Anaphylaxis / acute allergic reaction

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Approved by the Medicines Governance Group October 2019

Publication date: October 2019
Review date: October 2021

Anaphylaxis?
- Compatible history – recent allergen exposure
- Sudden onset and rapid progression of symptoms
- Life-threatening Airway &/or Breathing &/or Circulation problems
- Skin and / or mucosal changes are not always present (flushing / urticarial / angioedema)

Assess A, B, C, D, E

CALL for help – call 2222 for cardiac arrest team if needed.
Establish airway
OXYGEN 100% via face mask and non-rebreath bag
LIE patient flat

Give I.M adrenaline
10 micrograms / kg = 0.01 ml/kg of 1:1000 (max 500 micrograms)
or
> 12 years: 500 micrograms (0.5 ml)
6 – 12 years: 300 micrograms (0.3 ml)
< 6 years: 150 micrograms (0.15 ml)
Repeat after 5 minutes if no better. Discuss patient with STRS if needing repeated adrenaline doses / infusion

Adrenaline IV to be given only by experienced specialists:
Titrate 1 microgram/kg

Post initial resuscitation

Chlorphenamine (IM or slow IV)
> 12 years: 10 mg
6 – 12 years: 5 mg
6 months – 6 years: 2.5 mg
< 6 months: 250 micrograms/kg

Hydrocortisone (IM or slow IV)
> 12 years: 200 mg
6 – 12 years: 100 mg
6 months – 6 years: 50 mg
< 6 months: 25 mg

Anaphylaxis
- Airway: swelling, hoarseness, stridor
- Breathing: tachypnoea, wheeze, fatigue, cyanosis, O₂ sats < 92%, confusion
- Circulation: pale, clammy, tachycardia, hypotension, drowsy / floppy / coma

Monitor:
- Pulse oximetry
- ECG
- Blood pressure

Consider I.V fluid bolus
20 ml/kg 0.9% sodium chloride
May require repeated boluses

Consider nebulised salbutamol / ipratropium if wheezy
Investigation and post-resuscitation management:

1. Ensure appropriate documentation. Record:
   - the acute clinical features of the suspected anaphylactic reaction
   - time of onset of the reaction
   - the circumstances immediately before the reaction to identify the possible trigger
   - the treatments provided
   - the follow up and safety netting provided

2. Take a mast cell tryptase level (yellow-top clotted sample to biochemistry) if there is any diagnostic doubt (NICE recommends this should be done in all children):
   - as soon as possible after treatment is started
   - second sample within 1 – 2 hours (no later than 4 hours) from onset of symptoms

   This is a non-specific indicator of mast cell activation; it aids the diagnosis of an anaphylactic episode. **(Do not delay resuscitation to take the sample)**

3. Observe for at least 6 hours after anaphylactic reaction

   In CED this will necessitate a short stay unit admission. Patient should be reviewed by a senior clinician pre-discharge.

   In some circumstances patients should be admitted for up to 24 hours. This may include:
   - Severe reactions with slow onset caused by idiopathic anaphylaxis.
   - Reactions in individuals with severe asthma or with a severe asthmatic component.
   - Reactions with the possibility of continuing absorption of allergen.
   - Patients with a previous history of biphasic reactions.
   - Patients presenting in the evening or at night, or those who may not be able to respond to any deterioration.

Not anaphylaxis?

**Mild to moderate allergic reaction**

Includes 1 or more of (may occur at same time):

- Urticaria, flushing
- A tingling feeling in or around the mouth
- Abdominal pain, vomiting and / or diarrhoea.
- Facial swelling

Treat symptomatically with chlorphenamine +/- oral prednisolone or dexamethasone

Consider referral to allergy clinic if significant reaction.
Discharge and follow up:

1. Consider prescribing a course of oral anti-histamines and prednisolone for up to 3 days. May be helpful for treatment of urticaria, and may decrease the chance of further reaction.

2. All children who have had a suspected or proven anaphylactic reaction should be referred to the allergy clinic (fill out an OPD form if discharged from CED; or on the Medway discharge letter if admitted). Mark the referral as “urgent” – within 6 – 8 weeks.
   - Provide blood test form for baseline mast cell tryptase to be taken before clinic appointment (parent can book blood test with level 5 outpatient nursing staff).

3. Adrenaline auto-injector (AAI) pens should be provided to the following children following an anaphylactic reaction:
   a. Those at increased risk of idiopathic reaction i.e. unknown cause; or
   b. Those at continuing high risk of reaction (e.g. venom stings, food allergies)

   The Respiratory specialist nurses will provide definitive training in AAI use.

   In hours: Bleep 8914 to request training
   Out of hours: Telephone 62518 / 62519 / 63127 and leave a message on the answering machine with patient’s contact details to arrange training at the earliest opportunity. ENSURE THIS IS DONE BY THE ASSESSING CLINICIAN PRIOR TO CHILD BEING ADMITTED.

   In the meantime, discharge patient with the training pack (DVD, dummy AAI) available in the CED storeroom and an outpatient prescription for:
   - Adrenaline auto-injector x 2 (1 to be kept with child / parent; 1 to be kept at school)
   - 150 micrograms for children up to 30 kg; 300 micrograms for children > 30 kg (300 micrograms may be more appropriate for some children 15 – 30 kg); 500 micrograms for older children and adolescents.

4. Provide child and carer information about:

- anaphylaxis and the signs and symptoms of an anaphylactic reaction
- the risk of a biphasic reaction
- what to do if an anaphylactic reaction occurs
- how to avoid the suspected trigger
- the allergy clinic referral
- patient support groups (allergy UK, Anaphylaxis campaign https://www.anaphylaxis.org.uk/)
5. Print off and give child and carer a written anaphylaxis management plan.  
   This is available from https://bsaci.worldsecsuresystems.com/about/download-paediatric-allergy-action-plans

6. Advise child and carer to attend their GP surgery in 2 weeks to discuss any follow-up questions with their GP / practice nurse.

7. Report reaction to the MHRA using the yellow card reporting scheme if reaction was to a medicine including vaccines, herbal remedies or homeopathic remedies: https://yellowcard.mhra.gov.uk

Notes

References: