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TP1498 | Prevalence of IgE sensitization to food and respiratory allergens in children

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Background: Allergy is becoming more common disease in the world. The profiles of sensitization in children determine the possible development of allergy in their future life. So the aim of this study was to investigate the epidemiology of children sensitization in West part of Russia.

Method: Children (n = 115; 6-12 years of age) random taken were studied. MeDALL-chip (176 allergen molecules) was used to assess of IgE-antibodies levels in serums of individuals. Sensitization was considered to be significant when the level of antibodies was \geq 0.30 ISU for MeDALL.

Results: 25.2% of children were defined as sensitized to at least one of the allergenic molecules of the MeDALL chip. A one-allergen sensitization was found in 13.4% children, 6.1%, 3.5% and 2.6% children had sensitization to 2-3, to 4-7, and to $>$ 8 allergens, respectively. Most frequently, the sensitization was caused by respiratory allergens alone (14.% children) or in a combination with food allergens (7.8%); in 2.6% individuals only food allergens were responsible for the sensitization. Cat allergen (Fel d1) and birch allergen (Bet v1) were the essential provoke factors of allergy for 13.9% and 7.8% children respectively. IgE-antibodies to Fel d2 molecules were detected in 5.2% children. Also 4.35% of children had IgE to alder (Aln g1). Sensitization to dog (Can f1), house dust mites (Der f2, Der p2), timothy grass (Phl p1) and *Alternaria alternata* (Alt a1) were observed in 3.48% of children. But such well-known respiratory allergens like Amb a1 and Can f5 caused sensitization in only 2.56% of children. Important food allergens originating from egg or milk caused sensitization in $<$ 2% of children. Only 1.74% of individuals were sensitized to milk (Bos d6, Bos d Lf), egg (Gal d3), peanut (Ara h9). We found 5.2% of patients with IgE-antibodies to Mal d1, but in all cases the high level of IgE to birch (Bet v1) was also observed. The sensitization to minor plant allergens was rare. IgE to Bet v2, Phl p4, Phl p5b, Phl p12 was detected in 1.74% children, and to Phl p7, Art v3 - only in 0.87% individuals.

Conclusion: Children of 6-12 years of age are more often sensitized by respiratory allergens having IgE-antibodies against 1 to 3 allergens. Cat and birch represent principal respiratory allergen sources. Sensitization to minor allergens occurs in \leq 2% of the examined children. Sensitization to food allergens is less frequent, but often coinciding with cross-sensitization to respiratory allergens.

TP1499 | Evaluation of clinical symptoms and clinical course in pediatric patients with tree nut allergy

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Background: Tree nut (TN) allergy is an important health problem due to the fact that elimination is difficult in children, may cause severe reactions such as anaphylaxis and the frequency of resolution with age is low. We aimed to add information about the clinical characteristics and tolerance development of tree nut allergies in children.

Method: Clinical characteristics, laboratory findings and prognosis of patients who were followed up for TN allergy between 2010-2017 at University of Health Sciences, Ankara Child Health and Diseases Hematology Oncology Training and Research Hospital, Child Allergy Clinic were evaluated. Patients whose last control for the determination of the clinical course is more than 6 months were invited to the clinic; allergy work-up was repeated. Tolerance status was assessed by oral provocation test in patients with negative results.

Results: The mean age of the 128 patients (73.4% male) included in the study was 2.5 (0.15-17.8) years. One hundred and nine patients (85.2%) had hazelnuts allergy, 60 (46.8%) had walnuts allergy, 47 (36.7%) had pistachio allergy, 37 (28.9%) had almonds allergy, 22 (17.2%) had cashew allergy. Eighteen (33.3%) [16 (88.9%) hazelnut allergy, 2 (11.1%) walnut allergy] of the 54 patients with single TN allergy has improved. Of the 74 patients with more than one TN allergy, 21 (28.4%) hazelnuts allergy, 13 (17.6%) almonds allergy, 10 (13.5%) walnuts allergy, 5 (6.8%) pistachio allergy, 2 (2.7%) cashew nuts allergy has improved.

Conclusion: In our study, hazelnut and walnut allergy were the most common cause of TN allergies. In our patients, the rate of other food allergies associated with TN allergy was high. The recovery of patients with a single TN allergy (33.3%) was higher than the patients with multiple TN allergy (32.4%). Regular follow-up and evaluation of patients with TN allergy is very important.

TP1500 | The prevalence of systemic reactions and their sensitization profiles in children with pollen food syndrome

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Background: Little is known about the prevalence of systemic reactions (SR) and the importance of sensitization profiles in children

with pollen-food syndrome (PFS). The aim of this study was to evaluate the prevalence of SR associated with PFS and sensitization profiles in children.

