

3-1 Anaphylaxis v.5

- Unexplained hypotension
- Unexplained bronchospasm (*wheeze may be absent if severe*)
- Unexplained tachycardia or bradycardia

- Angioedema (*often absent in severe cases*)
- Unexpected cardiac arrest where other causes are excluded
- Cutaneous flushing in association with one of more of the signs above (*often absent in severe cases*)

START

- 1 Call for help. Note the time. Stop or do not start non-essential surgery.
- 2 Call for cardiac arrest trolley, anaphylaxis treatment pack and investigation pack.
- 3 Remove all potential causative agents and maintain anaesthesia.
 - Important culprits: antibiotics, neuromuscular blocking agents, patent blue.
 - Consider chlorhexidine as cause (impregnated catheters, lubricants, cleansing agents).
 - Consider i.v. colloids as a possible cause.
 - Change to inhalational anaesthetic agent (if not already).
- 4 Give 100% oxygen and ensure adequate ventilation:
 - Maintain the airway and, if necessary, secure it with tracheal tube.
- 5 Elevate patient's legs if there is hypotension.
- 6 If systolic blood pressure < 50 mmHg or cardiac arrest, start CPR immediately.
- 7 Give drugs to treat hypotension (Box A):
 - **Hypotension may be resistant and may require prolonged treatment.**
 - Give adrenaline bolus and repeat as necessary.
 - Consider starting an adrenaline infusion after three boluses.
 - If hypotension resistant, give alternate vasopressor (e.g. metaraminol, noradrenaline infusion +/- vasopressin)
 - Give glucagon in β -blocked patient unresponsive to adrenaline.
 - Hydrocortisone and chlorphenamine are no longer part of acute treatment (Box C)
- 8 Give rapid i.v. crystalloid:
 - 20 ml.kg⁻¹ initial bolus, repeated until hypotension resolved.
 - Fluid requirements may be significant
- 9 If bronchospasm is persistent, consider → 3-4
- 10 Take 5-10 ml clotted blood sample for **serum tryptase** as soon as patient is stable.
 - Plan for repeat sample at 1-2 hours and >24 hours.
- 11 Plan transfer of the patient to an appropriate critical care area. Note tasks in Box D.
- 12 Prevent re-administration of possible trigger agents (allergy band, annotate notes/drug chart)

Box A: DRUGS TO TREAT HYPOTENSION IF CARDIAC ARREST → 2-1

- Adult adrenaline: i.v. 50 μ g (= 0.5 ml of 1:10 000)
i.m. 0.5 mg (= 0.5 ml of 1:1000) if i.v. not possible
- Paediatric adrenaline: i.v. 1.0 μ g.kg⁻¹ (0.1 ml.kg⁻¹ of 1:100 000)
[1:100 000 solution made by diluting 1 ml of 1:10 000 up to 10 ml]
- If no i.v. access, intraosseous adrenaline dose same as i.v.
- Suggested adrenaline infusion regimes (adult):
5 mg in 500 mL dextrose = 1:100 000, titrate to effect
3 mg in 50 mL saline. Start at 3 ml.h⁻¹ (= 3 μ g.min⁻¹), titrate to maximum 40 ml.h⁻¹ (= 40 μ g.min⁻¹)
- Glucagon (adult): 1 mg, repeat as necessary
- Vasopressin (adult): 2 units, repeat as necessary (consider infusion)

Box B: CRITICAL CHANGES

CARDIAC ARREST → QRH SECTION 2-1

Box C: HYDROCORTISONE and CHLORPHENAMINE CHANGES

AFTER initial resuscitation:

- Consider steroids for refractory reactions or ongoing asthma/shock.
- Antihistamines (preferably oral, non-sedating) can be given for skin symptoms.

Box D: DON'T FORGET

- Repeat testing for serum tryptase at 1-2 hours and >24 hours.
- Liaise with hospital laboratory about analysis of samples.
- Liaise with department anaphylaxis lead regarding referral to a specialist allergy or immunology centre to identify the causative agent (see www.bsaci.org for details).
- Inform the patient, surgeon and general practitioner.
- Report to MHRA (<https://yellowcard.mhra.gov.uk>).
- NAP6 online resource including anaphylaxis follow-up packs: <http://www.nationalauditprojects.org.uk/NAP6-Resources#pt>