

SYNOPSIS

- 5335 unselected subjects with respiratory symptoms were screened by skin prick test (SPT) to the three Fagales families: birch (*Betulaceae*), hazel (*Corylaceae*) and oak (*Fagaceae*).
- Patients were from a birch-free area, but exposed to other Fagales pollen species.
- Patients were considered to have a multiple pollen sensitization when having SPT-reactivity to other pollen extracts than Fagales (e.g. grass, olive, pellitory).
- 25.5% (624) of the pollen allergic cohort was skin test positive to one or more of the three Fagales species birch, hazel or oak.
- Isolated hazel pollen reactivity (SPT) was recorded in 13.5% of the Fagales allergic patients.
- IgE reactivity to Bet v 1 seems to be a useful marker of the Fagales sensitization, especially of those who were not multiple pollen-sensitized (84%).
- IgE reactivity to Bet v 2 and v 4 (panallergens) were only recorded positive in multiple pollen sensitized patients.

Citation: Mari A et al. Fagales sensitization in a birch-free area: a respiratory cohort survey using Fagales extracts and birch recombinant allergens (rBet v 1, rBet v 2, rBet v 4). Clin Exp Allergy 2003;33:1419-1428.

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- 1927 of 2711 subjects had complete data on BHR to metacholine and IgE ab measurements (Pharmacia CAP System™).
- IgE ab to cat, mite, birch and timothy grass were measured.
- IgE ab levels were defined as class 1 (0.35-0.69 kU_A/l), class 2 (0.70-3.49 kU_A/l) and ≥class 3 (≥3.5 kU_A/l).
- The prevalence of subjects with IgE ≥class 2 decreased with increasing age, most obviously for indoor allergens.
- IgE antibodies ≥class 2 to both indoor and outdoor allergens had a rather high prevalence (15%) in the age group 20-29 years, and was extremely rare (1%) in the age group 60-70 years.
- In multiple logistic regression analysis indoor allergens, but not outdoor allergens, were associated to BHR in both age groups.
- Despite a lower proportion of cases in older age with BHR attributed to allergen sensitization, allergy still plays a role and patients may benefit from allergen reduction.

Citation: Kerkhof M et al. Allergic sensitization to indoor and outdoor allergens and relevance to bronchial hyperresponsiveness in younger and older subjects. Allergy 2003;58:1261-1267.

SYNOPSIS

- 55 children with clinical sensitivity and IgE antibodies to food allergens (Pharmacia CAP System™ and/or skin prick test) and 92 non-allergic controls were included.
- Mean age of patients at inclusion was 2.9 years with a range of 0.6-11.8 years.
- There were 33% females, 67% males and 50% had atopic dermatitis.
- Mean maternal age was 31.2 years (sd 5.3 years) of mothers to children with a food allergy and significantly higher (p = 0.03) compared to 29.2 years (sd 5.5 years) in controls.
- The proportion of mothers with maternal age ≥30 years was 78% in children with food allergy and significantly higher (p = 0.005) compared to mothers of controls (55%).
- Mothers of children with a food allergy had an odds ratio of 2.88, (95% CI = 1.35-6.16, p = 0.005) of being aged ≥30 at the time of delivery compared to control patients.
- In the logistic regression model maternal age ≥30 years (OR 3.7, 95% CI = 1.67-8.2, p=0.001) and being first born (OR 2.22, 95% CI = 1.06-4.66, p=0.035) were independently associated with the presence of food allergy in children.

Citation: Dioun AF et al. Is maternal age at delivery related to childhood food allergy? Pediatr Allergy Immunol 2003;14:307-311.

Characterization of Fagales pollen (birch, hazel and oak) sensitized patients in a birch-free area using birch recombinant allergens

The present study was carried out to evaluate Fagales pollen sensitization in a cohort not exposed to birch pollen. SPT to birch, hazel and/or oak were used as markers for Fagales pollen sensitization. A subset of patient sera were further characterized by using birch-related allergenic molecules: rBet v 1, rBet v 2 and rBet v 4 (Pharmacia CAP System™). Hazel sensitization was the most common sensitization and 13.5% of the Fagales positive patients were monosensitized (SPT). Patients sensitized to birch-hazel-oak were also sensitized to most other tested Fagales species, whereas hazel monosensitized patients only reacted within the Corylaceae family. Clinical reactivity to hazelnut was never reported among hazel monosensitized patients.

Sensitization to Bet v 1 was highest in the birch-hazel-oak co-sensitized group without any multiple pollen sensitization (83.7%) and lowest in hazel monosensitized subjects (5.4%). In IgE immunoblot sera with isolated hazel pollen sensitization did not react to a major allergen from hazel pollen (Cor a 1) but showed up other bands. Sensitization to Bet v 2 and Bet v 4 were only obtained in multiple pollen sensitized patients.

In conclusion the results show the importance to be aware of the existence of species-restricted sensitization in Fagales pollen allergic patients. The authors point out the value to use panels of discrete allergenic molecules to find new and useful information.

Adults ≥45 years with indoor allergen sensitization and bronchial hyperresponsiveness may benefit from allergen reduction

It is not fully clear whether sensitization to indoor and outdoor allergens is differently associated with bronchial hyperresponsiveness (BHR). In this study, the relationship between specific sensitization to indoor/outdoor allergens and BHR was assessed using multiple regression analysis, and whether this association was different between young adults (20-44 years) and older subjects (45-70 years). Allergen-specific IgE antibodies (IgE ab) to indoor allergens (mite and cat) and outdoor allergens (birch and timothy grass) were measured and correlated to BHR measured by the methacholine provocation test. IgE ab to outdoor allergens was not significantly associated to BHR in the two age groups. Only the presence of IgE ab to indoor allergens (≥class 2) was independently associated with the presence of BHR. In the young adults, cat (OR = 3.9) or mite (OR = 5.0) sensitization must be at least class 3 to be associated to BHR, whereas in older subjects ≥class 2 to cat (OR = 7.5) is sufficient.

The authors suggest that sensitization to timothy grass or birch pollen does not directly influence the presence of BHR. The strength of the association between sensitization to the indoor allergens and BHR was similar for younger and older subjects. In clinical practice, the possibility must be considered that even older patients with BHR may benefit from reduction in exposure to indoor allergens.

Furthermore, the study shows that the association between BHR and IgE ab to indoor allergens was dependent on allergen-specific IgE concentration.

Maternal age ≥30 years at delivery may be contributing to the increased prevalence of food allergies reported in western countries

Mean maternal age and allergy prevalence have increased during recent years in western countries. This study was conducted, based on that observation, to evaluate whether maternal age at birth is higher in children with IgE-mediated food allergy than in those without.

The mean maternal age at birth of children with a food allergies was 31.2 years and significantly higher compared to the mean maternal age at birth of children without food allergies. Mothers of children with a food allergy had about three times greater odds of being aged ≥30 years at the time of delivery compared to control patients.

In the logistic regression model maternal age ≥30 years and being first born were independently associated with the presence of food allergy in the children. Type of insurance, as a proxy for socioeconomic status, was not independently associated with having a food allergic child with food allergy.

This study raises the possibility that increased maternal age is a risk factor and an additional explanation of the increase of atopic food allergy in children.

Furthermore, the study confirm that being first born increased the risk of developing a food allergy even after adjusting for increased maternal age.