

Systemic reactions on SPT to latex

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Key words: adverse reaction; latex; skin prick test.

● IgE-mediated reactions to natural rubber latex are becoming more and more frequent owing to the increasing possibilities of occasional latex exposure through some household

products.

Allergic

reactions to

latex include

contact urticaria, generalized urticaria, angioedema, rhinitis and bronchial asthma, and anaphylaxis; these arise from both direct contact and inhalative or parenteral exposure (1). Although a good clinical history is the first step in diagnosing latex allergy, it is currently confirmed by *in vivo* skin testing with commercially available latex skin prick solutions or extemporaneous glove extracts, or by *in vitro* assays that measure latex-specific IgE. Skin tests may be performed by various procedures and using differently prepared extracts (2). Even though different procedures and extracts may be utilized in

Six patients with signs of anaphylaxis.

skin tests, many authors have shown the great sensitivity and relative safety of such tests (3). In our study, we report six reactions after latex skin prick test (SPT).

Six female patients (aged 26–51 years), all nurses, who reported hypersensitivity reaction to latex products (rhinoconjunctivitis and/or contact urticaria and/or hand contact dermatitis and/or asthma) underwent *in vivo* and *in vitro* tests. After we obtained a complete history, the following investigations were carried out: SPTs for the most common inhalant allergens, and latex cross-reacting foods; patch tests with the GIRDCA (Italian Group of Environment and Contact Dermatitis Research) standard series (Hermal-Trolab, Bracco, Milan, Italy) and the rubber series (FIRMA, Florence, Italy); specific IgE to latex and cross-reacting foods (Pharmacia CAP System); spirometry and methacholine bronchial challenge; SPTs for latex, with extemporaneous extracts (obtained according to Turjanmaa et al. (4) at dilutions of 1:1000, 1:100, and 1:10) or, in only one patient, with a commercially available extract (Stallergènes).

After SPTs for latex (3–30 min), all patients presented the signs of anaphylaxis in different degrees. Two of them presented a particularly aggressive reaction with glottis edema and bronchospasm. An

emergency pharmacologic intervention was therefore necessary. Patients presenting the most severe reactions had a positive bronchial provocative test result. The other results are summarized in Table 1.

The increase in the number of cases of latex allergy and the dangerous reactions that allergic patients may undergo if their sensitization is not recognized stress the need for diagnosis. Although a suggestive history represents the first step in identifying latex allergy, it certainly is not sufficient to make a definitive diagnosis. Moreover, according to other studies, our data confirm that the sensitivity of *in vitro* tests for the research of specific IgE is lower than that of a skin test, as a positive RAST was found in only one-half of the studied patients. Furthermore, some authors have shown the possibility of “false” positive *in vitro* assays, perhaps due to cross-reactive IgE antibodies (5). Besides, the concentration of latex-specific serum IgE is not certainly related to the possibility of serious reactions.

We must point out that the two patients presenting the most serious reactions to SPT showed aspecific bronchial hyperreactivity. A minimal persistent inflammation of the bronchial mucosa might be an additional risk factor for the development of adverse reactions by the respiratory apparatus. Anaphylactic reactions to SPTs are not

Table 1. Data concerning patients with adverse reactions during SPT for latex

Patient nos.	Positive SPTs for inhalants and latex-cross-reacting foods	Positive patch tests	Bronchial provocative test	RAST for latex (kU/l)	Positive SPT for latex
1	<i>Dermatophagoides pteronyssinus</i> and <i>D. farinae</i> , cypress pollen, banana		Negative	<0.35	Extemporaneous extract 1:100
2	Cypress and grass pollen, potato, tomato, celery	Thiuram mix	Negative	14.9	Extemporaneous extract 1:100
3	<i>Parietaria</i> and grass pollen	Nickel, thimerosal	Negative	<0.35	Extemporaneous extract 1:100
4			Negative	<0.35	Extemporaneous extract 1:100
5	<i>D. pteronyssinus</i> and <i>D. farinae</i> , cat dander, potato, banana	Nickel, formaldehyde, colophony	170 µg	16.2	Extemporaneous extract 1:1000
6	Cypress pollen, avocado	Nickel	400 µg	32.5	Commercially available extract

frequent in relation to the great number of tests usually carried out; still, they may not be excluded. Other authors have already reported adverse reactions to SPT for latex, although at variable rates (1, 6).

According to our experience and in view of the risk they pose of possible anaphylactic reactions, these investigations must be carried out only by expert health-care professionals within a controlled environment.

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Chronic urticaria to wheat

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Key words: asthma; chronic urticaria; double-blind food challenge test; exercise-induced anaphylaxis; food allergy; wheat allergy.

● WHEAT flour is a basic foodstuff. Food allergy to wheat flour is primarily described in children in the form of atopic dermatitis. It is rare in adults and mainly reported in exercise-induced anaphylaxis (1–3). A 19-year-old student presented with chronic urticaria for 5

years and asthma treated with salmeterol (100 - µg/day) and fluticasone

(1000 µg/day). This nonsmoking man was a soccer referee. In 1994, the outbreaks of urticaria occurred principally after major exertion during soccer matches. The episodes became more and more frequent. In 1997, the patient no longer observed a direct link with exercise and the outbreaks became daily. Despite treatment, the patient presented exercise-induced asthma. The clinical examination and basic respiratory parameters were normal. The food survey revealed a diet rich in wheat flour with daily consumption of cakes baked by his mother, a chef's assistant.

Prick tests were positive for *Dermatophagoides pteronyssinus* (2.5 mm) for a codeine control at 2 mm. Prick tests to current foods (Allerbio, Varennes-en-Argonne) were negative. Prick tests and patch tests to wheat flour, gluten, gliadine, and baker's yeast were negative. The level of specific IgEs to wheat flour was 19.8 kIU/l (RAST CAP System, Phadebas, Sweden). The food challenge test to wheat flour (15 g) induced an asthma attack 1 h after ingestion, with a fall of 35% in peak expiratory flow and 29% in FEV₁ with the

appearance of sibilant rales. The double-blind oral challenge test with 50 g of bread containing gluten vs 50 g of gluten-free bread provoked an attack of urticaria 7 h later. The oral challenge test to gluten (3 g) was negative. Gastrointestinal endoscopy and biopsies of the duodenal mucosa were normal. The levels of anti gliadine, antireticulin antibodies were normal. The antiendomysium antibodies were at 1/128. HLA class II tissue typing did not reveal any DR3, DR7, or DQ2 antigens.

An elimination diet for wheat flour was implemented. It led to the disappearance of the chronic urticaria at the end of 1 month, the disappearance of the exercise-induced asthma, and, subsequently, a decrease in the ongoing basic treatment for asthma.

The recent literature underlines the frequency of wheat allergy in exercise-induced anaphylaxis. The initial symptom reported by our patient was an allergic reaction related to exercise that progressed secondarily toward chronic urticaria without a direct relationship to exercise. Through the positivity of the oral challenge test and the effectiveness of the elimination diet for wheat flour, we documented the role that wheat allergy played in provoking his symptoms, both chronic urticaria and asthma. The elements that initially led us to the hypothesis of an allergy to wheat flour were based on the frequent implication of wheat flour in triggering exercise-induced anaphylaxis and on the analysis of the food survey, which revealed a large consumption of wheat flour. It is interesting to note that this patient was abnormally exposed to wheat flour during the baking of cakes in his family. This notion of excessive exposure to this allergen has already been reported in patients who are bakers or the children of bakers (4). This observation underlines the difficulty in making a diagnosis: the skin tests were negative. The positivity of the

A high level of IgE antibodies and negative SPT to wheat flour.