Emergency Induction of Anaesthesia in a Critically ill Neonate or Child

If red flags for imminent cardiorespiratory arrest or brainstem herniation are present DO NOT DELAY
Place a 2222 paediatric emergency call to gather the MDT with skills for advanced resuscitation

A: Severe stridor or upper airway obstruction not relieved by CPAP/High-flow nasal cannula O_2 or simple airway manoeuvres
B: SpO_2 <92% in maximum oxygen therapy, severe work of breathing, unable to talk, 'silent chest'
C: Fluid refractory shock/hypotension, no saturations trace due to poor perfusion, lactate >4
D: Hypertension & bradycardia, abnormal pupil responses, suspected raised ICP (**regardless of GCS**), status epilepticus

CALL SORT EARLY FOR SUPPORT: 02380 775502

Apply PEEP via Ayres T-piece or Waters circuit with 15L/min oxygen flow

(or increase FiO_2 to 1.0 if on non-invasive ventilation/High-flow nasal cannula O_2)
*Ensure full monitoring is attached: ECG, BP on 1min cycles, **finger on pulse**, SpO_2, End-Tidal CO_2*

Ensure at least one working intravenous (IV) or intraosseous (IO) line

Ensure circulation is adequately supported *if signs of shock*

Adequate fluid resuscitation as indicated (up to 40ml/kg isotonic fluid)
Peripheral adrenaline infusion running at 0.1microg/kg/min (see SORT drug calculator)
Consider calcium gluconate after discussion with SORT

Prepare airway equipment

See 'SORT Intubation Checklist' & consider 'Difficult Airway Algorithms: MAST' as indicated
Ensure cuffed tubes used (appropriate size for age of child)
NG tube insertion in neonates/infants **prior to induction** to allow NG aspiration during mask ventilation

Prepare anaesthetic induction agents

Ketamine 2mg/kg IV (reduced to 0.5 to 1mg/kg if haemodynamically unstable)
Rocuronium 1mg/kg
Drug onset will be slow in a low cardiac output state: be patient
DO NOT USE PROPOFOL/THIOPENTONE/VOLATILE ANAESTHETICS

INDUCTION MAY REDUCE SYMPATHETIC TONE AND REDUCE CARDIAC OUTPUT
PREPARE FOR CARDIOVASCULAR COMPROMISE BY PREPARING ISOTONIC CRYSTALLOID BOLUS & RESCUE DILUTED ADRENALINE (see SORT drug calculator)

Maintain ongoing sedation following intubation

Morphine & Midazolam infusions (see SORT drug calculator)
Propofol infusion may be used if not shocked, in time critical head injuries, or in situations where extubation is expected within 6 hours (e.g. status epilepticus)

Other actions needed post intubation

NG tube (if not inserted), Chest X-Ray, 2nd IV/IO access, urinary catheter, bloods & gas, notes photocopied

Points to consider on deterioration during induction of anaesthesia

Hypoxia: is ET tube in correct position? Adequate pressure? Secretion clearance?
Hypotension: administer rescue diluted adrenaline +/- fluid bolus as indicated
Consider reversible pathologies: e.g. pneumothorax, pleural effusions, air trapping

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