NHS
University Hospitals of
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Cardiovascular Monitoring and Management of Neonatal Hypotension - NICU - Summary Clinical Guideline Derby & Burton

Monitoring and Support of Cardiovascular Status in Neonates

Patient group: all ventilated babies under intensive care

Type of BP monitoring and recording: Intravascular continuous monitoring via UAC or peripheral arterial cannula as first choice.

Comprehensive assessment and documentation for the need to support cardiovascular status:

1. **Low MABP**: working definition of hypotension is that MABP in mmHg is below the value of the infant's gestational age in completed weeks. Reconfirm low MABP reading after re-zero the arterial line before intervening.
2. **Urine output**: indicate reduced systemic output if < 1ml/kg/hour over previous few hours.
3. **Blood lactate concentration** > 2mmol/l if significant tissue hypoxia present for a few hours.
4. **Skin perfusion** compromised if capillary refill time > 2 seconds on the center of chest.

Intervention to support cardiovascular status:
1. Identify and treat underlying cause(s) e.g. ductal shunt, pneumothorax, hypovolaemia. Correct any electrolyte imbalance if present.

2. **Volume expansion:**
   Indication: hypovolaemia secondary to septic shock, haemorrhage or NEC
   Volume: 10ml/kg to maximum 20ml/kg
   Fluid types: 0.9% saline, Blood transfusion if haemoglobin < 14g/dl,
            FFP or cryoprecipitate in the presence of coagulopathy

3. **Inotropic support** -- Choice of inotropes depends on the pathology
   Dopamine: Preferably via UVC or
            long line
               Start at 5µg/kg/min, gradually increasing to maximum 20µg/kg/min
   Dobutamine: can be given peripherally if central line access is
            unavailable.
               Start at 5µg/kg/min, gradually increasing to maximum 20µg/kg/min
   Adrenaline start at 0.02-0.3 µg/kg/min, via central line or UVC

4. Reassess and document response of cardiovascular status after each intervention.

5. **Hydrocortisone :** Indicated: poor response to
      inotropes
                  Check a cortisol level before starting Hydrocortisone.
                  Start at 2.5mg/kg 4-6 hourly for 48 hours, consider
                     weaning once stable.