2-4 a Anaphylaxis v.1

Anaphylaxis is a life-threatening hypersensitivity reaction featuring rapidly developing hypotension and tachycardia, and potentially life threating airway obstruction or bronchospasm. **Common causative agents**: antibiotics, anaesthetic agents, IV colloids, blood products. Latex: catheters, dressings, gloves. Chlorhexidine: skin preparation, impregnated lubricants, or catheters

START

1. **Call for help** (obstetrician, midwife, anaesthetist +/- neonatal team +/- cardiac arrest team)
   - **Ask**: "who will be the team leader?"
   - **Team leader assigns** checklist reader and scribe
   - **Note time**
2. **Assess clinical status using the ABCDE approach**
   - Position woman appropriately (**Box A**)
   - Check airway –*then*– give high flow oxygen
   - If airway involvement ➔ call anaesthetics/ICU
   - Start continuous monitoring: SpO_2, respiratory rate, 3-lead ECG and blood pressure
3. **Treat anaphylaxis**
   - Give adrenaline 500 mcg IM. If no improvement ➔ repeat at 5 minute intervals (**Box B**)
   - Give rapid IV crystalloid bolus
   - Remove any suspected causative agents
4. **Assess response**
   - If no improvement in cardiac or respiratory symptoms after two doses of IM adrenaline state 'refractory anaphylaxis' –*then*– ➔ **2-4b**
5. **Take mast-cell tryptase sample**
   - 5-10 mL clotted blood drawn as soon as feasible following initial resuscitation
6. **Consider transfer of the woman to critical care setting**
7. **Start post event action** (**Box C**)

Box A: Position

If cardiovascular compromise. Lie flat, tilt bed head down

Avoid aortocaval compression:

- Place in full left lateral position**; *or***
- Supine with manual uterine displacement; *or*
- 15° lateral tilt (if bed/operating table permits)

If respiratory problems without cardiovascular compromise:

- Place in sitting position

Box B: Drug doses and treatments

- **Adrenaline bolus** *500 micrograms IM (0.5 mL of 1:1000 adrenaline) to anterolateral aspect of mid-thigh –*or*– [specialist use] 50 micrograms IO/IV with appropriate monitoring.

**IM generally preferred; IV/IO adrenaline ONLY to be given by experienced specialists*

- **Oxygen** 15 L/min via reservoir mask –*then*– titrate to SpO_2 94-98%
- **Crystalloid bolus** e.g., 500-1000 ml Hartmann's titrate to response **(reduce to 250-500 ml if pre-eclamptic)**

Box C: Post event actions

- Stop suspected triggers currently prescribed
- Take 2nd tryptase sample at 1-2 hrs, and 3rd after 24 hrs
- Consider cetirizine (10-20 mg PO) for cutaneous symptoms
- Make referral to a specialist allergy clinic or immunology centre to identify the causative agent (see www.bsaci.org)
- Report anaphylactic drug reactions (www.mhra.gov.uk)
- Inform the woman and her GP

Box D: Critical changes

Refractory anaphylaxis ➔ **2-4b**

Cardiac arrest ➔ **1-1**

2-4b Refractory Anaphylaxis v.1

Refractory anaphylaxis exists where a woman shows no improvement in cardiovascular or respiratory symptoms after two appropriate doses of IM adrenaline

START

1. **Call for anaesthetics/ICU** if not already present
2. **Start continuous monitoring** if not already started
   - SpO_2
   - 3-lead ECG
   - Blood pressure checks on automatic cycle (at least every 5 minutes)
   - Continuous fetal monitoring
3. **Start adrenaline infusion (Box A)**
   - Repeat adrenaline boluses at 5 minute intervals until infusion started
4. **Check response to treatment**
   - If ongoing shock ➔ give rapid bolus(es) of IV crystalloid *–and–* give steroid treatment (**Box A**)
   - If severe or persistent wheeze ➔ give nebulised salbutamol *–and–* give steroid treatment (**Box A**)
   - If systolic BP < 50mmHg commence CPR
5. **Take mast-cell tryptase sample**
   - 5-10 ml clotted blood drawn as soon as feasible following initial resuscitation
   - Second sample 1-2 hours (no later than 4 hrs) after initial reaction
6. **Transfer the woman to a critical care setting**
7. **Start post event actions** (**Box C**)

Box A: Drug doses and treatments

- **Adrenaline bolus** *500 micrograms IM to anterolateral aspect of mid-thigh *–or–*[specialist use] 50 micrograms IO / IV

IM generally preferred; IV/IO adrenaline **ONLY to be given by experienced specialists*

- **Adrenaline infusion** †check local protocol *–or–* 1 mg in 100 ml 0.9% sodium chloride via peripheral IV; start at 0.5 - 1.0 ml/kg/hr

†Only for refractory anaphylaxis

- **Salbutamol** 5 mg nebulised
- **Oxygen** 15 L/min via reservoir mask *–then–* titrate to SpO_2 95-98%
- **Crystalloid bolus** e.g., 500-1000 ml Hartmann's titrate to response (Reduce to 250-500 ml if pre-eclamptic)
- **Steroid** Prednisolone PO 40 mg if possible *–or–* Hydrocortisone 100 mg IV if PO route unavailable
- **Glucagon** 1mg IV repeat as necessary if ß-blocked woman unresponsive to adrenaline

If hypotension resistant experienced specialist to consider alternative vasopressor e.g., metaraminol, noradrenaline +/- vasopressin

- **Vasopressin** 2 units repeat as necessary (consider infusion)

Box B: Critical changes

- **Obstetric cardiac arrest ➔ 1-1**

Box C: Post event actions

- Stop suspected triggers currently prescribed.
- Take 2nd tryptase sample at 1-2 hrs, and 3rd after 24 hrs
- Consider cetirizine for cutaneous symptoms
- Make referral to a specialist allergy clinic or immunology centre to identify the causative agent (see www.bsaci.org)
- Report anaphylactic drug reactions (www.mhra.gov.uk)
- Inform the woman and her GP