University Hospitals of Leicester NHS NHS Trust

Nottingham University Hospitals NHS NHS Trust

Anaphylaxis-Guidelines for Management During Retrieval.

This guideline is for use by healthcare staff, at CoMET undertaking critical care retrieval, transport and stabilisation of children, and young adults.

CoMET is a Paediatric Critical Care Transport service and is hosted by the University Hospitals of Leicester NHS trust working in partnership with the Nottingham University Hospitals NHS Trust.

The guidance supports decision making by individual healthcare professionals and to make decisions in the best interest of the individual patient.

This guideline represents the view of CoMET, and is produced to be used mainly by healthcare staff working for CoMET, although, professionals, working in similar field will find it useful for easy reference at the bedside.

We are grateful to the many existing paediatric critical care transport services, whose advice and current guidelines have been referred to for preparing this document. Thank You.

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Education and Training

1. Annual Transport team update training days

2. Workshops delivered in Regional Transport Study days/ Outreach

Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Incident reporting	Review related Datix	Abi Hill – Lead Transport Nurse abi.hill@uhl-tr.nhs.uk	Monthly	CoMET Lead Governance Meeting
Documentation Compliance	Documentation Audit	Abi Hill – Lead Transport Nurse abi.hill@uhl-tr.nhs.uk	3 Monthly	CoMET Lead Governance Meeting

Immediate Management (during transport)

Remove trigger if possible
Ensure help is available:
Call CoMET consultant
Stop ambulance for any procedure
Consider divert to nearest hospital
Pre-alert destination

Anaphylaxis manageme

- An advisory role xis
- Advanced mana g invasive ventilation, or with refractory cardiovascular instability
- Anaphylaxis occurring during transport of an acutely unwell child

RECOGNITION & ASSESSMENT

It is vital to establish an early diagnosis. Consider Anaphylaxis when the following are present:

- Sudden onset and rapid progression of an illness with skin / mucosal tissue changes. (Urticaria/ Angioedema/ Flushing/ Peri-orbital oedema/ Conjunctivitis/GI symptoms etc.)
- Life-threatening Airway and/or Breathing and/or Circulation problems [After exposure to known/likely allergen]

Consider agents administered before and during resuscitation of acutely unwell child as a trigger:

- Antibiotics – like Penicillins, Cephalosporins, Teicoplanin
- Neuromuscular blocking agents – like Atracurium, Rocuronium
- Blood products, contrast media
- Latex, chlorhexidine

TREATMENT

- Follow the ABCDE approach
- Basic principles are the same regardless of age group
- See flow chart overleaf

Intubation

Indicated for developing airway obstruction or cardiorespiratory collapse

BEFORE:

- Get urgent senior anaesthetic & ENT support if evidence of airway obstruction
- May need inhalational induction +/- surgical airway
- Adrenaline 10 mcg/kg IM +/- Adrenaline 0.5ml/kg 1in1000 nebulised (max 5ml) if waiting
- Ensure patent vascular access

AFTER INTUBATION:

- Ventilate as for air trapping/bronchospasm:
  - Pressure control (aim PIP <35cmH_2O)
  - Slow respiratory rate (e.g. 10-15 bpm), long expiratory time (e.g. I:E 1:2)
  - Permissive hypercapnoea - aim pH ≥7.2
  - PEEP 5cmH_2O
  - Muscle Relaxation
- Chest physiotherapy/suctioning for mucus plugging

Primary treatment

Adrenaline IM (1in1000)

- <6 years 150microgram (0.15ml)
- 6-12 yrs 300microgram (0.3ml)
- >12 yrs 500microgram (0.5ml)

Repeated dose after 5mins if required

Advanced Management

If agreed with Consultant, delay at least 10mins after last IM adrenaline

Adrenaline IV/IO (1in10000) 1microgram/kg max. 50mcg

Infusion if repeated IV boluses needed: 0.05-0.2microgram/kg/min

(dilute 75microgrammes/kg up to 50ml)

Secondary treatment

Ensure secure airway, consider early intubation (see box)

High flow oxygen (>10L/min via non-rebreathe mask/ FiO2 1.0)

Vascular volume expansion 20ml/kg, repeated as required

Antihistamine – chlorphenamine maleate IV (or IM)

- <6months 250microgrammes/kg
- 6m-6years 2.5mg
- 6-12yrs 5mg
- >12yrs 10mg

Steroid – hydrocortisone IV

- <6months 25mg
- 6m-6years 50mg
- 6-12yrs 100mg
- >12yrs 200mg

Salbutamol for bronchospasm – nebulised 2.5-5mg

Note for Handover

- Mast cell tryptase – take samples immediately, and at 1hr and 6-24hrs after reaction
- Referral to an allergist in a Regional Allergy Centre
- Education for patients and parents

In the event of cardiopulmonary arrest, start CPR immediately and follow APLS guidelines
- Note IM adrenaline is not recommended after cardiac arrest has occurred

References:

1. CATS Anaphylaxis guideline – accessed August 2018 at www.cats.nhs.uk
2. NICE Quality Standard: Anaphylaxis QS119 March 2016 www.nice.org.uk/guidance/qs119
3. Emergency treatment of anaphylactic reactions- resuscitation council (UK); https://www.resus.org.uk/anaphylaxis/emergency-treatment-of-anaphylactic-reactions/
4. D. Luyt et-al; Guideline for the management of suspected anaphylaxis in children under 16 years; LRI emergency department, UHL
5. Royal College of Anaesthetists; 6th National Audit Project: Perioperative Anaphylaxis May 2018 www.niaa.org.uk/NAP6Report
6. Richard Lockey; Anaphylaxis synopsis; www.worldallergy.org, sept 2012