

SYNOPSIS

- Newborns (n=273) from the German MAS-cohort were recruited and analyzed for IgE antibodies to airborne allergens yearly up to 10 years of age.
- IgE antibodies to house dust mite, cat and dog dander, mixed grass and birch were analyzed by ImmunoCAP® (Phadia AB, Uppsala, Sweden).
- Prevalence of sensitization to each allergen ranged between 2-3% at 2 years of age.
- Ranking of the allergen prevalence (grass>birch>mites>cat>dog) was constant from 5 years of age and to the final follow up.
- No child (n=187) with allergen-specific IgE above 3.5 kU_A/l showed a remission of sensitization.
- Children with early (2 years of age) persistent sensitization (> 3.5 kU_A/l) showed higher average number of sensitizations at 10 years of age than children started sensitization at later age.

Citation: Matricardi PM et al. Dynamic evolution of serum immunoglobulin E to airborne allergens throughout childhood: result from the Multi-Centre Allergy Study birth cohort. *Clin Exp Allergy* 2009;39:1551-7.

IgE sensitization to airborne allergens undergoes dynamic changes throughout childhood, with a high frequency of new sensitization and remission

Several recent studies indicate that sensitization to airborne allergens during childhood is a dynamic process. A single-point assessment of allergen sensitization might be of limited value since it does not disclose if the sensitization is persistent or transient. The aim of the present study was to describe the changes in the sensitization profile to common airborne allergens from birth to 10 years of age. Newborns were followed up yearly by measuring serum IgE antibodies to house dust mite, cat, dog, grass and birch. Only 8% of the children were sensitized to airborne allergens at 2 years of age and increased to 42% at the age of 10 years. Over time the prevalence of IgE sensitization (>1.0 kU_A/l) to each allergen increased significantly with age. The newly diagnosed atopic children were in most cases mono-sensitized but become poly-sensitized in coming follow ups. The half-life of the mono-sensitized state was roughly 3 years. Low IgE sensitization (<1.0 kU_A/l) to individual allergens were often transient (roughly 66%) in younger children (<5 years of age) but more stable at older age.

The authors conclude that IgE sensitization to airborne allergens undergoes dynamic changes throughout childhood, with a high frequency of new sensitization and remission.

SYNOPSIS

- Children (n=536, mean age 1.3 years, range 0.5-14.6 years) referred to the clinic for suspected wheat and/or soybean allergy were recruited to the study.
- IgE antibodies to wheat and/or soybean were measured by ImmunoCAP®.
- Oral open challenge was performed according the recommendation by EAACI (*Allergy* 2005;59:690).
- Skin symptoms were the most common (> 95%) reaction to provocation and approx. 5% experienced anaphylaxis.
- Mean values of allergen-specific IgE were ~ 2 kU_A/l for both wheat and soybean in non-allergic children, compared to 19 kU_A/l and 15 kU_A/l respectively in allergic children.

Citation: Komata T et al. Usefulness of wheat and soybean specific IgE antibody titers for the diagnosis of food allergy. *Allergol Int* 2009;58:599-603.

The IgE antibody levels to wheat and soybean are related to oral food challenge outcome in Japanese children with suspected food allergy

The relationship between food-specific serum IgE concentration and the risk of positive food challenges to egg, milk and peanut is rather well documented and used in clinical routine. However, such relationship has not yet been possible to establish in wheat or soybean sensitized patients. The aim of the present publication was to study this relationship in a population of Japanese children with wheat and soybean allergy is rather common in infancy as a possible consequence of the weaning tradition.

In children with suspected allergy to wheat or soybean, the IgE antibody concentration to these allergens were analyzed and compared to the results of oral open challenge tests. Children with positive challenge test had significantly higher IgE concentration to the tested food allergens. Using a logistic regression model it was shown that per logarithmic increase the risk increased 2.33-fold for wheat and 2.08-fold for soybean with increased allergen-specific IgE concentration. The risk increase was higher (4.09-fold) in wheat-allergic children below 1 year of age. Such age relation could not be shown for soybean allergic children.

The authors conclude that the levels of IgE antibodies to wheat and soybean are related to oral food challenge outcome in children with suspected food allergy to these allergens.

SYNOPSIS

- Children (n=185, median age 8.1 years, range 0.7-16 years) with recurrent wheezing, asthma and/or rhinitis were recruited to a prospected one-visit study in primary care.
- IgE antibodies to a panel of ten allergens (egg, milk, cat, dog, grass, mugwort, *Parietaria*, olive, birch and mite) were measured by ImmunoCAP® Rapid Wheeze/Rhinitis Child with results available within 30 minutes.
- Test results were compared to doctor's diagnosis based on clinical judgment and positive allergen-specific IgE and/or skin prick test.
- Except for birch, sensitivity > 80% and specificity > 90% were obtained to detect IgE antibodies to all allergens by ImmunoCAP® Rapid compared to standard ImmunoCAP®.

Citation: Eigenmann P A et al. The ImmunoCAP® Rapid Wheeze/Rhinitis Child test is useful in the initial allergy diagnosis of children with respiratory symptoms. *Pediatr Allergy Immunol* 2009;20:772-9.

ImmunoCAP® Rapid is a reliable test to verify an atopic background in children with moderate/severe asthma and/or rhinitis

Children with moderate/severe rhinitis or asthma should be investigated for allergy according to present guidelines (ARIA & GINA). The aim of the study was to evaluate if the ImmunoCAP® Rapid Wheeze/Rhinitis Child test could be used in the primary care as a diagnostic device to verify if non-infectious respiratory symptoms were based on allergy or not. The test detects IgE-sensitization to a fixed panel of ten food and airborne allergens. The results of the test were compared to doctor's conclusion, obtained in a primary healthcare setting by selected clinicians who were trained and board-certified in allergy and clinical immunology.

The overall sensitivity and specificity of the test compared to the doctor's conclusion of respiratory symptoms due to allergic disease, was 92% and 97% respectively. However, in patients with moderate/severe asthma and/or rhinitis the specificity was 100% for both populations. The sensitivity was 100% for moderate/severe asthma and 93% for moderate/severe rhinitis.

The authors conclude that ImmunoCAP® Rapid Wheeze/Rhinitis Child is a reliable diagnostic device for evaluation and verifying atopic background in children in the primary care according to current ARIA and GINA guidelines.