

310 Cross-reactivity Between Tree pollen, Food and Latex Allergens



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RATIONALE: Precision allergy molecular diagnostics allows assessment of cross-reactivity between pollen and food allergens using multiplex measurement arrays.

METHODS: Data from 8016 ALEX tests performed in different regions of Ukraine in 2017-2019 were assessed in patients from 1 to 78 years old. Correlation analysis was performed by the Spearman method.

RESULTS: Cross-reactions were mostly seen with Betulaceae pollen groups. Sensitization to *Alnus*, *Betula* and *Corylus* pollen alone expressed cross-reactivity to other pollen types in 55-60 % of cases. 51 % of patients sensitive to Bet v 2 profilin were sensitized to olive pollen profilin Ole e 2 and of date palm profilin Pho d 2. 51-53 % of patients were sensitized to PR-10 Bet v 1 of *Betula* pollen and Ara h 8 peanut allergen. 52 to 60 % of patients were sensitized to birch and alder pollen PR-10 allergens and to Mal d 1 of apple from the same group. Cross-reaction between alder and celery PR-10 allergens (Aln g 1 and Api g 1) was 50 %. 50 % of patients reacted to profilins of birch and latex (Bet v 2 and Hev b 8).

CONCLUSIONS: Pollen-targeted allergen-specific immunotherapy may possibly impact pollen-food oral allergy syndromes based upon allergen cross-reactivity

311 History of Eczema Among Black and White Peanut Allergic Children



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RATIONALE: Eczema is a risk factor for peanut allergy (PA) development. Racial differences in eczema and food allergy outcomes exist. This study aims to explore potential racial differences in eczema history among peanut allergic children.

METHODS: Black and White children (0-12 years old) with a diagnosed food allergy were enrolled into FORWARD, a prospective, multi-site, cohort study. Parent-proxy responses were obtained for the intake and 12 month follow-up survey. Surveys included questions on timing of dietary introduction of peanut, current food allergies, and eczema related outcomes. Pearson X² tests were used to compare differences by race.

RESULTS: Responses for the 12 month follow-up survey were received for 183 peanut allergic children (n= 46 Black, 137 White). Of the 183, 153 had eczema. Among Black children with PA, 89.1% reported ever having eczema vs 81.8% of White children. For medications during the first year of life, 59.5% used topical prescription medication to control eczema while 16.3% received antibiotics for skin infection related to eczema. No statistically significant differences in race were observed. However, among children with PA who ever had eczema, only 38 (24.8%) introduced peanut early (before 1 year of age). Among those that were ever introduced peanut

(n=94), early introduction was more common among White children (49.3%) than Black children (16.0%), p=0.01.

CONCLUSIONS: Regardless of race, the majority of children with PA had a history of eczema. Additionally, Black children were less likely than White children to be introduced to peanut products early. These are important considerations for current PA prevention guideline implementation.

312 "A sweet revenge": Pineapple-related adverse food reactions



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RATIONALE: Pineapple has been implicated in array of adverse reactions, including uncomfortable mucosal irritation, oral allergy syndrome (OAS), and even anaphylaxis. Mucosal irritation could be due combination of acidic pH and enzymatic activity of bromelain.

METHODS: Retrospective chart review of 15 patients with pineapple-related adverse food reactions at a tertiary center allergy clinic. Data parameters included description and timing of reactions, allergy test results, history of other allergic conditions. Statistical analysis such as mean, mode, median, standard deviation were used to interpret the data.

RESULTS: Female gender was prevalent among the 15 patients in the study, with 13 females and 2 males, median age 47 years. Reactions described were: mucosal Irritation, OAS, and anaphylaxis. Mucosal Irritation was the most common presentation, reported in 8 patients, followed by 4 patients with OAS, 2 with anaphylaxis, and 1 with nonspecified intolerance. 50% of patients (7), experienced symptoms within minutes of ingestion. 53% of patients (8) decided to proceed with IgE-testing for pineapple: 3 had positive sIgE for pineapple, 4 had negative sIgE, 1 had a negative skin test. 11 patients had a history of allergic rhinitis, asthma (4), atopic dermatitis (4), seafood allergy (4).

CONCLUSIONS: In pineapple-related adverse food reactions, IgE-based allergy tests can guide clinical decision. Allergic rhinitis was a significant comorbidity, underlying the need to test for both inhalant and food allergens to evaluate for OAS. Allergy tests and ingestion challenges can distinguish between IgE-mediated and non-IgE-mediated reactions, and guide prescribing patterns of relatively expensive treatments such as epinephrine autoinjectors.