IgE antibody measurement of peanut extract & peanut component rAra h 2 is suggested to replace food challenge in diagnosing peanut allergy

The background of this study is that IgE sensitization to peanut extract has too low specificity to replace food challenge test. The aim of the present report was to study if the use of IgE antibodies to peanut allergen components could increase the sensitivity and specificity of ImmunoCAP testing for peanut allergy.

Sera from peanut allergic children/teenagers and pollen sensitized patients without peanut allergy were analyzed for IgE antibodies to six peanut allergen components. All peanut allergic patients showed a positive test (100% sensitivity) to peanut extract. However, the specificity of a positive peanut extract test was low (21-22%). IgE antibodies to Ara h 2 was judged as the best individual marker to diagnose peanut allergy, with a sensitivity of 96% and specificity of 85%. If the cut-off was increased from 0.1 to 0.23 kU/l the specificity became 96% and sensitivity 93%. Including Ara h 6 in the test increased the sensitivity further, from 96 to 98%. In the pollen sensitized population without peanut allergy, 79% were positive to peanut extract and 69% to the birch related component Ara h 8 (Bet v 1 homologue).

The authors conclude that food challenge should no longer be considered to be a mandatory diagnostic procedure since it could be replaced by testing for IgE antibodies to peanut extract in combination with recombinant Ara h 2.

The level of IgE antibodies to timothy components, but not to complete allergen extract, could be used to discriminate rhinitis patients with and without asthma

Sensitization to grass pollen is the most common cause of allergic rhinitis (AR) in southern Europe and is frequently associated to asthma (ARA). The aim of the present study was to evaluate if IgE antibodies to allergen components of timothy could be used to discriminate between AR and ARA patients sensitized to timothy.

Serum from adult grass-allergic patients with AR or ARA was analyzed for IgE antibodies to seven different timothy components. No significant difference could be shown in the serum level of allergen-specific IgE when complete native allergen extract was used in the assay. However, when allergen components were used patients with ARA showed a significant higher concentration of IgE antibodies to Phil p 4 (p=0.0073), Phil p 5 (p=0.0193), Phil p 7 (p=0.0373) and for the sum of Phil p 1 and Phil p 5 (p=0.0194). Using ROC analysis a cut-off > 5.8 kU/l, based on the sum of IgE to Phil p 4 and Phil p 5, was optimal to discriminate between AR and ARA. Negative and positive predictive values of 76.2% and 72.7% were obtained in this population.

The authors conclude that the serum levels of IgE to timothy allergen components are significantly higher in patients with asthma symptoms and could be used to discriminate between AR and ARA.

The protective effect of early-life pet exposure on atopy in childhood did not persist in teenagers

The authors state that there are no or few studies that have examined if the reported effect of early pet exposure on atopy persists beyond childhood. The authors have shown in an earlier study that the exposure to pets in the first year of life was associated with a decreased risk of allergic sensitization at 6 years of age. These results were based on the same birth cohort as in the present study. The aim of this study was to investigate if this protective effect remained to age 18 years.

Serum from 18 years old teenagers of a birth cohort was analyzed for total serum IgE and allergen-specific IgE antibodies. They were interviewed for early exposure and cumulative exposure to pets.

Pet exposure in the first year of life was neither associated to lower or higher risk of atopy (IgE sensitization) nor family history of allergy at the age of 18 years. However, atopic children with pet exposure in early life had lower total IgE, which decreased with dose of pet exposure. Neither was the cumulative exposure to pets or exposure at a specific age (> 1 year) associated with atopy or low total serum IgE at the age of 18 years.

The authors conclude that the protective effect of early-life pet exposure on childhood atopy did not persist when these children became teenagers. However, lower total serum IgE was shown in atopic teenagers with early-life pet exposure.