

SYNOPSIS

- Monosensitized (grass, *Parietaria*, olive and mite) adult patients (n=279; mean age 29.5±8.1 years) with allergic rhinitis were studied retrospectively.
- Allergen-specific IgE (s-IgE) and total IgE (t-IgE) were measured by ImmunoCAP® (Phadia AB, Uppsala, Sweden) at diagnosis.
- Patients were treated with allergen-specific sublingual (72.8%) or subcutaneous (27.2%) immunotherapy and evaluated after 4 years.
- Patients with effective response to ASI had significantly (p<0.0001) lower levels of t-IgE, higher levels of s-IgE and thus a higher ratio s-IgE/t-IgE.
- Treatment effect was independently related to onset of symptoms, s-IgE/t-IgE ratio, s-IgE levels and blood eosinophils in multivariate regression analyses.
- The area under the curve (AUC) in ROC-analysis was 0.97 for s-IgE/t-IgE, but less than 0.75 for s-IgE and t-IgE separately.
- A s-IgE/t-IgE ratio greater than 0.162 resulted in the optimal sensitivity (97.2%) and specificity (88.1%).

Citation: Di Lorenzo G et al. Evaluation of serum s-IgE/total IgE ratio in predicting clinical response to allergen-specific immunotherapy. *J Allergy Clin Immunol* 2009;123:1103-10.

SYNOPSIS

- Patients with hazelnut allergy (n=57), birch or olive pollen allergy but not hazelnut allergy (n=62), and control patients (n=63) were recruited.
- Patients were recruited from Spain (hazelnut allergy, n=17), Switzerland (hazelnut allergy, n=20) and Denmark (hazelnut allergy, n=20).
- Hazelnut allergy was confirmed by means of double-blind, placebo-controlled food challenge, except in five Spanish patients with typical severe symptoms.
- IgE antibodies to the recombinant allergens rCor a 1.04 (Bet v 1 homolog/PR-10), rCor a 2 (profilin) and rCor a 8 (Lipid Transfer Protein, LTP) were measured by ImmunoCAP®. Values < 0.1 kU_A/l were regarded as negative.
- All Spanish patients reported symptoms to roasted/cooked nuts compared to 35% of those from Denmark and Switzerland.

Citation: Skamstrup Hansen K et al. Component-resolved in vitro diagnosis of hazelnut allergy in Europe. *J Allergy Clin Immunol* 2009;123:1134-41.

SYNOPSIS

- A systematic review was performed of the literature using international agreed approach to identify clinical evidences based on randomized controlled trials.
- The role of omega 3 and omega 6 fatty acids for primary prevention of allergen sensitization and allergic diseases was evaluated.
- Only 6 trials complied with the selection criteria to be double-blind studies.
- Sensitizations were only assayed by skin prick test and no trials using quantitative allergens-specific serum IgE data were shown.
- No significant differences could be shown between the treatment group and placebo with respect to sensitization, total serum-IgE, or development of allergic diseases.

Citation: Anandan C et al. Omega 3 and 6 oils for primary prevention of allergic disease: systematic review and meta-analysis. *Allergy* 2009;64:840-8.

The ratio allergen-specific IgE to total IgE is superior to predict the clinical improvement of allergen-specific immunotherapy

The authors state that the efficacy of allergen-specific immunotherapy (ASI) is still under debate and tests are lacking in the daily practice to predict the clinical outcome of the treatment.

The aim of the present study was to evaluate if quantitative measurements of total IgE (t-IgE) and allergen-specific IgE (s-IgE) in serum at diagnosis could be used to predict the clinical improvement of ASI in monosensitized adult patients with allergic rhinitis. T-IgE and s-IgE were measured at diagnosis and before the start of the ASI treatment.

Clinical improvement was assessed after 4 years treatment. In the studied population those patients with an effective response to ASI had significantly (p<0.0001) lower levels of t-IgE, higher levels of s-IgE and based on that a higher ratio s-IgE/t-IgE. In ROC-analysis there was a significant difference in area under the curve (AUC) between the ratio s-IgE/t-IgE compared to s-IgE or t-IgE. A ratio greater than 0.162 resulted in the optimal sensitivity (97.2%) and specificity (88.1%), and with only a small difference between the tested allergens.

The authors conclude that by using the ratio s-IgE/t-IgE it is possible to calculate a decision point representing a 95% predicted probability for effective clinical response to ASI.

High frequency of LTP-sensitization could not be verified in adult hazelnut allergic patients in birch-endemic area

This study is based on earlier observations of geographic variation in allergen sensitizing profiles and its relation to symptom severity in hazelnut allergic patients. The objective was to use a panel of recombinant hazelnut allergen components to analyze the IgE sensitization profiles in patients from three different climatic European regions (Spain, Switzerland and Denmark), and relate it to the clinical expression.

All patients in Switzerland and Denmark were sensitized to the *Bet v 1* homolog (Cor a 1.04) whereas most Spanish patients were sensitized to lipid transfer protein (LTP, Cor a 8).

Most patients (71%) with severe symptoms to hazelnut were sensitized to LTP and constitute 31% of all LTP-sensitized patients. This is in contrast to non-LTP-sensitized patients where only 2% showed severe symptoms. Only 7% of LTP-sensitized patients come from Switzerland and Denmark and none of them had severe symptoms.

The median levels of IgE to the *Bet v 1* homolog in Denmark and Switzerland and to LTP in Spain were significantly higher in patients with hazelnut allergy compared to control patients with pollen allergy. However, no correlation was found to severity of symptoms in this very small group.

The authors also point out that they could not verify the much higher frequency of IgE-sensitization to LTP in birch-endemic area shown in a recent study on children.

Omega 3 and omega 6 oil supplementation cannot be recommended as a preventive strategy to reduce sensitization and development of allergic diseases

There is a controversy about the role of omega 3 and omega 6 essential fatty acids for the prevention of allergic diseases. According to the authors the present report is the first systematic review of the literature with such a focus. A total of 3,129 articles of potential interest were identified. Ten reports based on 6 individual double-blind studies enrolling high-risk individual were finally selected for evaluation.

Sensitizations to common allergens were assayed by skin prick test and no significant difference could be shown between the treatment and placebo groups. The pooled data showed a non-significant risk reduction for development of eczema/atopic dermatitis, asthma, allergic rhinitis and food allergy. One study show that supplementation with omega 3 was 10 times less likely to have severe atopic eczema/dermatitis whereas another study show no effect on lung function. There were not enough studies to make a pooled risk evaluation of the effect on disease severity.

The authors conclude that intervention with omega 3 and omega 6 oils could not, based on present randomized trials, be recommended as a preventive strategy to reduce sensitization and allergic diseases.