Peri-operative anaphylaxis

For anaesthetists/intensivists

A = Airway **B** = Breathing **C** = Circulation **D** = Disability **E** = Exposure

Diagnosis – look for:

- Unexplained hypotension, tachycardia, bradycardia, bronchospasm (wheeze may be absent if severe)
- Unexpected cardiorespiratory arrest where other causes are excluded
- Skin signs are often absent in severe reactions

Call for HELP

Stop/remove non-essential surgery. Call for cardiac arrest trolley

Stop/remove suspected triggers if possible

e.g. Antibiotics, NMBAs, dyes, colloids, chlorhexidine coated lines/catheters, lubricants , latex

Give initial IV bolus of adrenaline

Adult and child > 12 years: 50 micrograms IV (0.5 mL IV of 1 mg/10 mL [1:10,000])

Child < 12 years: 1 microgram/kg, needs careful dilution, titrate to effect

If no IV access: 10 micrograms/kg IM, (max 500 micrograms IM) of 1 mg/mL (1:1,000), and secure IV/IO access

If in doubt, give adrenaline

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Give rapid IV fluid bolus

Adult and child > 12 years: 500–1000 mL

Child < 12 years: 20 mL/kg

- Multiple fluid boluses may be needed (e.g. up to 3-5 L in adults, 60-100 mL/kg in children)
- Avoid colloid

If poor response to adrenaline boluses, start IV infusion*

Involve ICU team early

If systolic BP < 50 mmHg or cardiac arrest, start CPR

A B = Airway/Breathing

Give 100% oxygen Ensure sustained $ETCO_2$ trace. Change to inhalational anaesthetic if appropriate.

Severe/persistent bronchospasm:

- Exclude oesophageal intubation
- Check patent airway and anaesthetic circuit
- Nebulised salbutamol and ipratropium
- Consider IV bronchodilator

C = Circulation

Hypotension may be resistant, requiring prolonged treatment with large volume resuscitation

- Give further fluid boluses, titrate to response
- Consider head-down table-tilt or elevating legs
- Establish invasive monitoring as soon as practical

IF REFRACTORY TO ADRENALINE INFUSION:

- Add a second vasopressor (noradrenaline or vasopressin) **in addition** to adrenaline
- Consider glucagon 1 mg IV in adults on beta-blockers
- Consider steroids for refractory reactions or shock
- Consider extracorporeal life support

Immediate follow-up

- Take blood (clotted) for serum tryptase once stable
- Request further samples 1–4 hours after onset of symptoms, and at least 24 hours later
- Complete allergy referral form: **bit.ly/NAP6referral**
- If surgery is urgent or time-critical and patient is stable, proceed with surgery but avoid suspected triggers
- Refer fatal cases to **bit.ly/UKFAR**

***Use local protocol for adrenaline infusion**

(Peripheral infusion recommended if no central venous access)

OR

Peripheral low-dose IV adrenaline infusion (if no local protocol):

0.5 mg (0.5 mL of 1 mg/mL [1:1000]) in 50 mL

- In both adults and children, start at 0.5–1.0 mL/kg/hour, and **titrate according to clinical response**
- Continuous monitoring and observation is mandatory

Resuscitation Council UK

Association of Anaesthetists

BSACI Improving Allergy Care through education, training and research

British Society for Immunology CIPN Clinical Immunology Professional Network

RCoA Royal College of Anaesthetists

Perioperative Allergy Network