COMMON CRISES IN PAEDIATRIC ANAESTHESIA

SUSPECTED ANAPHYLAXIS DURING ANAESTHESIA

ANAPHYLAXIS IS A LIFE THREATENING CRISIS

- Prompt diagnosis requires early recognition of signs & symptoms.
- Early treatment with adrenaline & fluid replacement is crucial
- Severe anaphylaxis can lead to cardiovascular collapse and death

Immediate management

- ABC approach (Airway, Breathing, and Circulation)
- Remove all potential causative agents and maintain anaesthesia, if necessary, with an inhalational agent.
- **CALL FOR HELP** and crash cart, note the time.
- Maintain the airway and administer oxygen 100%. Intubate and ventilate with oxygen if necessary.
- Elevate the patient's legs if there is hypotension.
- If appropriate, start cardiopulmonary resuscitation immediately according to Advanced Life Support

- **Adrenaline i.v.**
  1 to 10 µg/kg (0.01 to 0.1 ml/kg of 1:10 000 solution ie.100 µg/ml), titrate to BP
- Several doses may be required if there is severe hypotension or bronchospasm. Consider starting an intravenous infusion of adrenaline.
- Give saline 0.9% or lactated Ringer's solution 20 ml/kg at a high rate (large volumes may be required).

Secondary management

- Hydrocortisone i.v. 2-4 mg/kg (max 200mg)
- If the blood pressure does not recover despite an adrenaline infusion, consider:
  - IV phenylephrine 10 µg/kg
  - IV noradrenaline (0.3 x body weight into 50ml N/S); titrate according to BP

- IV vasopressin (bolus 0.03 units/kg then 2 units/h); titrate according to BP

- Treat persistent bronchospasm with an i.v. infusion of salbutamol. If a suitable breathing system connector is available, a metered-dose inhaler may be appropriate. Consider giving:
  - IV Aminophylline 10 mg/kg over 1 hour (max 500 mg) or,
  - IV Magnesium sulphate 50% (500 mg/mL): 50 mg/kg to max 2 g over 20 minutes

Immediate Investigations

- Mast cell tryptase samples
  Take two blood samples in plain tubes (brown top)
  i) immediately after the reaction has been treated (within 1 hour of the reaction), and;
  ii) about 6 hours or up to 24 h after the reaction
  It is essential to *state the time on samples (and time from onset of reaction)* and record this in the notes.
  Send sample to KKH lab (ext 1383) where serum will be stored until it can be sent to TTSH clinical immunology lab (63578464) for measurement of serum tryptase.

Later Investigations:

- Any patient who has a suspected anaphylactic reaction associated with anaesthesia should be investigated fully.
- Refer the patient to an allergist.
- Ensure detailed analysis and proper documentation of events surrounding the suspected anaphylactic reaction.

References:

1. Suspected anaphylactic reactions associated with anaesthesia, revised edition 2009. Association of Anaesthetists of Great Britain and Ireland.
2. Australian and New Zealand Anaesthetic Allergy Group Anaphylaxis Management Guidelines. Last modified on: 21 April 2016 http://anzaag.com/Mgmt%20Resources.aspx