

in a hospital environment; (c) the availability of resuscitation facilities and/or drugs to treat severe reaction was not optimal; (d) an informed consent for injection IT was routinely required by < 70% of the physicians and (e) poor attention was paid to the education of the patients. In conclusion our survey evidenced a satisfactory overall knowledge of IT and some 'weak points'. These results would allow to take appropriate educational actions and this questionnaire could be used to monitor over time the possible effects of divulgation and educational initiatives.

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The effect of specific immunotherapy on exhaled breath condensate nitrite levels

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Key words: asthma; breath condensate; immunotherapy; nitrite.

Allergic asthma is a complex and heterogeneous disease that is characterized by intermittent reversible obstruction and chronic inflammation of the airways, bronchial hyperreactivity and an infiltration of lymphocytes and eosinophils in the airway submucosa (1).

Allergy is an important trigger in 60–90% of children and 50% of adults with asthma (2).

EBC nitrite levels increase after immunotherapy at the end of the first year follow-up.

The measurement of inflammatory markers in the exhaled air has gained increasing interest and importance in recent years as a simple and noninvasive assessment of airway inflammation in asthmatic children (3).

Specific immunotherapy (SIT) modifies the natural history of allergic airway disease. SIT is effective in asthma. It has been shown that allergen SIT can significantly reduce asthma symptoms and medication requirements (4).

Age-matched 14 nonatopic healthy children (control), 17 asthmatic children with SIT (Group I), and 12 asthmatic children without SIT (Group II) were included after informed consent was obtained.

Skin prick tests (ALK®, Hørsholm, Denmark) were only positive to *Dermatophagoides pteronyssinus* (Dpt) and *Dermatophagoides farinae* (Der f) allergens. Specific IgE tests (CAP Pharmacia, Uppsala, Sweden) were positive for Dpt and Der f.

Group I received SIT [50% Dpt, 50% Der f, ALK® mite mix (510), Denmark].

Breath condensate was collected according to the method reported by

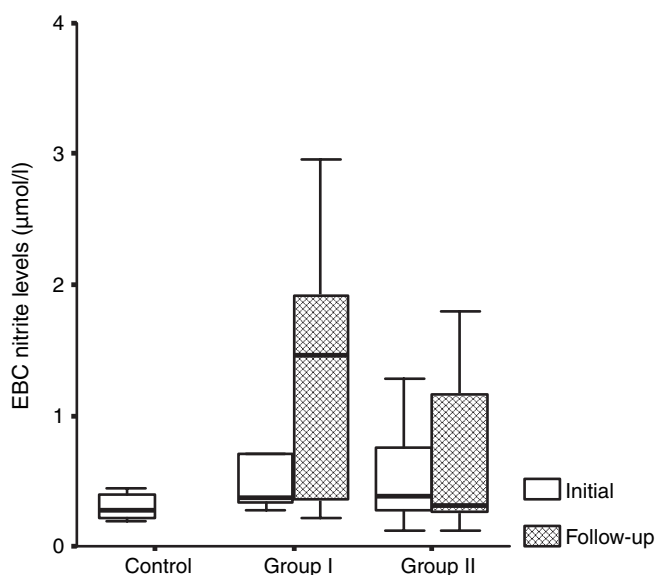


Figure 1. Initial and follow-up (at the end of 1 year) exhaled breath condensate (EBC) nitrite levels between the groups. EBC nitrite concentration was $0.29 \pm 0.08 \mu\text{mol/l}$ in the healthy children. EBC nitrite levels in group I at the beginning and at the end of 1 year follow-up were $0.77 \pm 0.74 \mu\text{mol/l}$ and $1.71 \pm 1.79 \mu\text{mol/l}$, respectively ($P = 0.04$). EBC nitrite levels in group II at the beginning and at the end of 1 year follow-up were $0.50 \pm 0.33 \mu\text{mol/l}$ and $1.11 \pm 1.93 \mu\text{mol/l}$, respectively ($P = 0.36$). There was no difference between the study groups at the beginning of the study. However, at the end of the 1 year follow-up the difference between the groups was statistically significant ($P = 0.05$).

Dohlman et al. (5). We immediately measured nitrite levels using the Griess assay.

Exhaled breath condensate (EBC) nitrite concentrations are shown in Fig. 1.

Between groups I and II the initial measurement of asthma quality of life score differed significantly ($P = 0.03$), however at the end of first year the difference was not significant ($P = 0.556$).

In group I symptom score (SS) and medication score (MS) at the end of first year differed significantly when compared with group II ($P = 0.04$, $P = 0.001$, respectively).

The measurement of nitrites in the breath condensate may allow the implementation of a simple, noninvasive, inexpensive test for the determination of airway inflammation in a pediatric population, and may have a number of advantages over eNO. Nitrite can be conveniently, cheaply and rapidly measured in breath condensates of children as young as 3 years of age, and may prove useful for the assessment of airway inflammation in children with respiratory disease (6).

In our study at the end of first year EBC nitrite levels were higher in group I compared with group II. This can arise the question whether SIT increases inflammation at the end of first year as reflected by an increase in EBC nitrite levels. It is clear that SIT is a long-term management and it could be more reliable if this finding is confirmed in a long-term follow-up. In group I, SIT might have improved the clinical situation. We also found that SS and MS were very useful and valuable parameters for the follow-up. Because of this improvement inhaled corticosteroid (ICS) treatment is terminated. This could have also led to an increase in EBC nitrite levels. Contrary to this, as ICS treatment is continued, this might have resulted in decreased nitrite levels in group II.

Symptom and medication scores should keep to maintain their priority and importance for the follow-up of these patients. Finally, the present preliminary findings have to be confirmed by further long-term studies.

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Tolerance to cooked egg in an egg allergic population

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Keywords: egg; food allergy; oral food challenge; pediatric; skin prick test.

Egg allergy is the most frequent food allergy in pediatric practice. Although the allergic reaction tends to decrease and

even disappear with age, it can persist beyond the age of 5. However, beyond that age, some tolerate the cooked form of eggs. The

purpose of the study was to evaluate the proportion of children beyond the age of 5, who

while allergic to eggs, were able to tolerate cooked eggs. The usefulness of skin prick tests (SPT) to predict the outcome of cooked egg food challenge was studied.

Between January 1998 and May 2002, 60 children allergic to eggs performed an oral food challenge to cooked eggs (cake). Egg allergy was defined as an history of clinical reaction to egg with positive SPT. A prospective comparative study was conducted and two groups were observed: a first group that reacted positively to the challenge and a second group that did not.

The results showed that 73% of the egg allergic children tolerated egg in its cooked form. It was shown that the allergenicity and antigenicity of egg proteins could be altered by heat (1). The structure of the epitopes seems to play a major role in the tolerance to cooked egg. Predominance of IgE against conformational epitope, instead of linear epitope, could explain the observed tolerance to cooked egg in our population. Skin prick tests to egg white protein of ≥ 10 mm appears to be a strong marker to predict reaction to cooked egg challenge. The relationship between the results of SPT and the outcome of egg challenge had already been reported (2, 3) but not with cooked eggs. Also, it was shown here that presence of multiple food allergies seems to significantly increase the risk of reacting to cooked egg (Table 1).

In conclusion the persistence of egg allergy, particularly in its cooked form, seems to be associated with a stronger sensitization to specific epitopes of egg proteins and a highly atopic population. The results of both SPT and the number of other food allergies are thus factors that should be considered while deciding to subject a child to an egg oral challenge with the associated risks.

Most egg allergic children tolerate egg in its cooked form.