Clinical Guidelines

Induction of anaesthesia (see notes)

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ASSESSMENT

AIRWAY OBSTRUCTION?

YES

CARDIOVASCULAR RISK?

YES

- Congenital cardiac disease
- Shock
- Consider Atropine 20 mcg/Kg (min 10 mcg)

NO

INDUCTION AGENT

FENTANYL 2-5 mcg/kg
KETAMINE 1-2 mg/kg

Alternatives:
Etomidate 0.3 mg/kg
Thiopentone 1-2mg/kg

THIOPENTONE 2-5mg/kg

NO

ASPIRATION RISK?

YES

RAPID SEQUENCE INDUCTION
(with cricoid pressure)
SUXAMETHONIUM 1-2mg/kg
(Once airway secure, follow with long acting relaxant)

ATRACURIUM 0.5mg/kg
VECURONIUM 0.1mg/kg
PANCURONIUM 0.1mg/kg
ROCURONIUM 1mg/kg

NO

RELA XANT

RELAXANT

YES

ONGOING SEDATION

BOLUSES:
- MIDAZOLAM 0.1mg/kg
- MORPHINE 0.1mg/kg

Alternative to morphine:
Fentanyl 1-2 mcg/kg

INFUSIONS:
- MIDAZOLAM 1-4 mcg/kg/min
- MORPHINE 10-40 mcg/kg/h

Alternative to morphine:
Fentanyl 2-8 mcg/kg/h

NO

ONGOING PARALYSIS (IF REQUIRED)

BOLUSES:
- ATRACURIUM 0.25mg/kg
- VECURONIUM 0.05mg/kg
- PANCURONIUM 0.02mg/kg
- ROCURONIUM 0.2mg/kg

INFUSION:
VECURONIUM 1-10 mcg/kg/min

YES

Set up end tidal CO2 monitor

NO

Children’s Acute Transport Service provides paediatric intensive care retrieval for Great Ormond Street, The Royal Brompton and St Mary’s NHS Trusts. Funded and accountable to the North Thames Paediatric Intensive Care Commissioning Group through Great Ormond Street NHS Trust.
Notes on Anaesthetic Drug Management

General Aspects

Note that administering a general anaesthetic in an unfamiliar environment (ie a referring hospital) should be a two-doctor procedure using a local anaesthetist with appropriate skill. This enables rapid access to local resources in case of difficulty. If difficulty is anticipated or where conditions are not ideal, the following may be necessary, depending on time available:

- The presence of a consultant anaesthetist from the referring hospital especially where airway obstruction is present.
- Moving the child to an anaesthetic room where more equipment may be to hand, as well as an operating department practitioner (ODP).

Approach all intubations with caution as it is impossible to exclude difficulty by examination

1 Assessment:
Management of the difficult airway should proceed along guidelines detailed elsewhere in this guide. Generally if this is anticipated then intravenous agents should not be administered until the airway is secured. Inhalational agents and anaesthetic machines should only be used by doctors trained in their use.

2,3 Induction Agent:
Fentanyl or Ketamine are the agents of choice for the cardiovascularly unstable patient and may be used in all age groups. Thiopentone reduces intracranial pressure. Ketamine increases intracranial pressure and should not be used if intracranial pressure is a clinical problem.
For the unstable neonate an opiate-only technique may be used in which case fentanyl rather than morphine should be used due to its rapid action.

4,5,6 Relaxant:
Rapid sequence induction (RSI) involves preoxygenation, administering induction agent then relaxant in precalculated doses in rapid succession followed by application of cricoid pressure.
The airway is then secured after onset of the muscle relaxant without mask ventilation. RSI may be practically difficult in small children and neonates owing to desaturation before full muscle relaxation.
Suxamethonium is the RSI relaxant of choice. Its onset of action in 30 seconds is superior to all non-depolarising relaxants. It should not be used in patients with hyperkalaemia, muscular dystrophy or myotonia, suspected or confirmed malignant hyperpyrexia, or 24 hours after major burn or spinal cord injury – owing to exaggerated hyperkalaemic response. In these circumstances rocuronium is an alternative if RSI is required – its onset of action is 45 to 60 seconds. Its long duration of action (40 minutes +) poses a problem if the airway cannot be secured.