when handling other plants at home. Although the patient had a history of hay fever, the mucosal symptoms also occurred repeatedly outside the typical pollen seasons.

Prior to referral, the patient used betamethasone cream and a povidone-iodine preparation. Furthermore, he had started wearing long sleeves and rubber gloves at work. Both regimens brought relief, but could not prevent relapse on re-exposure to *Gerbera*. The mucosal

complaints could be controlled by oral antihistamine therapy.

At a time when the eczema was quiet, patch tests were performed in two sessions: European standard series, an additional standard series, pesticides that the patient used, *Gerbera* leaf as is, petal as is, and stamen/pollen as is. Intracutaneous testing was carried out with a standard series of aero-allergens, including natural rubber latex (NRL). Scratch tests were performed with *Gerbera* sap from a leaf and stamen/pollen.

Patch test readings were performed at days (D) 2 and 3 as well as at D7. Patch tests were positive only to *Gerbera* leaf, petal and stamen/pollen (all D2 + D3 + + D7–). Many patients have been patch tested with *Gerbera* in the past in our department, and none has ever given a positive reaction (4). The intracutaneous tests showed positive reactions to 'spring tree' pollens, mugwort, grass pollens, house dust mite, cat and dog, fitting with the patient's atopic history. Scratch tests with *Gerbera* stamen/pollen and sap from the stem were positive after 20 min.

The diagnosis was established as a combination of both Type IV and I allergic reactions to *Gerbera*, responsible for occupational contact dermatitis and conjunctivitis/rhinitis, respectively.

In view of the control achieved of mucosal complaints, the use of antihistamine was continued. Furthermore, we advised the patient to avoid skin contact with *Gerbera* where possible by wearing non-latex gloves in combination with cotton gloves underneath and special long sleeves. The patient was also instructed not to rest *Gerbera* on his thighs or abdomen during cutting and bundling. Within a few weeks of following these instructions, the patient was symptom-free while still working with *Gerbera*.

Discussion

Although infrequently described in the literature, Type I sensitization caused by Asteraceae may cause symptoms varying from conjunctivitis and rhinitis to asthma (2, 3, 5, 6). Paulsen et al. reported that occu-

pational Type I allergy to *Gerbera* seemed to be more common than delayed-type hypersensitivity and described their unusual simultaneous occurrence (2), attributed to occupational exposure to large amounts of pollen in pollination workers (2).

Considering that *Gerbera* is a member of the Asteraceae (Compositae) family and a popular pot plant and cut flower, Type IV reactions seldom seem to occur (2, 7). The precise allergens are unknown and may not be the common sesquiterpene lactones, in view of the absence of reactions to the SL mix or the Compositae mix. When investigating plant growers with dermatitis, it is important that testing should not be limited to the plant itself but that tests with the applied pesticides should also be performed (2, 4). The pesticides of our patient were negative.

According to our patient, new personnel regularly experienced itchy rashes on the arms and hands. In most of them, these complaints disappeared, but some workers continued to experience them and left their job. This may imply that *Gerbera* evokes skin complaints more often than has been reported in the literature.

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Derk P. Bruynzeel
Department of Dermatology
Free University Medical Centre
PO Box 7057
1007 MB Amsterdam
the Netherlands