ANAPHYLAXIS

RECOGNISE EARLY

AIRWAY	- Upper airway oedema
	- Difficulty speaking/swallowing
	- Hoarse voice/stridor
BREATHING	- Bronchospasm
	- Dyspnoea
	- Respiratory arrest
CIRCULATION	- Cardiovascular collapse
NEUROLOGICAL	- Throbbing headache
	- Dizziness/LOC
GIT	- Nausea, vomiting, diarrhoea
	- Abdominal pain
CUTANEOUS	- Nasal congestion, conjunctival erythema, tearing
	- Itch.
	- Flushing/urticaria
	- Facial oedema

DIFFERENTIAL DIAGNOSIS

Any cause of hypotension, eg
- Sepsis
- Toxic Shock Syndrome
- Hypovolaemia

Definitions according to the World Allergy Organisation	
Hypersensitivity	Objectively reproducible symptoms or signs initiated by exposure to a defined stimulus at a dose tolerated by normal persons.
Allergy	Hypersensitivity initiated by specific immunological mechanisms (antibody or cell mediated). When other mechanisms can be proven, the term non-allergic hypersensitivity should be used. Cell-mediated allergy produces a delayed response to allergen.
Atopy	A personal and/or familial tendency to become sensitised and produce IgE antibodies in response to ordinary exposures of commonly encountered environmental allergens. This results in the development of asthma, rhinoconjunctivitis or eczema. Note that an allergic IgE response on its own does *not* define the condition of atopy.
Anaphylaxis	A severe, life-threatening generalised or systemic hypersensitivity reaction. This might be sub-classified as *allergic* (eg mediated by IgE, IgG or immune complexes) or *non-allergic.* Allergic anaphylaxis mediated by IgE antibodies is referred to as *IgE-mediated anaphylaxis.*

ANAPHYLAXIS

DOES YOUR PATIENT HAVE ANAPHYLAXIS?

A consensus working definition of anaphylaxis derived from the Second NIAID/FAAN Symposium

A reaction might be classified as anaphylaxis if it satisfies any one of the following three definitions:

1. Acute-onset illness (minutes to hours) with involvement of skin and/or mucosa (*generalised* hives, pruritus or flushing, swollen lips and/or tongue) AND AT LEAST ONE OF THE FOLLOWING:
   - Respiratory compromise (dyspnoea, wheeze, bronchospasm, stridor, hypoxaemia) OR
   - Hypotension or associated symptoms of end-organ dysfunction (eg, collapse, syncope, incontinence).
2. Two or more of the following within minutes to a few hours of exposure to a *likely* allergen for that patient:
   - Skin or mucosal involvement as above.
   - Airway compromise as above.
   - Hypotension or associated symptoms as above.
   - Persistent gastrointestinal symptoms (eg cramping abdominal pains, vomiting).
3. Hypotension within minutes to several hours following exposure to a *known* allergen for that patient:
   - Absolute: 0-1 year <70 mmHg; 1-10 years <70 + 2 x age) mmHg; ≥11 years <90 mmHg
   - Relative: ≥30% drop from baseline.

TREATMENT

STEP 1.

- Stop precipitant if possible.
- Call for help.
- High flow 02—support airway/breathing.
- Administer Adrenaline 0.5mg IM.
- Establish IV access.
- If patient hypotensive administer an initial bolus of 20 ml/kg normal saline stat.

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ADEQUATE RESPONSE → **NO**

YES

Admit and observe for a minimum of 8 hours.

Notify FACEM if have not already done so.

STEP 2.

- Repeat Adrenaline 0.5 mg IM every 3 minutes until an adrenaline infusion can be established.

Adrenaline Infusion

- Place 6 mg Adrenaline in 100 ml N/saline
  ∴ 1 ml = 60 mcg.
- Start infusion at 0.1—0.2 ml/kg/hr.
- Titrate according to response.
- DO NOT exceed an administration dose of >0.5 ml/kg/hr without prior approval of a FACEM/Intensivist.

Hypotension

- Repeat N/saline boluses 10-20 ml/kg as required.
- Consider atropine 0.02 mg/kg if patient bradycardic.
- Consider use of vasopressin in persistent hypotension resistant to adrenaline and fluids. (Consultant use only).
- Consider use of glucagon in persistent hypotension resistant to adrenaline, fluids and vasopressin. Glucagon dose is 1-5 mg over 5 mins followed by an infusion at 5-15 µg/min.

Upper Airway Obstruction

- Nebulised Adrenaline may be useful (5 mg/5 ml).
- Prepare for possibility of surgical airway.

Bronchospasm

- Continuous salbutamol by nebuliser.
- Hydrocortisone 5 mg/kg 6 hourly IV followed by prednisone 1 mg/kg (max 50 mg) for 4 days.

ANAPHYLAXIS

AFTERCARE

- Observe for a minimum of 8 hours after resolution of all symptoms and signs.
- Prior to discharge discuss with patient:
  - Allergen avoidance measures.
  - Medic alert bracelets.
  - Follow-up arrangements with an allergy specialist.
- All patients who have had a life-threatening event or a significant risk of re-exposure must have arrangements for an EpiPen made prior to discharge.

EPIPEN

Prescription of an EpiPen should ideally be left to an allergy specialist. However, where the patient has had a life-threatening event, and the risk to re-exposure is high and access to an allergy specialist is limited, this should be organised from the Emergency Department.

If an EpiPen is prescribed, you must ensure:

- Patient understands how to use it.
- Patient has written instructions on use of the EpiPen prior to discharge.
- Patient has a written Action Plan for Anaphylaxis.
- Patient has follow-up appointments made with an allergy specialist or their GP.

ANTIHISTAMINES

- No use in anaphylaxis.
- May be useful for mild allergic reactions involving the skin only.
- Glucocorticoids - not treat acute phase + RCT's have failed to demonstrate benefit

DO NOT USE PHENERGAN— IT IS A VASODILATOR

TAKE HOME MESSAGE

FLUIDS

AND

ANDRENALINE

Are the keys to successful resuscitation

REFERENCE

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