SYNOPSIS

- Fifty-six patients were recruited (males 22, age range of 4-83 years; median 18 years) to a prospective study.
- Patients completed a questionnaire about Brazil nut allergy, symptom experienced, and overall atopic history.
- IgE sensitization to Brazil nut was measured by allergen-specific serum-IgE (ImmunoCAP™, Phadia AB, Uppsala, Sweden) or *in vivo* by skin prick test.
- Food challenge (labial and DBPCFD) was performed in patients (n=19) without an obvious clinical history of Brazil nut allergy.
- Negative challenges were found with allergen-specific serum-IgE up to 2.28 kU_A/L.
- A sensitivity of 88% and positive predictive value of 88% was obtained with a cut-off at 0.35 kU_A/L.
- The authors suggested a decision point at 3.7 kU_A/L above which food challenges is not needed to prove a true Brazil nut allergy.

Citation: Ridout S et al. The diagnosis of Brazil nut allergy using history, skin prick test, serum-specific immunoglobulin E and food challenges.
Clin Exp Allergy 2006; 36:226-32.

Patients with IgE antibody level above 3.7 kU_A/L to Brazil nut and clinical symptoms do not need DBPCFC to prove true food allergy

The aim of this study was to determine the relative merits of analyzing IgE sensitization to Brazil nut to select patients for double-blind, placebo-controlled, food-challenge (DBPCFC) in the clinic. Subjects with history of Brazil nut allergy or sensitization to Brazil nut were recruited in a prospective study. IgE sensitization was measured as allergen-specific serum-IgE or *in vivo* by skin prick test. All but one patient were sensitized to allergens other than Brazil nut and 93% had a strong family history of atopic allergy. Labial food challenge was performed and when inconclusive result was obtained testing proceed to DBPCFC. Challenge was not required in 24 cases since they had good clinical history of recent reactions. Of those 19 that undertook a challenge 9 were positive. Negative challenges were found with IgE antibody level up to 2.28 kU_A/L. When a cut-off at 0.35 kU_A/L was used the sensitivity was 84% and the positive predictive value in this population was 88%.

The authors conclude that Brazil nut allergy occurs in those with a strong family history of atopy and with a personal propensity to develop other allergies. They suggested a decision point at 3.7 kU_A/L above which a challenge is not needed to prove a true Brazil nut allergy. However, they also point out that negative SPT results and allergen-specific serum-IgE cannot be used to exclude allergy since no sensitization could be verified in a few patients with positive challenge.

SYNOPSIS

- Children (n=239), 121 girls and 118 boys, were recruited to the study.
- The children were followed prospectively from birth to 2 years of age by the same pediatrician.
- ImmunoCAP™ Phadiatop® Infant (Phadia AB, Uppsala, Sweden) is a quantitative test that comprises an optimized mixture of relevant allergens that react with allergen-specific IgE in patient's serum. Cut-off used was 0.35 PAU/L (Phadia Arbitrary Units).
- Serum-IgE antibodies against 9 common food and inhalant allergens were determined with ImmunoCAP and/or skin prick test (SPT) as reference. Cut-off used was 0.35 kU_A/L.
- The children were classified into IgE sensitized, non-IgE sensitized and inconclusive.
- Inconclusive was defined as at least one positive test result in either SPT or in the *in vitro* test and all negative in the other method (13%).
- 24 patients were positive with Phadiatop Infant but negative in SPT, and 7 positive in SPT and negative in Phadiatop Infant.
- The ROC analysis gave an optimal cut-off at 0.35 PAU/L for Phadiatop Infant, with a sensitivity of 96% and a specificity of 98%.

Citation: Ballardini N et al. ImmunoCAP™ Phadiatop Infant – a new blood test for detecting IgE sensitization in children at 2 years of age. Allergy 2006; 61:337-42.

ImmunoCAP™ Phadiatop® Infant, a new *in vitro* test verifies atopic component in patients with suspected allergic diseases in early childhood

Phadiatop Infant, a new quantitative *in vitro* diagnostic test that aids in the differentiation between atopic and non-atopic patients in childhood allergy was evaluated in this study. The test contains a mixture of relevant allergens for this age group. The children were clinically assessed at 2 years of age and were classified as IgE sensitized, non-IgE sensitized and inconclusive based on results from SPT and allergen-specific serum-IgE. This classification was compared to results from the new test and related to clinical symptoms. Twenty-six (11%) of the children were classified as IgE sensitized and 76% as non-IgE sensitized. The ROC analysis gave an optimal cut-off at 0.35 PAU/L with a sensitivity of 96% and a specificity of 98%. Using a logistic regression model it was shown that a Phadiatop Infant concentration of 0.74 PAU/L gives a 90% probability to detect patients classified as IgE sensitized (positive *in vitro* as well as *in vivo*). Phadiatop Infant was positive in all children with clinical symptoms and classified as IgE sensitized. There was an association (OR 2.7) between any clinical symptoms and a positive Phadiatop Infant and these patients had significantly (p<0.01) higher levels in the test.

The authors conclude that Phadiatop Infant appears to adequately separate children with and without an atopic component in the disease.

SYNOPSIS

- Eigthy-eight OME patients (56 males, age range 1-6.7, mean 4.4 years) attending the ENT department were enrolled and 80 controls (males 53, age range 1.3-6.7 means 4.5 years).
- OME was diagnosed by a specialist based on symptoms, otoscopy and tympanometry.
- Children included in the study hade type B or C tympanogram and symptom duration > 1 month.
- The questionnaire was followed by clinical examination and SPT (≥ 3 mm) or ImmunoCAP™ (≥ 0.7 kU_A/L) to seven local relevant allergens (grass, weed, mite, olive, cat, alternaria and egg white).
- Twenty-eight children (32%) with OME were sensitized to at least one allergen in comparision to 12 (15%) from the control group (OR = 2.64, 95% CI: 1.22-5.65, p=0.01).
- Only IgE sensitization (OR 2.52; p=0.04), wheezing (OR 8.17; p< 0.001) and family history of otitis media (OR 4.39; p<0.001) remained as independent risk factors after multivariate logistic regression.

Citation: Chantzi FM et al. IgE sensitization, respiratory allergy symptoms, and heritability independently increase the risk of otitis media with effusion.
Allergy 2006; 61:332-6.

Otitis media with effusion (OME) is independently associated with IgE sensitization, wheezing and otitis media heritability

Otitis media with effusion (OME) is affecting up to 80 % of preschool children during their lifetime. The role of allergy in this disorder has been extensively discussed and is controversial. The aim of this study was to investigate risk factors in a well-characterized OME population using a case-control design and multivariate logistic regression. Sensitization was measured by SPT (≥ 3 mm) and/or allergen-specific serum-IgE (≥ 0.7 kU_A/L) to seven different allergens. In the OME group 28 (32%) children were sensitized compared to 12 (15%) in the control group.

In univariate logistic regression several significant risk factors was shown such as IgE sensitization, any allergic disease, atopic disease, dyspnea, wheezing, asthma, IgE-mediated asthma, rhinitis, IgE-mediated rhinitis, sneezing, eczema and family history of OME. A multivariate logistic regression was performed to evaluate the relative importance of the different risk factors. Only IgE sensitization (OR 2.52), wheezing (OR 8.17) and family history of otitis media (OR 4.39) remained as independent risk factors after this analysis.

The authors conclude that, to their knowledge, this is the first study showing an independent association of OME with IgE sensitization. The middle ear may be a target organ for allergic reaction.