

follow-up period did not differ significantly from the 24 others, in terms of clinical symptoms, spirometry values and first specific IgE measurement.

In this survey we demonstrated that simple latex prevention measures in the workplace such as the replacement of powdered latex gloves by nonpowdered latex gloves for all health care workers and latex-free gloves for latex allergic health care workers lead to symptom relief and a dramatic decrease of latex-specific IgE. This is in accordance with a recent study about latex sensitization in a population of dental school students (4). These clinical and biological results encourage us to pursue the follow-up of those subjects and the avoidance of powdered latex gloves in all the units of our 3000-bed university hospital. Such an attitude is now widely recommended (5).

\*Exploration des Allergies  
Maladies Respiratoires  
INSERM U454  
Hôpital Arnaud de Villeneuve  
CHU de Montpellier  
34295 Montpellier Cedex 5  
France

Accepted for publication 3 December 2003  
Allergy 2004; 59:1013–1014  
Copyright © Blackwell Munksgaard 2004

## References

1. TARLO SM, SUSSMAN G, CONTALA A, SWANSON MC. Control of airborne latex by use of powder free latex gloves. *J Allergy Clin Immunol* 1994;**93**:985–989.
2. ALLMERS H, BREHLER R, CHEN Z, RAULF-HEIMSOOTH M, FELS H, BAUR X. Reduction of latex aeroallergens and latex specific IgE antibodies in sensitized workers after removal of powdered natural rubber latex gloves in hospital. *J Allergy Clin Immunol* 1998;**102**:841–846.
3. MITAKAKIS TZ, TOVEY ER, YATES DH, TOELLE BG, JOHNSON A, SUTHERLAND MF et al. Particulate masks and non-powdered gloves reduce latex allergen inhaled by health care workers. *Clin Exp Allergy* 2002;**32**:1166–1169.
4. SAARY MJ, KANANI A, ALGHADER H, HOLNESS DL, TARLO SM. Changes in rates of natural rubber latex sensitivity among dental school students and staff members after changes in latex gloves. *J Allergy Clin Immunol* 2002;**109**:131–135.

5. CHAROUS LB, BLANCO C, TARLO S, HAMILTON RG, BAUR X, BEEZHOLD D et al. Natural rubber latex allergy after 12 years: recommendations and perspectives. *J Allergy Clin Immunol* 2002;**109**:31–34.

## A latex-containing hepatitis-B vaccine administered in a severely latex allergic paediatric patient after specific sublingual immunotherapy: a case report

E. Savi, I. Maffini, S. E. Burastero\*

**Key words:** hypersensitivity; latex; sublingual immunotherapy; vaccination.

Latex allergy, besides being a professional disease, can also affect paediatric patients who repeatedly undergo surgery. Here, we report the case of a 14-year-old boy with a congenital malformation of the urinary tract, who had become latex-sensitized following catheterization and surgery at the end of the age of 1 year.

The child suffered several severe systemic reactions to latex requiring steroid therapy. Oral allergic symptoms to kiwi, banana and pineapple appeared at the age of 10 years. At

the age of 14 years he required hepatitis B vaccination with latex-free syringes. However, the vaccine (Engerix-B<sup>TM</sup>; Glaxo SKB, Rixensart, Belgium) was supplied in rubber-capped vials. Engerix-B<sup>TM</sup> was tested undiluted by prick test and by intradermal injection as a 1/100 and 1/10 dilution in saline and scored positive in all cases. Engerix-B<sup>TM</sup> administration was therefore postponed. One month later, he was started on sublingual latex immunotherapy (ALK-Abellò SpA, Milan, Italy). This implied an induction phase, which was administered in the hospital under specialist supervision, and a maintenance phase, which was self-administered at home (details in Table 1). After 2 months of immunotherapy there had been no adverse effects, the skin test with

**Sublingual immunotherapy with latex may allow performance of non-latex-free vaccinations in severely latex allergic children.**

Table 1. Treatment schedule

| Day                | Vial | Dose (drops) | Protein concentration    | Between-dose interval |
|--------------------|------|--------------|--------------------------|-----------------------|
| Induction phase    |      |              |                          |                       |
| 1                  | 0    | 1            | $5 \times 10^{-8}$ µg/ml | 15 min                |
|                    |      | 10           |                          |                       |
|                    | 1    | 1            | $5 \times 10^{-5}$ µg/ml | 15 min                |
|                    |      | 10           |                          |                       |
| 2                  | 2    | 1            | $5 \times 10^{-2}$ µg/ml | 15 min                |
|                    |      | 10           |                          |                       |
|                    | 3    | 1            |                          | 15 min                |
|                    |      | 10           |                          |                       |
| 3                  | 4    | 1            | 500 µg/ml                | 15 min                |
|                    |      | 2            |                          | 15 min                |
|                    |      | 3            |                          | 15 min                |
|                    |      | 4            |                          | 15 min                |
|                    |      | 10           |                          |                       |
| 4                  |      | 25           |                          |                       |
| Maintenance phase* |      |              |                          |                       |
|                    |      | 25           |                          | 2 days                |

\* Amount per dose: 500 µg.

Engerix-B<sup>TM</sup> reverted to negative and the oral allergy syndrome disappeared. The hepatitis vaccine was split in two doses (one-fifth of the total dose was followed by the remaining four-fifths of the dose 3 h later) and was administered without side-effects. Two booster doses were safely administered with this same procedure 1 and 5 months later.

