Using a symptom diary to investigate work-related urticaria

E. R. Waclawski and J. Beach
Division of Preventive Medicine, University of Alberta, Edmonton T6G 2T4, Canada.

Correspondence to: E. R. Waclawski, Division of Preventive Medicine, Faculty of Medicine, University of Alberta, Edmonton T6G 2T4, AB, Canada. Tel: +1 780 492 9096; fax: +1 780 492 9677; e-mail: eugene.waclawski@ualberta.ca

Background
The strategy of keeping a diary may not be considered by many treating clinicians, but this approach has been recommended for occupational asthma and proved useful in this case of chronic urticaria associated with work.

Aims
To report a case of a health care worker who had significant allergic reactions that were found to be associated with exposure to test allergens while working in an asthma clinic.

Methods
The patient, a nurse working in a paediatric asthma clinic, was known to be allergic to common allergens that were used to test patients in the clinic. She developed reactions including swelling of the eyelids and urticarial reactions on the forehead, torso and upper and lower limbs on different occasions. A symptom diary was used to collect information on the reactions and the activity performed at the time they occurred.

Results
She recorded symptoms that were mainly urticarial, with additional rhinitis or wheeze on occasion, on 20 (74%) working days and only 5 (28%) non-work days, indicating a significant association (P < 0.01) between her symptoms and working days.

Conclusions
Medical management had not controlled her symptoms, which improved on removal from the work activity and was confirmed by further diary recording.

Key words
Allergy; health care workers; skin complaints; symptom diary; urticaria.

Introduction
Allergic reactions to allergens such as pollen, moulds, house dust mite and small domestic animals are common [1]. Skin prick testing is often used to confirm sensitization to specific allergens when individuals are seen in respiratory, skin and allergy clinics [2–4]. We report a case of a health care worker who had significant allergic reactions, which were found to be associated with exposure to skin prick test allergens while working in an asthma clinic.

Case report
A 38-year-old registered nurse attended our occupational and environmental medicine clinic in November 2011 complaining of recurrent urticarial reactions since November 2010. She had noted her symptoms occurred at work and wondered if her condition had an occupational component. She had started work in a paediatric asthma clinic in July 2009. She had skin prick testing performed as a part of her training in this role; the results at the time showing positive reactions to cat, dog and weeds. She worked as an asthma educator in the asthma clinic, and while she regularly administered skin prick testing to patients as part of her work, her symptoms at work were not restricted to times when she undertook skin prick testing. However, it was noted that it was common practice to keep the vials of allergen open throughout the normal working day.

She had been diagnosed with asthma in January 2010. In November 2010 she started to have urticarial reactions up to four times a week. At that time she had further skin prick testing that identified +4 reactions to mixed grasses, alder, birch, oak, house dust, and cat; and +2 reactions to Dermatophagoides pteronyssinus and D. farinae, dog, alternaria, hormodendrum, docksorrel, lambsquarter, pigweed, plantain, sesame seed and celery. She was being treated with beclomethasone and salbutamol inhalers for asthma as well as montelukast,
desloratidine and ranitidine and had commenced a series of immunotherapy injections to desensitize her to tree pollen and moulds.

Her symptoms included swelling of the eyelids, urticarial reactions on the forehead, torso and upper and lower limbs on different occasions. To clarify any association with work she was asked to maintain a diary of such symptoms on work and non-work days. She kept a diary for 45 days listing symptoms each day, and the activity at the time. In that time she worked on 27 days and was off work (weekends and holidays) for 18 days. She recorded symptoms which were mainly urticarial, with additional rhinitis or wheeze on occasion, on 20 (74%) working days and only 5 (28%) non-work days, indicating a significant association ($P < 0.01$, Chi-square test with Yates correction 7.6) between her symptoms and working days.

The nurse moved away from this area, and at follow-up 2 months later reported no further symptoms on working days ($n = 39$) and on only 4 of 13 non-working days. During that time her need for treatment of her allergies reduced in association with improvement in her symptoms.

**Discussion**

This case highlights the value of a symptom diary in a case where urticarial reactions were occurring frequently. The diary helped to identify a work association, presumably from exposure to allergens in the skin prick testing solutions. Symptom questionnaires are available for use in studies of populations with allergies, but the information collected may not be of help when assessing an occupational relationship. For example, the Urticaria Severity Score is designed to monitor the response to therapy in patients with chronic urticaria but does not help with assessment of underlying causation [5]. Other assessment methods, more analogous to serial peak flow recording used for occupational asthma, are required [6]. This case report suggests that a simple symptom diary may be a useful addition to the assessment of cases of suspected occupational skin allergy, although further research would be required to fully develop and validate such a diary.

Treatment guidelines for chronic urticaria tend to consider a range of pharmacological options as occurred in this case [7,8]. Avoidance of exposure to allergens at work was not initially used for the management of urticaria in this case, and medical treatment had not controlled her symptoms. The strategy of keeping a diary may not be considered by many treating clinicians [7], although such an approach has been recommended in guidelines for occupational asthma, and ultimately proved useful in this case [9].

**Key points**

- Urticarial reactions were associated with work in health care that used allergy test reagents.
- Use of a symptom diary was of value in identifying the association with work days.
- Occupational health professionals should consider the use of a diary for skin reactions to assist in determining occupational associations.

**Conflicts of interest**

None declared.

**References**