Anaphylaxis

An IgE mediated potentially life-threatening severe allergic reaction which may progress to shock and severe airway compromise

Background

The most common causes of anaphylaxis in children include:

- **Foods**: Peanut, tree nut, egg, cow’s milk, soy, wheat, sesame seeds, fish and seafood
- **Insect stings and bites**: Bees, wasps, hornets, jack jumper ants, fire ants
- **Latex**
- **Drugs**: Penicillin, NSAIDS, Aspirin, anaesthetic agents, radiographic contrast media
- **Exercise**, also in combination with certain foods, heat, cold, pressure

Risk factors

- Asthma

Assessment

- Asthma: asthmatics are more likely to have more severe respiratory problems during anaphylaxis. In particular in combination with food allergy (especially to peanuts and...
Examination

Symptoms of allergic reactions are categorised as mild, moderate or as anaphylaxis (= severe):

<table>
<thead>
<tr>
<th>Clinical Features</th>
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<tbody>
<tr>
<td>Mild/moderate allergic reaction</td>
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<tr>
<td>- Swelling of the lips, face, eyes</td>
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<tr>
<td>- Tingling mouth</td>
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<td>- Hives or welts</td>
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<tr>
<td>- Abdominal pain – abdominal pain and vomiting can be a sign of anaphylaxis in insect allergy</td>
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<tr>
<td>Anaphylaxis (Only one feature may manifest)</td>
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<tr>
<td>- Difficulty breathing</td>
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<tr>
<td>- Tongue swelling</td>
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<tr>
<td>- Swelling / tightness in the throat</td>
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<tr>
<td>- Difficulty speaking / hoarse voice</td>
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<td>- Wheeze or persistent cough</td>
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<tr>
<td>- Persistent dizziness</td>
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<tr>
<td>- Pale and floppy (in young children)</td>
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<tr>
<td>- In insect allergy: abdominal pain and vomiting</td>
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</tbody>
</table>

Management

- Ensure the allergen is removed
- Assess ABC and take the blood pressure
- Give high flow oxygen
- Lay the patient flat, if there is respiratory distress then the patient can sit upright
- Do not allow the patient to stand or walk

Initial management

Anaphylaxis:

- Give intramuscular (IM) Adrenaline (1:1000 strength = 1mg/mL)
  - Dose: 0.01mg/kg
  - Maximum dose: 0.5mg

Shock:
• Insert two large IV cannulas and give 20mL/kg of 0.9% saline bolus. Repeat as necessary.
• Consider starting an Adrenaline infusion if the patient remains hypotensive after 40mL/kg of 0.9% saline
• PICU referral

Upper Airway Obstruction:

• Give 5mL of nebuliser Adrenaline (strength 1:1000 = 1mg/mL)
• Consider need for intubation and prepare equipment
• Consider Adrenaline infusion
• PICU referral

Persistent Wheeze:

• Give Salbutamol via spacer:
  ○ 6 puffs < 6 years
  ○ 12 puffs ≥ 6 years
• Consider Adrenaline infusion
• PICU Referral

Further management

• Consider antihistamines for itch and urticaria 0.15mg/kg Loratadine (maximum 10mg)
• Consider prescribing a 2 day course of Prednisolone (1mg/kg) to reduce the risk of symptom recurrence after a severe reaction
• Prescribe 2 Epipens (autoinjector) to all patients > 10kg
  ○ Use PBS script pad and get authorisation from Canberra.
  ○ Contact number: 1800 888 333 (available 24 hours)
• Educate parents on the use of the Epipen and provide ASCIA Action Plans for Anaphylaxis

Admission criteria

• If the child is hypotensive or hypoxic admit to the ward, consider PICU referral
• If the child is not hypotensive or hypoxic admit to the ED Observation Ward (4E) for a minimum of 4 hours post Adrenaline
• Do not discharge overnight

Observe for a longer period of time if there is:

• History of asthma
• Protracted anaphylaxis
• > 1 dose of Adrenaline required
• Other concomitant illness

**Referrals and follow-up**

• Refer to a specialist allergy clinic – either a Private Immunologist or Immunology Outpatient Clinic at PMH

**Tags**

abdominal pain, adrenaline, allergic, allergy, anaphylaxis, antihistamine, ascia, bronchospasm, epipen, food, hives, hypotension, latex, peanuts, rash, reaction, severe allergic reaction, steroids, stings, swelling, tingling, urticarial, vomiting, wheeze

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