Greater Glasgow & Clyde
Obstetric Guidelines.

Anaphylaxis - Emergency Management

Aim

This guideline sets out the diagnosis and emergency management of anaphylaxis in the obstetric population.

Introduction and background

Anaphylaxis is a severe, life-threatening hypersensitivity reaction. The incidence in the obstetric population is 3 in 100 000. Prompt diagnosis and management is essential to minimise maternal and fetal morbidity.

The clinical severity of anaphylaxis can be classified as follows:

Grade I	Muco-cutaneous signs: erythema, urticaria, angioedema
Grade II	Muco-cutaneous signs as above ± hypotension ± tachycardia ± dyspnoea ± GI disturbance
Grade III	Life-threatening: cardiovascular collapse, tachycardia/bradycardia; bronchospasm; hypoxia
Grade IV	Cardiac arrest

This guideline is intended for the management of the more severe (grade III & IV) reactions.

Diagnosis

Anaphylaxis typically presents with a **sudden onset** of **rapidly developing:**

- skin and/or mucosal changes (urticaria, angioedema, flushing), **with**
    - life-threatening circulatory changes (tachycardia, hypotension, sometimes bradycardia) **and/or**
    - life-threatening airway/respiratory changes (airway swelling, bronchospasm, hypoxia).

The clinical features usually occur within minutes of exposure to a triggering agent, but may be delayed by up to an hour. Common triggering agents are:

Drugs	**Environmental**
Antibiotics (especially β-lactams)	Antiseptics (chlorhexidine/iodine)
Muscle relaxants	Latex (often presents with delayed onset)
NSAIDs	Insect stings
Colloids	Nuts/food

Immediate treatment (see Appendix)

- Stop administering suspect agent.
- **CALL FOR HELP**.
- Lie patient flat and elevate legs.
- **Left lateral uterine displacement** in pregnant patients.
- Give **adrenaline**.
    - 0.5 ml 1:1000 adrenaline given intramuscularly.
    - Intravenous adrenaline should only be given by those familiar with its use, in aliquots of 50 micrograms (dilute 1 ml 1:1000 adrenaline to 10 ml and then give 0.5 ml boluses).
- Give 15l **oxygen** via a trauma mask initially.
- Maintain airway, and secure if necessary.
- Intravenous access and fluid bolus (**NOT** colloid) as soon as possible.
- If the patient enters cardiac arrest, and is more than 20 weeks pregnant, **perimortem caesarean section** should occur if there is no response to CPR within **four minutes** of collapse. This is to improve the chances of survival of the mother.

Subsequent treatment

- **Adrenaline**: further boluses or an intravenous infusion of 0.05-0.1 micrograms.kg^{-1}.min^{-1} may be required.
- **Antihistamine**: chlorphenamine 10 mg intravenously.
- **Steroid**: hydrocortisone 200 mg intravenously.
- Persistent bronchospasm may be treated with a slow intravenous injection of salbutamol (250 micrograms, repeated if required).
- Plan for transfer to a critical care environment.

Investigations

The diagnostic test is for mast cell tryptase, and three samples (5-10 ml clotted blood each) should be taken in a yellow top (U&E) bottle, each carefully labelled with the correct time and date.

- As soon as possible after reaction is identified, without delaying resuscitation.
- 1-2 hours after the onset of symptoms.
- 24 hours or more after the onset, as a measure of baseline tryptase level.

Follow up

Following suspected anaphylaxis, patients should be referred for further investigation, which may include skin tests for the causative agent. Referral should be made to Dr M Shepherd at the Regional Anaphylaxis Service, West Glasgow Ambulatory Care Hospital.

A referral form, as well as template letters for the patient and their GP, may be found on the intranet here.

References

Suspected anaphylactic reactions associated with anaesthesia. AAGBI. July 2009.
Management of a patient with suspected anaphylaxis during anaesthesia (safety drill). AAGBI. 2009.
Anaphylaxis in the clinical setting of obstetric anesthesia: a literature review. Anesthesia & Analgesia 2013; 117: 1357-1367.
Emergency treatment of anaphylactic reactions. Resuscitation Council (UK). 2012.

