

SYNOPSIS

- Milk and/or egg allergic infants (n=512, mean age 9.4 months, range 3-15 months) with high risk for peanut allergy were recruited.
- Serum IgE to peanut, milk, and egg were measured by ImmunoCAP® (Phadia AB, Uppsala, Sweden) using ≥ 0.35 kU_A/l as a cut-off.
- No association was found to parental atopic disease, breast feeding or age of enrollment.
- Frequent ingestion of peanut during breast-feeding was not associated with high serum IgE antibody level to peanut in infants.
- Frequent consumptions of peanut during third trimester, but not at all during breast-feeding, was strongly associated with peanut sensitization (≥ 5 kU_A/l) (OR 4.99, p<0.004) in infants.
- Frequent consumption of egg during third trimester was like peanut consumption associated with increased risk for high egg sensitization (≥ 2 kU_A/l) (OR 1.53, p<0.03) in infants.

Citation: Sicherer SH et al. Maternal consumption of peanut during pregnancy is associated with peanut sensitization in atopic infants. *J Allergy Clin Immunol* 2010;126:1191-7.

There is a dose-dependent association of maternal ingestion of peanut during pregnancy and a high level of peanut-specific IgE antibodies in atopic infants

The recommendation to avoid peanuts during pregnancy/lactation to prevent childhood peanut allergy has been questioned recently since the scientific evidences are very weak. In a recent study a surprisingly high prevalence of peanut sensitization was shown in children with suspected allergy to milk and/or egg but no symptoms to peanut. The aim of the present study was to investigate whether the ingestion of peanut during pregnancy and/or lactation was a risk factor which could result in high peanut sensitization (≥ 5 kU_A/l) in infants.

Atopic infants with clinical allergy to milk and/or egg or infants with severe to moderate atopic dermatitis and sensitization to milk and/or egg were recruited to the study. Of those infants 60.6% had serum IgE to peanut and 27.8% as high as ≥ 5 kU_A/l. The level of serum IgE to peanut was significantly (p< 0.001) correlated to the IgE level to milk (r=0.52) and egg (r=0.68). In a multivariate model frequent peanut consumption during pregnancy (OR 2.93), IgE levels to egg (OR 3.87) and milk (OR 1.55) were shown to be predictors of peanut specific IgE ≥ 5 kU_A/l. There was a dose-dependent association (p trend = 0.001) between peanut ingestion during third trimester and proportion of peanut-specific IgE ≥ 5 kU_A/l.

The authors conclude that maternal consumption of peanut during pregnancy is the primary modifiable risk factor for peanut allergy in childhood.

SYNOPSIS

- Teenagers (n=564, 18 years old) from a birth cohort were interviewed about allergy-like symptoms when exposed to cats or dogs.
- Allergen-specific IgE antibodies to cat and dog dander were measured by ImmunoCAP® using a technical cut-off at 0.1 kU_A/l.
- When using a cut-off at 0.12 kU_A/l compared to 0.35 kU_A/l in cat sensitized teenagers the specificity for allergy decreased from 91.1% to 85.9% (p<0.01).
- When using a cut-off at 0.2 kU_A/l compared to 0.35 kU_A/l in dog sensitized teenagers the specificity for allergy decreased from 86.1% to 79.5% (p<0.01).

Citation: Linden CC et al. Analysis of allergen specific IgE cut points to cat and dog in the Childhood Allergy Study. *Ann Allergy Asthma Immunol* 2011;106:153-8.

Cut-off levels below 0.35 kU_A/l of cat- and dog-specific IgE increase the sensitivity of self reported allergy in a teenager population

A serum level at 0.35 kU_A/l of allergen-specific IgE has since long been used as a cut-off for a positive test. Improvements of the ImmunoCAP technology have made it possible to measure allergen-specific IgE down to 0.1 kU_A/l. The aim of this study was to investigate if the use of cut-off levels of cat- or dog-specific IgE below the old cut-off levels at 0.35 kU_A/l would increase the test performance based on the highest sum of sensitivity and specificity. When a population of teenagers were interviewed if they had experienced allergy-like symptoms when exposed to dogs or cats 62.9% indicate symptoms to cats and 14.5% to dogs. Based on ROC analysis of IgE antibodies to cat and dog an optimal cut-off (sum of sensitivity and specificity) was found at 0.12 kU_A/l for cat and 0.20 kU_A/l for dog. The decrease in cut-off levels resulted in a significant increase in sensitivity from 49.1% to 63.5% for cat allergy and from 41.5% to 56.1% for dog allergy. The specificity decreased, as expected, resulting in no change in misclassification.

However, this indicates that even this low level of allergen-specific IgE was related to clinical expression of symptoms. According to the authors this is the first study to report the performance characteristics of allergen-specific IgE levels between 0.1 and 0.35 kU_A/l in a general risk population. They conclude that these low levels of allergen-specific IgE are appropriate to use to guide patient managements.

SYNOPSIS

- Peach-allergic patients (n=100, mean age 29 years, range 3-63 years) non-sensitized to birch pollen were recruited to the study.
- Clinical allergy or tolerance to other food related allergens (walnut, hazelnut, peanut, maize, rice, tomato) were confirmed by interviews.
- Allergen-specific IgE antibodies (ImmunoCAP®) were measured to peach LTP (Pru p 3) and to extracts of the allergens mention above.
- 33% of the patients were only sensitized to peach and 35% to 2 or more tested foods besides peach.
- A cut-off to predict (PPV 95%) clinical allergy was shown for hazelnut (4.47 kU_A/l), walnut (6.61 kU_A/l), peanut (12.5 kU_A/l), maize (6.37 kU_A/l), rice (4.93 kU_A/l) and tomato (7.34 kU_A/l) by ROC-analysis.

Citation: Asero R et al. Are IgE levels to foods other than Rosaceae predictive of allergy in Lipid Transfer Protein hypersensitive patients? *Int Arch Allergy Immunol* 2011;155:149-54.

A high level of serum IgE to peach LTP (Pru p 3) in peach allergic patients is associated with higher risk of allergy to hazelnut, walnut and/or peanut

Sensitization to LTP is the most common cause of plant food-induced anaphylaxis in the Mediterranean area. This sensitization has primarily been associated with peach allergy and IgE antibodies to peach LTP (Pru p 3). According to the authors there is no published study focused on the diagnostic value to use the level of serum IgE to Pru p 3 to predict the risk of clinical LTP-related food allergy to other cross-reacting plant foods. The aim of this study was to investigate the level of serum IgE to peach LTP in peach allergic patients who also were reporting clinical allergy to non Rosaceae plant foods.

Peach allergic patients reporting clinical symptoms to hazelnut, walnut, peanut, maize and tomato, but not to rice had significantly higher serum IgE to extract of these food allergens than patient reporting no symptoms. For all allergens it was possible, by using ROC-analysis, to identify cut-off levels of food-specific IgE to predict the 95% risk of having a clinical allergy to the food. However, only patients reporting symptoms to hazelnut, walnut and/or peanut had significantly higher serum IgE to Pru p 3 than peach allergic patients without symptoms to these foods.

The authors conclude that in the Mediterranean area, the level of serum IgE to peach LTP in peach allergic patients is associated with increased risk of allergy to hazelnut, walnut and/or peanut.