After 13 months of latex immunotherapy, the latex glove use test, initially positive (1), turned negative and specific IgE diminished from fourth to third radioallergosorbent test (RAST) class.

The experience on latex immunotherapy is currently still quite limited and it is not well established when it would be convenient to stop this treatment (2, 3). However, on the basis of this report we conclude that the protocol we followed was safe and that it could be extremely useful in children severely allergic to latex who have to undergo vaccinations which are not stored in strictly latex-free vials.

\*San Raffaele Scientific Institute  
58, via Olgettina  
20132 Milano  
Italy  
Tel: (39) 02/2643-4730/-4736  
Fax: (39) 02/2643-4723  
E-mail: burastero.samuele@hsr.it

Accepted for publication 5 February 2004  
Allergy 2004; 59:1014–1015  
Copyright © Blackwell Munksgaard 2004

## References

1. TURJANMAA K, REUNALA T, RASANEN L. Comparison of diagnostic methods in latex surgical glove contact urticaria. *Contact Dermat* 1988;**19**:241–247.
2. LEYNADIER F, HERMAN D, VERVOLET D, ANDRE C. Specific immunotherapy with a standardized latex extract versus placebo in allergic healthcare workers. *J Allergy Clin Immunol* 2000;**106**:585–590.
3. SASTRE J, FERNANDEZ-NIETO M, RICO P, MARTIN S, BARBER D, CUESTA J et al. Specific immunotherapy with a standardized latex extract in allergic workers: a double-blind, placebo-controlled study. *J Allergy Clin Immunol* 2003;**111**: 985–994.

## Pilot study assessing the impact of smoking on nasal-specific quality of life

P. J. Bousquet, P. Fabbro-Peray, N. Janin, I. Annesi-Maesano, F. Neukirch, J.-P. Daures, J. Bousquet\*

**Key words:** cross-sectional study; nasal; quality of life; rhinitis; smoking.

Tobacco smoking is thought to induce nasal symptoms

(1) which may impair quality-of-life (QOL) but there is no study which has ana-

lyzed the impact of tobacco smoking in normal subjects or patients with allergic rhinitis.

In order to assess the impact of tobacco smoking on nasal QOL, a cross-sectional pilot study was carried out on 185 sales representatives from all regions of France during their yearly seminar. All subjects attending the seminars were included. Thirty-eight subjects had a previous diagnosis of allergy made by a physician with skin tests and/or serum-specific IgE. Validated questionnaires were used for the epidemiologic diagnosis of rhinitis [Score for Allergic Rhinitis (SFAR)] (2), nasal-specific QOL [Rhino-Conjunctivitis QOL Questionnaire (RQLQ)] (3) and tobacco smoking (European Community Respiratory Health Survey) (4). The 21 subjects who stopped smoking within 1 year were excluded from the analysis. Patients with allergic rhinitis but who did not present current symptoms were also excluded as RQLQ is likely to differ in symptomatic and asymptomatic subjects.

We used non-parametric tests (Kruskal–Wallis test with Bonferroni–Dunn's *post hoc* analysis). Results are given in medians and 25th to 75th percentiles. The present study was a pilot study to assess the number of patients with allergic rhinitis who will need to be tested in order to find a significant difference at a significance level of  $<0.05$  by Mann–Whitney *U*-test.

## Smoking does not impact nasal quality-of-life.

Median tobacco smoking consumption was 7.75 annual packs (3.14–16.75) in the group of current smokers and 0 annual packs in the group of non-smokers.

Among the 38 subjects with a previous diagnosis of allergy, four had a SFAR  $<7$ . All subjects with a SFAR  $>7$  had a diagnosis of allergic rhinitis. The SFAR was non-significantly increased in smokers in comparison with non-smokers (2, 0–4 for non-smokers; 4, 2–8 for smokers). A total number of 708 subjects should be tested to find a significant difference in SFAR between smokers and non-smokers with a power of 0.80.

Subjects with allergic rhinitis had significantly increased global and individual RQLQ scores in comparison with non-rhinitis subjects (Table 1). Smoking did not affect RQLQ scores in allergic rhinitis, but the numbers are too low to make any comparison. A total number of 1432 subjects with rhinitis should be tested to find a RQLQ difference between smokers and non-smokers with a power of 0.80.

Smoking reportedly impairs nasal function for those who smoke. In the present study, we found that smokers tended to have a greater SFAR than non-smokers but the difference did not reach significance. However, this study was of insufficient size to answer the question, and, objective tests for nasal patency may be needed to find differences (1).

Patients with allergic rhinitis have an impaired QOL assessed by generic or disease-specific instruments. There are very few studies which have evaluated RQLQ in subjects not suffering from allergic rhinitis. In a nationwide survey of 15 000 households representative of the US population, RQLQ was filled-in by 312 subjects with rhinitis and 96 subjects without rhinitis (5). RQLQ was impaired in rhinitis subjects but the mean global RQLQ values were not very different between controls and patients (3.81 in patients and 3.55 in controls). In the present study, we found large differences between subjects with nasal symptoms and controls, but the median global RQLQ score was very low in controls (0.07) and significantly higher in patients (1.62).

This study shows that a large number of subjects should be tested to assess whether tobacco smoking has an impact on nasal symptoms or on nasal-specific QOL in subjects with allergic rhinitis.