Airborne Exposure to Aeroallergens Has a Role in the Disease Process of EoE

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Disclosure

• Speaker-Abbott, Nutricia
• Grant-DOD, NIH, Ception
• Consultant-DBV, Dannon
• Organizations-AAAAI, ACAAI, APFED, IAFPE, PAAAI

Mouse Model of Epicutaneous Sensitization

Allergen → Atopic Dermatitis

Allergen → Airway eosinophilia
Airway Hyperreactivity
EoE ASTHMA


Intranasal Murine Models


Association of Atopy with EoE

<table>
<thead>
<tr>
<th>Ref</th>
<th># of Pts</th>
<th>Age (Yrs)</th>
<th>Asthma</th>
<th>AR</th>
<th>AD</th>
<th>Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population</td>
<td></td>
<td></td>
<td>10%</td>
<td>20-40%</td>
<td>5-20%</td>
<td>1-6%</td>
</tr>
<tr>
<td>Spergel</td>
<td>620</td>
<td>8m-20</td>
<td>50%</td>
<td>61%</td>
<td>21%</td>
<td>16%</td>
</tr>
<tr>
<td>Assad</td>
<td>89</td>
<td>3m-18 yr</td>
<td>39%</td>
<td>30%</td>
<td>19%</td>
<td>9%</td>
</tr>
<tr>
<td>Sugnanam</td>
<td>45</td>
<td>3m-16 yr</td>
<td>66%</td>
<td>93%</td>
<td>55%</td>
<td>24%</td>
</tr>
<tr>
<td>Guajardo</td>
<td>39</td>
<td>1m -31</td>
<td>38%</td>
<td>64%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Roy-Ghanata</td>
<td>23</td>
<td>18-57</td>
<td>26%</td>
<td>78%</td>
<td>4%</td>
<td>--</td>
</tr>
</tbody>
</table>

Sensitization to Foods/Inhalants in EE

Seasonal Diagnosis

- New Diagnosis of EE in Iowa
- Decrease in Winter (out of pollen season)


Seasonal Diagnosis-2

Correlation between eosinophilic oesophagitis and aeroallergens

- Increased in the Spring in 127 Adult EoE Patients
- Correlation with Grass pollen but not tree or weed


Pollen and Lower Intestine

- 9 Birch sensitive OAS patients
- 9 Controls
- Duodenal Biopsies in Birch Season and out of season
- Biopsied examined for Eosinophils, CD3, and IgE by Immunohistochemistry

Pollen and EoE

- Esophageal Eosinophils were found in
  - 0 control patients
  - 10 (26%) with allergic rhinitis
  - 5 (22%) of GERD patients
- Eosinophils per HPF
  - 5.5 ± 7.3 in AR patients
  - 1.7 ± 1.5 in GERD patients


CHOP Experience

- 3 Pollen only patients
- 10% biopsy proven variation during pollen season
- 15% symptom changes during pollen season

Conclusion

- Pollen can cause EoE
- Pollen plays a role in some patients
- Do not forget about Food!!