Food Allergy and Management in Schools

Overseas School Health Nurses Association Conference
March 30, 2018
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Disclaimer

- There is no conflict of interest pertaining to this presentation, materials, and/or content.
- These views reflect my own, and not the views of the Navy.
Objectives

• Define food allergy, prevalence in schools
• Review differential and diagnosis of food allergy
• Define anaphylaxis and identify its risk factors
• Discuss food allergy management in schools
• Review role of school nurses, as pertaining to food allergy
Food Allergy

• Adverse health effect arising from a specific immune response
• More common in children than adults; 1:13
• Milk, egg, wheat, soy often resolve
• Peanut, tree nut, fish and shellfish likely to persist
Food Allergy in School

• 16-18% of school age children have a reaction in school
• 25% of food-induced anaphylactic reactions in schools occurred without prior diagnosis
Diagnosis

- Typical symptoms occur within MINUTES to HOURS of ingestion
- Medical history and exam are KEY
- Tests for food-specific IgE
- Medically monitored food challenge
Differential Diagnosis

- Food Intolerance
- Oral Allergy Syndrome
- Eczema
- Eosinophilic Esophagitis
- Food Protein-Induced Enterocolitis Syndrome (FPIES)
Anaphylaxis

- Severe systemic reaction that is rapid and may cause death
  - IgE mediated $\rightarrow$ systemic release of mast cell and basophil mediators
    - Histamine and tryptase
  - Food and insect stings are most common triggers
Risk Factors for Fatal Food Reactions

- Allergens: Peanut, tree nuts, seafood
- Age: Teenagers, young adults
- Co-morbidities: Asthma
- Past Reactions are not Predictive
- DELAYED TREATMENT WITH EPINEPHRINE
Criteria for Diagnosing Anaphylaxis

- In minutes to hours after exposure to likely or known allergen:
  - Two or more of the following:
    - Skin/mucosal tissue involvement ➔ hives, itch/flush, swollen lips/tongue, uvula
    - Respiratory compromise ➔ dyspnea, wheeze/bronchospasm, stridor, hypoxemia
    - Reduced blood pressure ➔ hypotonia, syncope, incontinence
    - Persistent GI symptoms ➔ crampy abdominal pain, vomiting
  - Skin/mucosal tissue involvement AND
    - Respiratory compromise OR reduced blood pressure
    - Hypotension after exposure to known allergen
Management

- Education for Strict Avoidance
  - Label Reading
  - Cross Contact of Allergens
- Medical Identification
- Action Plans
- EPINEPHRINE
Extremely reactive to the following allergens:

**EXTREME REACTIONS:**
- It is checked, give epinephrine immediately if the allergen was LIKELY eaten, for ANY symptoms.
- It is checked, give epinephrine immediately if the allergen was DEFINITELY eaten, even if no symptoms are apparent.

**Mild Symptoms**
- **NOSE:** Itchy nose, sneezing
- **MOUTH:** Itchy mouth, mouth itchy
- **SKIN:** Mild rash or discomfort

**Severe Symptoms**
- **LUNG:** Shortness of breath, wheezing, recurrent cough
- **HEART:** Pale, flush skin, faintness, weak pulse, dizziness
- **THROAT:** Tight or hoarse throat, trouble breathing, or stridor
- **MOUTH:** Significant swelling of the tongue or lips
- **SKIN:** Redness, rash, hives

**Medications/Doses**
- **Epinephrine Brand or Generic:**
  - **Epinephrine Dose:** 0.15 mg IM
  - **Epinephrine Dose:** 0.3 mg IM
- **Antihistamine Brand or Generic:**
  - **Antihistamine Dose:**
- **Other (e.g., inhaler breathed/spray if wheezing):**
How to Use Auvi-Q® (Epinephrine Injection, USP), Kaleo
1. Remove Auvi-Q from the outer case.
2. Pull off red safety guard.
3. Place black end of Auvi-Q against the middle of the outer thigh.
4. Press firmly, and hold in place for 5 seconds.
5. Call 911 and get emergency medical help right away.

