In A Nutshell – Birch Co-sensitization Among Children With Peanut, Hazelnut And Almond Allergies.

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Rationale
- Individuals diagnosed with nut allergies often experience mild oropharyngeal symptoms only, referred to as pollen food allergy syndrome (PF S). 23
- PFS is secondary to cross-reacting homologous proteins in pollens and nuts.
- In Finland, Uotila et al. examined cross-sensitization profiles of peanut and tree nuts in a birch endemic area. 8
- Findings were that 84% of subjects sensitized to birch had co-sensitization to hazelnut. This number was 71% for almond and 60% for peanut. The correlation between birch sensitization and component resolved diagnostics (CRD) profiles of the nuts was not assessed. 23
- CRD measures IgE to specific component proteins within the food allergen, as opposed to serum-specific IgE that measures IgE to the whole food extract.

Results
- This technique has helped refine the differentiation between life-threatening severe allergy and sensitivity associated with mild symptoms. 23
- We investigated the association between peanut, almond and hazelnut allergies, and birch co-sensitization to provide insight into the prevalence of PFS among nut allergic children seen in our practice.
- Birch sensitization was present in 41 (61%) patients, while 10 (15%) patients had not been tested.
- Of 58 peanut allergic patients, 35 (60%) were birch sensitized; 9 (16%) had not been tested (95% CI, 47.7–72.9%).
- Of 48 patients with hazelnut allergy, 35 (73%) had birch sensitization, and 5 (10%) had not been tested (95% CI, 60.3–85.4%).
- Birch sensitization was seen in 33 (76%) of 45 almond allergic patients, while 6 (13%) had not been tested (95% CI, 60.4–86.2%).

Conclusions
- Here we present preliminary data suggesting the presence of birch co-sensitization among a proportion of patients with peanut, hazelnut and almond allergies, raising the possibility of PFS.
- This may have implications in failed oral challenges, with PFS being a potential confounding factor.
- An understanding of the prevalence of this co-sensitization to birch tree (which is very common in this geographic region), and its correlation to clinical reactivity may give useful insight into management of these food allergies.
- An understanding that accidental exposure to these nuts will lead to mild oral allergy symptoms and not life-threatening anaphylaxis may have a significant impact on the lifestyle of individuals with these allergies.
- Results of further investigation into a larger data set is pending.

Methods
- After IRB approval, we performed a retrospective chart review of 67 pediatric patients seen in our clinic with a diagnosis of peanut, almond or hazelnut allergy and investigated the presence of birch co-sensitization.

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<th>Hazelnut</th>
<th>Almond</th>
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<tbody>
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<td>Birch</td>
<td>35 (60%)</td>
<td>35 (73%)</td>
<td>33 (76%)</td>
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References