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CAPture

A Selection of Recent Allergy Papers

SYNOPSIS

- Children (n=88, age >18 months, median age 32.5 months) with diagnosed IgE-mediated allergy to cow's milk and on milk-free diet were recruited to a cross-sectional study.
- Accidental Allergic Reaction (AAR) during the last year was assayed by a questionnaire.
- IgE antibodies to cow's milk and casein were measured by ImmunoCAP® (Phadia, Uppsala, Sweden).
- 40% of the children reported 1 to 5 AARs during the year.
- Reactions took place at home (47%) > neighbor's home (19%) > day care (19%) > school (6%) or other places (6%).
- AARs were regarded as mild (53%), moderate (32%) and severe (15%).
- Severity of AARs showed a clear association to serum levels of IgE to cow's milk and casein.
- An increased risk (OR 10.19, p=0.022) for severe reaction was shown in asthmatic children.

Citation: Boyano-Martínez T et al. Accidental allergic reactions in children allergic to cow's milk proteins. J Allergy Clin Immunol 2009;123:883-8.

High serum IgE to milk proteins and presence of asthma are risk factors for severe accidental allergic reaction in milk allergic children

There are only a few reports about accidental allergic reactions (AAR) to food allergens in food allergic children and the studies are mainly focused on nut allergy. The aim of the present study was to analyze the frequency, severity and circumstances of the reaction at accidental intake of milk proteins in milk allergic children, but also to study possible risk factors for severe reactions.

In the present study, AAR to milk during the last year was reported by 40% of the milk allergic children. Of those reactions 47% were defined as moderate or severe. Most reactions occurred under daily-life circumstances and most commonly at home. The median IgE level to milk was significantly higher in patients with severe reactions (37.7 kU_A/l) compared to patients with moderate (7.71 kU_A/l), mild (3.37 kU_A/l) or no reactions (3.89 kU_A/l). The risk to have a severe reaction was 10 times higher in asthmatic children. Five of six children with severe symptoms had asthma and IgE antibodies to milk above 25 kU_A/l.

The authors conclude that AAR to milk in milk allergic children are common and high level of serum IgE antibodies to milk proteins and presence of asthma are risk factors for a severe reaction.

SYNOPSIS

- Patients with a history of systemic reaction to honey bee (BV) (n=100) and wasp (WV) (n=100) within the last year and positive skin test were recruited.
- IgE antibodies to BV, WV and CCD (MUXF3) were determined by ImmunoCAP®.
- IgE antibodies to the species-specific recombinant allergen rApi m 1 (honey bee) and rVes v 5 were determined by ADIVA Centaur (Siemens, Tarrytown, USA).
- Double positivity to BV and WV was shown in 59% of patients.
- IgE to species-specific BV and WV allergens was shown in 17% of the patients.
- Anti-CCD was more common (p<0.0001) in BV (52%) than in WV (13%) allergic patients.

Citation: Müller UR et al. Hymenoptera venom allergy: analysis of double positivity to honey bee and Vespula venom by estimation of IgE antibodies to species-specific major allergens Api m 1 and Ves v 5. Allergy 2009;64:543-8.

Double positivity to honey bee and wasp in *Hymenoptera* venom allergy is primarily due to CCD-antibodies

A positive *in vitro* test to both honey bee (BV) and wasp (WV) venoms is common in *Hymenoptera* venom allergy. This constitutes a problem in the selection of venom for immunotherapy. The aim of the present study was to use recombinant nonglycosylated species-specific allergens from BV and WV to differentiate between true double sensitization from cross-reactivity due to cross-reacting carbohydrate determinants (CCD). Sera from patients with a clinical history of systemic reactions to either of BV or VV were analyzed for IgE antibodies to venom extracts, species-specific venom allergen components and CCD-allergens.

A positive test to both BV and WV was shown in 59% of the patients. However, IgE the antibody level to BV was higher in all patients with BV allergy *vs*. WV allergy. In WV allergic patients, the IgE antibody level to WV was higher in 94% of the patients. A true double sensitization to species-specific venom allergens from BV and WV was shown in only 17% of the patients. CCD-antibodies were significantly more often detected in sera from BV allergic patients. In skin testing 51% of the patients showed a positive test to both venoms indicating a biological activity of CCD-antibodies according to the authors.

The authors conclude that the majority of double positivity to BV and WV in hymenoptera venom allergy is due to CCD-antibodies and anti-CCD is much more common in BV allergic patients.

SYNOPSIS

- Patients with a history of systemic reaction to bee venom (n=20), wasp venom (n=116), both bee and wasp (n=2) and *Diptera* (n=2) were recruited.
- Serum tryptase (ImmunoCAP®) was measured 4 weeks after the anaphylactic event. Values ≥13.5 ng/ml was considered as elevated.
- Elevated tryptase was shown in 10.7% of patients with a mean of 33.3 ng/ml.
- Urticaria was less common (26.1% vs. 76.1%, p<0.001) and flushing more common (52.2% vs. 4.3%, p<0.001) at high tryptase levels.
- Clinical severity grade was also higher (3.48 *vs*. 2.69, p=0.006) at high serum tryptase.
- Indolent systemic mastocytosis was diagnosed in 6 cases and cutaneous mastocytosis without systemic involvement in one case in patients with high tryptase.

Citation: Potier A et al. Cutaneous manifestations in Hymenoptera and Diptera anaphylaxis: relationship with basal serum tryptase. Clin Exp Allergy 2009; 39:717-25.

Increased serum tryptase 4 weeks after a systemic reaction to stinging insects indicate a risk for repeated and more severe reactions

Increased basal serum level of tryptase and a relation to mastocytosis have recently been described in patients with severe *Hymenoptera* sting reactions. Furthermore, WHO has proposed persistent elevated serum tryptase level as a minor diagnostic criterion for mastocytosis. The aim of the present study was to screen patients with systemic anaphylaxis to venoms and increased basal serum tryptase levels for mastocytosis. Serum tryptase was measured four weeks after the anaphylactic reaction.

An increased serum tryptase was shown in 10.7% of all patients that had started *Hymenoptera*/*Diptera* immunotherapy at the clinic. Of those patients, 64.5% had experienced several reactions compared to only 24.8% of patients with normal serum tryptase level. Furthermore, the mean grade of clinical severity of the reactions was significantly higher in patients with elevated serum tryptase. The clinical presentation also differed; patients with high serum tryptase had significantly more flushing and less urticaria. Mastocytosis was diagnosed in seven patients with increased basal serum tryptase level.

The authors conclude that serum tryptase should be measured in every patient with systemic reaction to venoms, and mastocytosis should be considered in patients with flushing and absence of urticaria.

Phadia