Peanut Allergy Desensitization

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KAAP SPRING CME MEETING
APRIL 24, 2015

Disclosures
- Speakers Bureau – Teva pharmaceuticals
- Consultant – None
- Research – None
- Stock – No major stock holdings

Objectives
- Recognize the current epidemiology of food allergy
- Identify the current standards for food allergy testing
- Identify potential candidates for peanut desensitization
- Discuss the peanut desensitization/OIT protocol
- Discuss the efficacy of peanut OIT
- Identify potential safety concerns with OIT
**Food Allergy Epidemiology**

- 8% of children have at least one food allergy
- Eight foods account for 90% of all FAs. 
  - Peanut, milk, egg, wheat, soybean, tree nuts, fish and shellfish
- 300,000 ambulatory care visits for FA per year in children under 18 y/o
- FA is the leading cause of anaphylaxis outside the hospital setting.

2. www.cdc.gov/nchs/data/databriefs/db10.htm

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**Food Allergy Testing Pearls**

- Only order specific IgE lab testing or refer for allergy skin testing.
- Why should you avoid ordering “food panels?” 
  - 50% PPV if there is a low pre-test probability
- Strictly avoid unproven testing, especially IgG testing

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**Peanut Allergy**

- Prevalence: 1-2% in the U.S.
  - Highest prevalence in children <3 y/o
- ~20% of PN allergic kids will become tolerant by school-age
- Reactions are non-stereotypical in nature and specific IgE level does not predict the potential severity of a reaction

Peanut Allergy

- Accidental exposure occurs in ~12% of PN allergic patients per year\(^1\)
- Peanut is the most common cause of food allergy related death
  - 20 of 32 deaths in one study\(^2\)
- Traditional treatment strategies:
  - Avoid
  - Treat reactions when needed


WHAT OTHER TREATMENT OPTIONS ARE THERE??

Peanut allergy desensitization

- AKA – Oral immunotherapy (OIT)
- Alternative for some patients to the traditional treatment approach
- OIT is not an established treatment and is not yet mainstream.
  - Only 2 allergists in Kansas and Missouri combined offer OIT
- However, use of OIT is supported by an extensive body of literature through case studies and clinical trials.
Peanut allergy desensitization


Patient Selection

- 5 years old is our current minimum age
- No peanut IgE value is too high or too low
- Patients with multiple food allergies are still candidates
- Weigh the likelihood of them becoming tolerant on their own
- If the peanut IgE and Ara h 2 IgE are marginal or the history is marginal, an oral challenge is necessary
- Adherence to the protocol is an absolute necessity

Protocol

- Weeks 1-6
  - Peanut flour mixed with Kool-Aid
- Weeks 7-11
  - Peanut flour mixed with any vehicle
- Weeks 12-21
  - Peanuts or equivalent (peanut butter, flour, etc)
- Office dosing vs. home dosing
- Typically 4-6 months to completion
Protocol

- **Day one**
  - 6-8 hours and 20 total doses
  - Dose increased every 15-20 minutes

- **Escalation days**
  - Weekly increase in dosing x ~21 weeks
  - Each office visit is ~1 hour
  - They home dose BID between escalation days

- **Maintenance phase**
  - 8 peanuts once daily

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Peanut OIT Efficacy

- ~85% of patients reach the maintenance dose
  - 28 patients – 16 reached maintenance doses
    - Pooled data from 5 private practices
    - 352 patients – 298 reached maintenance doses

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Efficacy

- Dr. Wasserman’s clinic data as of May 2014:
  - 228 patients have begun OIT
    - 193 (85%) have reached maintenance
    - 97% of patients have continued maintenance dosing for at least 3 years

- Dr. Wasserman current OIT numbers:
  - **Peanut**
    - 119 on maintenance; 44 escalating
  - **Milk**
    - 57 on maintenance; 6 escalating
  - **Egg**
    - 37 on maintenance; 3 escalating
  - **Wheat**
    - 2 on maintenance; 0 escalating
  - **Tree nuts**
    - 3 on maintenance; 9 escalating
Safety & Side Effects

- Wasserman et al.\(^1\)
  - 5 Private practices
  - 352 patients
  - 240,351 doses of peanut, peanut butter or peanut flour
  - 95 reactions treated with epinephrine
    - 0.2 ETRs per 1000 doses
    - 1 site excluded due to differing criteria for giving epinephrine
  - SCIT systemic reaction rate – 0.1%


Safety & Side Effects

- Most common SE are GI related
  - Abdominal pain, nausea, reflux

- More severe reactions are treated like any other allergic reaction

- Eosinophilic esophagitis develops in ~10% of pts

Thank You.

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