Method: A total of 128 patients aged 5-17 with seasonal allergic rhinitis/rhino conjunctivitis (AR/ARC) were enrolled in this study. The questionnaire on rhinitis and food symptoms, skin prick testing with commercial aero- and food allergen extracts, total IgE and specific IgE (sp. IgE) to major pollen molecules PR-10 proteins (rBet v 1, rAra h 8, nGly m 4, rCor a 1, rMal d 1, rPru p 1), profilins (rBet v 2, rPhl p 12) and LTP (rPru p 3, nArt v 3, rCor a 8, rAra h 9, rJug r 3) using ImmunoCAP were performed. Statistical a multiple regression and univariate analysis were used.

Results: Of all AR/ARC patients clinical diagnosis of PFS was made in 48 (37.5%) children with median aged 9 y.o. Among included PFS (+) patients, 5 (3.9%) had a history of anaphylaxis and 19 (14.8%) of generalized urticaria with or without oral cavity reactions/symptoms. Nuts and peach were the most common food implicated in SR, which registered in 16 birch and 8 mix (birch and weed) allergic patients. All patients with SR had elevated specific IgE to both rBet v 1 and rCor a 1. Sensitization to rAra h 9, rCor a 8, rPru p 3, nArt v 3 was prevalent (in 42.8%, 28.6%, 19.0%, 14.3% respectively) and had higher values among patients with SR. There were no patients with increased IgE to profilins. Sensitization to both rBet v 1 and nArt v 3 directly correlated with clinical symptoms of systemic reactions in PFS patients.

Conclusion: The prevalence of systemic reactions in children with PFS is low, with nuts and peach predominantly implicated. Specific IgE to rCor a1 and LTPs (rAra h 9, rCor a 8, rPru p 3, nArt v 3) in children with PFS seemed to be risk factor for development SR.

TPT001 | The natural history of egg allergy and factors associated with prognosis

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Background: Egg allergy is the second most common food allergy in children. Although most of the patients develop tolerance in early years of life, in some patients egg allergy may persist for longer time. The aim of this study is to investigate the tolerance processes and the clinical and laboratory factors associated with natural history of egg allergy.

Method: The study included patients, who were at least two years old, diagnosed with egg allergy and are followed for at least six months at our pediatric allergy clinic. Sociodemographic features,

symptoms, age at symptoms onset, age of diagnosis, clinical findings at diagnosis and during observation were recorded. Tolerance development status and tolerance development time were assessed

Results: A total of 173 (69% male) patients were studied. The median age of symptoms onset was 4 month and the median age of egg allergy diagnosis was 7 month. Presenting symptoms were observed in 97.1% of the patients as skin symptoms, 2.9% gastrointestinal system, 1.2% respiratory system symptoms and 3.5% of the patients had anaphylaxis. Forty-five percent of the patients had another food allergy. The most commonly accompanying allergen was cow's milk (47.4%). Respectively, other food allergies were 8.7% legumes, 8.1% tree nuts and 6.4% wheat. Among the patients with egg allergy, 78.6% had mixed type hypersensitivity, 20.2% had IgE mediated hypersensitivity and 1.2% had non-IgE mediated hypersensitivity reactions. Among the mixed type hypersensitivity patients, the most common symptom was atopic dermatitis (76.9%). At the end of a mean follow-up 23.5 ± 16.9 months, 36.4% of the patients developed tolerance by age 2 years, 78.6% by age 5 years. Totally 83.2% of the patients developed tolerance. Persistence was more common among, patients with anaphylaxis, accompanied by legumes and nuts allergies and patients with higher egg specific IgE levels, at admission. According to regression analysis high egg specific IgE value at admission was the factor associated with persistence (P = 0.012, OR:1.052, %95)

Conclusion: In our study, 105 (60.7%) of 173 patients with egg allergy developed tolerance before 3 years of age. The presence of high specific IgE levels at the time of diagnosis were found to be related to persistence of egg allergy.

TPT002 | Bird-egg syndrome in pediatric age: Two cases report

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Background: Egg allergy is highly frequent in childhood, mainly due to egg white (EW) consumption. The principal allergens are ovalbumin, ovomucoid, ovotransferin, and lysozyme (contained in egg white). Egg yolk (EY) also contains proteins implied in allergic reactions such as alpha-livetin. This protein is also present in muscle tissue of poultry, being responsible for bird-egg-syndrome (BES), which is infrequent in children. Patients have respiratory and gastrointestinal symptoms with egg intake or with contact with birds.

Method: Children aged 1-14 years reporting egg allergy from January 2015 to December 2018, were analyzed. Demographic data, atopic personal and family history, skin prick test (SPT), prick-prick (PP) and specific IgE were included.

Results: 686 patients were analyzed. 684 were allergic to EW and 2 patients were diagnosed of bird-egg-syndrome.