RESUSITATION

ANAPHYLAXIS

Definition/ Pathophysiology

- Anaphylaxis is a life- threatening, systemic, type 1 hypersensitivity reaction
- It is caused by an antigen binding to IgE antibodies of mast cells. Mast cells are tissue dwelling granulocytes usually involved in combating parasitic infection
- This triggers massive histamine and cytokine release.
- These inflammatory mediators cause bronchial smooth muscle contraction, vasodilation, increased capillary wall leakage and myocardial depression.

Features

Anaphylaxis is likely when all three of the following criteria are met especially in the context of exposure to a known allergen:

- Sudden onset with rapid progression
- Life- threatening airway +/- beathing+/- circulatory problems
- Skin and mucosal changes (flushing, uritcaria and angioedema)

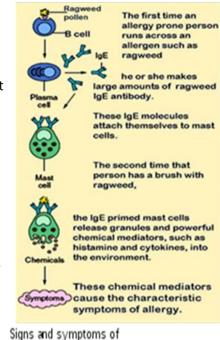
Skin signs may not be present and are highly variable.

- A= Facial, tongue and laryngeal angioedema
- **B=** Dyspnoea, wheeze, cyanosis
- C= Tachycardia, hypotension and ultimately cardiac arrest (often PEA)

ABC problems cause decreased cerebral perfusion and subsequent confusion, agitation and loss of consciousness.

Common triggers include drugs, foods and animals especially venom e.g. bees/ wasps. **Mean time to cardiac arrest:**

- IV drugs= 5mins
- Venom= 15mins
- Foods= 30mins



Signs and symptoms of Anaphylaxis

Swelling of the conjunctiva

Swelling of lips,

low blood pressure

Skin

hives

- itchiness

flushing

Pel∨ic pain

tongue and/or throat

Runny nose

Central nervous system

- lightheadedness
- -loss of consciousness
- confusion
- headache
- anxiety

Respiratory
- shortness of breath

- shortness of breat - fast or slow heart rate - wheezes or stridor
 - · hoarseness
 - marzeness
 - pain with swallowing
 - cough

— Ga strointe stinal

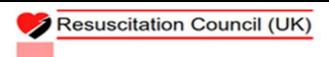
- crampy abdominal pain
- diarrhea
- ularinea
- vomiting

Loss of bladder control

Management

- The mainstay of treament is Adrenaline. This is given as **0.5ml of 1:1000 IM** into the **anterolateral aspect** of **mid thigh**. Give **immediately** on diagnosising Anaphylaxis i.e. **comes BEFORE AIRWAY.**
- Then follow usual ABCDE algorithm.
- Give IV corticosteroid (hydrocortisone) and IV antihistamine (chlorphenamine)
- IV crystalloid fluid challenge up to 1L and reassess.

 Do not give colloids and stop these if they are running, colloids are allergenic.



Anaphylaxis algorithm

Anaphylactic reaction?

Airway, Breathing, Circulation, Disability, Exposure

Diagnosis - look for:

- Acute onset of illness
- Life-threatening Airway and/or Breathing and/or Circulation problems
- And usually skin changes
 - Call for help
 - Lie patient flat
 - Raise patient's legs

Adrenaline²

When skills and equipment available:

- Establish airway
- High flow oxygen
- IV fluid challenge
- Chlorphenamine
- Hydrocortisone

Monitor:

- Pulse oximetry
- ECG
- Blood pressure

1 Life-threatening problems:

Child less than 6 years:

Airway: swelling, hoarseness, stridor

Breathing: rapid breathing, wheeze, fatigue, cyanosis, SpO2 < 92%, confusion

Circulation: pale, clammy, low blood pressure, faintness, drowsy/coma

2 Adrenaline (give IM unless experienced with IV adrenaline) IM doses of 1:1000 adrenaline (repeat after 5 min if no better)

500 micrograms IM (0.5 mL)

Child more than 12 years: 500 micrograms IM (0.5 mL)

 Child 6 -12 years: 300 micrograms IM (0.3 mL)

Titrate: Adults 50 micrograms; Children 1 microgram/kg

3 IV fluid challenge:

Adult - 500 - 1000 mL Child - crystalloid 20 mL/kg

Stop IV colloid if this might be the cause of anaphylaxis

Adrenaline IV to be given only by experienced specialists

4 Chlorphenamine 5 Hydrocortisone (IM or slow IV) (IM or slow IV) 10 mg 200 mg Adult or child more than 12 years Child 6 - 12 years 5 mg 100 mg 2.5 mg Child 6 months to 6 years 50 mg Child less than 6 months 250 micrograms/kg 25 mg

150 micrograms IM (0.15 mL)