## **Obstetric Anaphylaxis**

## **Anaphylaxis?**







## Diagnosis - look for:

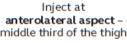
- · Sudden onset of Airway and/or Breathing and/or Circulation problems1
- And usually skin changes (e.g. itchy rash)

## Call for HELP

2222 - Ask for medical, obstetric and neonatal emergency teams

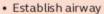
- · Remove trigger if possible (e.g. stop any infusion)
- Lie patient flat (with or without legs elevated)
  - A sitting position may make breathing easier
  - If antenatal lie on left side







## Give intramuscular (IM) adrenaline<sup>2</sup>



- · Give high flow oxygen
- Apply monitoring: pulse oximetry, ECG, blood pressure

## If no response:

- · Repeat IM adrenaline after 5 minutes
- IV fluid bolus<sup>3</sup>

## If no improvement in Breathing or Circulation problems1 despite TWO doses of IM adrenaline:

- Confirm resuscitation team or ambulance has been called
- Follow REFRACTORY ANAPHYLAXIS ALGORITHM

## 1. Life-threatening problems

## **Airway**

Hoarse voice, stridor

## **Breathing**

†work of breathing, wheeze, fatigue, cyanosis, SpO, <94%

## Circulation

Low blood pressure, signs of shock, confusion, reduced consciousness

## 2. Intramuscular (IM) adrenaline

Use adrenaline at 1 mg/mL (1:1000) concentration

Adult and child >12 years: 500 micrograms IM (0.5 mL) Child 6-12 years: 300 micrograms IM (0.3 mL) Child 6 months to 6 years: 150 micrograms IM (0.15 mL)

Child <6 months: 100-150 micrograms IM (0.1-0.15 mL)

The above doses are for IM injection only. Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

## 3. IV fluid challenge

Use crystalloid

Adults: 500-1000 mL

Children: 10 mL/kg

## TRYPTASE LEVELS

To confirm anaphylaxis tryptase levels need to be taken. Samples should be taken:

- As soon as possible after event (ideally during)
- 2. 1-2 hours after symptoms
- 3. At 24 hours

Samples should be taken in a yellow top (SST clotted) bottle and sent to biochemistry. The time after the event should be stated on the request.

# Refractory anaphylaxis

No improvement in respiratory or cardiovascular symptoms despite 2 appropriate doses of intramuscular adrenaline

## peripheral IV or IO access **Establish dedicated**

## Critical care support is essential Seek expert¹ help early

## Give rapid IV fluid bolus e.g. 0.9% sodium chloride

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## Start adrenaline infusion Adrenaline is essential for treating all aspects of anaphylaxis

## every 5 minutes until adrenaline infusion has been started Give IM\* adrenaline

settings (e.g. peri-operative) while not recommended, but may be appropriate in some specialist \*IV boluses of adrenaline are an infusion is set up



## Fitrate to SpO<sub>2</sub> 94-98% Give high flow oxygen

and ECG for cardiac arrhythmia Monitor HR, BP, pulse oximetry for mast cell tryptase Take blood sample

## Follow local protocol

## Peripheral low-dose IV adrenaline infusion:

- 1 mg (1 mL of 1 mg/mL [1:1000]) adrenaline in 100 mL of 0.9% sodium chloride
- Prime and connect with an infusion pump via a dedicated line

DO NOT infuse on the same side as a BP cuff as this will interfere with the infusion and risk extravasation DO NOT 'piggy back' on to another infusion line

- 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
  - ↑↑ BP is likely to indicate adrenaline overdose



Titrate according to clinical response Continue adrenaline infusion and treat ABC symptoms

Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

## A = Airway

## Partial upper airway obstruction/stridor: Nebulised adrenaline (5mL of 1mg/mL)

## Fotal upper airway obstruction:

Expert help needed, follow difficult airway algorithm

## B = Breathing

## Oxygenation is more important than intubation

## If apnoeic:

- Bag mask ventilation
- Consider tracheal intubation

## Severe/persistent bronchospasm:

- Nebulised salbutamol and ipratropium with oxygen
  - Consider IV bolus and/or infusion of salbutamol or aminophylline
    - Inhalational anaesthesia

## C = Circulation

## Give further fluid boluses and titrate to response: Child 10 mL/kg per bolus

Adult 500-1000 mL per bolus

Use glucose-free crystalloid

Large volumes may be required (e.g. 3-5 L in adults) (e.g. Hartmann's Solution, Plasma-Lyte®)

## Place arterial cannula for continuous BP monitoring Establish central venous access

## IF REFRACTORY TO ADRENALINE INFUSION

Consider adding a second vasopressor in addition to adrenaline infusion:

- Noradrenaline, vasopressin or metaraminol
- In patients on beta-blockers, consider glucagon

## Consider extracorporeal life support

## Cardiac arrest – follow ALS ALGORITHM

- Start chest compressions early
- Use IV or IO adrenaline bolus (cardiac arrest protocol)
- Aggressive fluid resuscitation
- Consider prolonged resuscitation/extracorporeal CPR