How to Use EpiPen® and EpiPen Jr® (Epinephrine) Auto-Injector, Mylan
1. Remove the EpiPen® or EpiPen Jr® Auto-Injector from the clear carrier tube.
2. Grasp the auto-injector in your fist with the orange tip (noodle end) pointing downward.
3. With your other hand, remove the blue safety release by pulling straight up.
4. Swing and push the auto-injector firmly into the middle of the outer thigh until it 'clicks'.
5. Hold firmly in place for 3 seconds (count slowly 1, 2, 3).
6. Remove and massage the injection area for 10 seconds.
7. Call 911 and get emergency medical help right away.

How to Use Epinephrine Injection (Authorized Generic of EpiPen®), USP Auto-Injector, Mylan
1. Remove the epinephrine auto-injector from the clear carrier tube.
2. Grasp the auto-injector in your fist with the orange tip (noodle end) pointing downward.
3. With your other hand, remove the blue safety release by pulling straight up.
4. Swing and push the auto-injector firmly into the middle of the outer thigh until it 'clicks'.
5. Hold firmly in place for 3 seconds (count slowly 1, 2, 3).
6. Remove and massage the injection area for 10 seconds.
7. Call 911 and get emergency medical help right away.

How to Use Impax Epinephrine Injection (Authorized Generic of Adrenaclick®), USP Auto-Injector, Impax Laboratories
1. Remove epinephrine auto-injector from its protective carrying case.
2. Pull off both blue end caps; you will now see a red tip.
3. Grasp the auto-injector in your fist with the red tip pointing downward.
4. Put the red tip against the middle of the outer thigh at a 90-degree angle, perpendicular to the thigh.
5. Press down hard and hold firmly against the thigh for approximately 10 seconds.
6. Remove and massage the area for 10 seconds.
7. Call 911 and get emergency medical help right away.

Administration and Safety Information for All Auto-Injectors:
1. Do not put your thumbs, fingers or hand over the tip of the auto-injector or inject into any body part other than mid-outer thigh. In case of accidental injection, go immediately to the nearest emergency room.
2. If administering to a young child, hold their leg firmly in place before and during injection to prevent injuries.
3. Epinephrine can be injected through clothing if needed.
4. Call 911 immediately after injection.

Other Directions/Information (may self-carry epinephrine, may self-administer epinephrine, etc.):

Trust the person before calling emergency contacts. The first signs of a reaction can be mild, but symptoms can worsen quickly.
Epinephrine Summary

- Should be available promptly, but within reason
- If allowable, child may carry pending risk benefit
- Antihistamines are comfort care, but DO NOT stop anaphylaxis
- Bronchodilators should not be depended on to treat anaphylaxis
- Argument for having unassigned dose available, pending local laws
Priorities for Managing Food Allergies

• Supervise daily management of individual students with food allergies
  • Identify children with food allergies
  • Develop a plan to manage and reduce risk of food allergy reactions in individual children
  • Help students manage their own food allergies
Priorities for Managing Food Allergies

- Prepare for and respond to emergencies
  - Set up communication systems that are easy to use
  - Ensure faculty can get to epinephrine auto-injectors quickly and easily
  - Prepare for reactions in children without a prior history of allergies
  - Use epinephrine when needed; emergency medical services contacted immediately
  - Document the response to a food allergy emergency
Priorities for Managing Food Allergies

• Provide professional development on food allergies to staff
  • Provide:
    • General training (signs/symptoms, how to access help)
    • In-depth training for those who frequent contact with children with food allergies
Priorities for Managing Food Allergies

• Create and maintain a healthy and safe school environment
  • Prevent unintended exposure to food allergens
  • Develop food handling policies and procedures to prevent unintentional exposures
  • Make outside groups aware of food allergy policies when using school facilities
  • Create a positive psychosocial climate
References


• Sicherer SH, Mahr TA; The Section on Allergy and Immunology. Management of Food Allergy in the School Setting. Pediatrics 2010; Dec; 126(6):1232-1239.