Anaphylaxis & EpiPen Update

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Dr Kymble Spriggs
MBBS, MPH, Harvard, DTMH, Lon, FRACP
Specialist Allergist & Clinical Immunologist

Case

- 13yo boy known nut allergy and adrenaline auto-injector; asthma using a steroid preventer intermittently, and salbutamol PRN.
- Recently had a “bit of a cold”
- Out for lunch at a birthday party, eating a range of party foods.
- Running around outside after lunch and rolling in the grass with friends.

Case (cont)

- Suddenly becomes wheezy and ask for his ventolin
- No other symptoms evident.
- Becomes increasing dyspneic with more ventolin used, and sits quietly and try still trying to catch his breath.

Take Home Messages

- 1. Allergy is a Spectrum - “you are not a car crash”
- 2. The treatment of Anaphylaxis is IM adrenaline
- 3. Asthma is an issue!
- 4. Specialist assessment
- 5. EpiPen (re)training

What is Anaphylaxis?

- Severe acute allergic reaction
- Many possible clinical manifestations
- Potentially life-threatening

Allergy is a Spectrum

- Difference between anaphylaxis and other allergic reactions is severity.
- Underlying process is the same.
- Calling someone “anaphylactic” doesn’t make sense.
  - “Dangerous driver” vs “car crash” cf. “very allergic” vs “had anaphylactic reaction”
- Severity of reaction is a result of individual sensitivity, allergen dose, and context
Anaphylaxis does predict future anaphylaxis

- Prior anaphylaxis, is a risk factor for future
- *But*, anaphylaxis may occur after previously less severe reactions

Mast Cells

- Live in skin, lining of nose, mouth, rest of gut
- Contain granules filled with many preformed substances e.g. histamine, heparin, tryptase etc.

**Immediate Allergic Reactions**

- Mast Cell
- Allergen (e.g. peanut protein)

**Immediate Allergic Reactions**

- Histamine (and other mediators) released.
- Allergic Symptoms

**Causes of mast cell degranulation**

- IgE-mediated (classical allergy)
- Other processes (mastocytosis, autoimmune, physical, idiopathic)

- Direct mast cell activation (e.g. some drugs, toxins)

- Degranulation
- Symptoms
Causes of mast cell degranulation

- Direct mast cell activation (e.g., some drugs, toxins)
- IgE-mediated (classical allergy)
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Australasian Anaphylaxis Definition

- Any acute onset illness with typical skin features (urticarial rash or erythem/flushing, and/or angioedema), PLUS involvement of respiratory and/or cardiovascular and/or persistent severe gastrointestinal symptoms; or
- Any acute onset of hypotension or bronchospasm or upper airway obstruction where anaphylaxis is considered possible, even if typical skin features are not present.

The treatment of Anaphylaxis is IM Adrenaline

- Intramuscular (IM) adrenaline is a safe medication (cf IV)
- Duration of action lends itself to patient controlled interim management step
- Improved outcomes if used early (i.e., prevent degranulation)

How adrenaline works in anaphylaxis

- Adrenaline binding to β receptors
- Mast cell stabilisation
- Prevention of degranulation

ASCIA Anaphylaxis Management Plan

Download at www.allergy.org.au
Antihistamines

- Modern non-drowsy - extremely useful for treating mild to moderate allergic reactions.
- Avoid older drugs (e.g. phenergan) where drowsiness complicates diagnosis of progression to anaphylaxis.
- Antihistamines are not the treatment for severe allergic reactions (anaphylaxis).

Asthma is a (treatable) issue!

- Incompletely controlled asthma makes a systemic allergic reaction worse.
- Unfortunate alignment of incomplete asthma management/adherence; with risk taking behaviour [adolescents]
- Treatable! → Preventer Promotion! [ie inhaled corticosteroids]

Who needs specialist assessment?

- Patients experiencing anaphylaxis/severe reactions
- Patients with generalised allergic symptoms on minimal allergen exposure, [ie Early allergic spectrum - with minimal dose triggers]
- Patients with food allergy and concomitant persistent asthma
Specialist Assessment

- Severe Allergic Reactions/Anaphylaxis warrant specialist assessment
- Consideration of:
  - Specific Sensitivity Clarification
  - Avoidance strategies
  - Allergen Specific Immunotherapy
  - Co-factors
  - Other contributory conditions (e.g. mastocytosis, AERD, CSU&A)
- Review schedule as appropriate tailored to individual

EpiPen (re)training

- Available Autoinjectors in Australia:
  - Epipen (300mcg) yellow
  - Epipen Jr (150mcg) green
  - Epipen (300mcg) [Yellow] is for all people > 20 kg

“New” Epipen

- Same holster and format
- Same expiry and window
- NEW timing - 3 second

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Thank you for your attention

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FRACP
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www.avidallergy.com