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Title

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Approval

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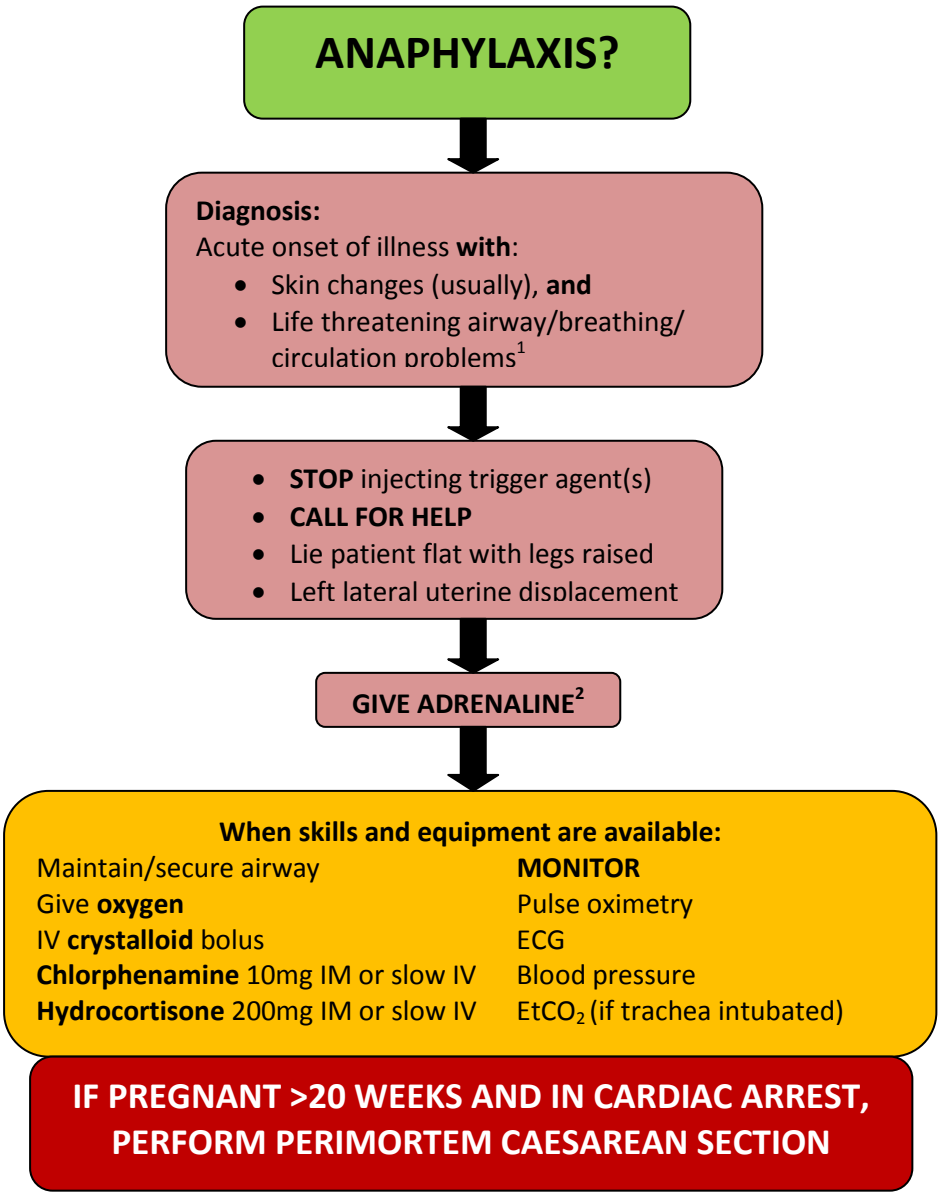
Appendix:

Resuscitation Council (UK) Anaphylaxis Algorithm
Adapted for Obstetrics & Gynaecology Service, GG&C.



1 Life-threatening problems:
AIRWAY: oedema, swelling, stridor, hoarseness
BREATHING: tachypnoea, wheeze, cyanosis, hypoxia, confusion
CIRCULATION: pale, clammy, hypotension, drowsy

2 ADRENALINE:
Give IM unless experienced with IV
Intramuscular: 0.5 ml **1:1000** adrenaline
Repeat after 5 minutes if patient no better
Intravenous: 0.5 ml **1:10 000** adrenaline (50µg bolus)