Southampton Oxford Neonatal Transport Guideline

DUCT DEPENDENT CONGENITAL HEART DISEASE

Additional equipment:
- Prostin: PGE2 Dinoprostone
- **DO NOT use other prostaglandins – only Dinoprostone**
- Nitric oxide
- i-STAT machine (if available)

- **TIME CRITICAL/ Immediate Dispatch**if baby is unstable and not responding to appropriate management**
- **DO NOT spend a long time trying to stabilise patient. You may have to scoop and run. Discuss regularly with MDT team.**

Duct dependent – systemic circulation	Duct dependent pulmonary circulation	Differential diagnoses
• Co-arctation of the aorta • Critical aortic stenosis • Hypoplastic left heart syndrome	• Pulmonary atresia • Critical pulmonary stenosis • Tricuspid atresia	• Pulmonary hypertension (C18) • Sepsis (C20) • Metabolic disorders (C19) • Primary lung pathology • Obstructed TAPVD – CXR plethoric
Duct dependent systemic and pulmonary circulations	• Transposition of the great vessels with restrictive circulation	
Aim for: palpable pulses, resolving acidosis	Aim for: sats 75-85% , lactate < 2 mmol/L	Aim for: improved oxygen, BP, acidosis

Initial assessment (NB: may be no murmur)
- Antenatal and family history: antenatal scans, if antenatal Δ ?plan for care after birth
- History of labour and delivery: risk factors for sepsis, condition at birth, resuscitation.
- Time course of presentation and predominant symptoms / signs (cyanosis, shock , acidosis, ↑WOB)
- Management to date and rationale for therapeutic decisions
- **ABC**: Current clinical parameters and progression: RR, WOB, HR, MBP, perfusion, saturations, ↑liver size
- ABC**DEF:** acidosis, lactate, BS, electrolytes, CRP, temperature, what have parents been told?
- Assess need for further urgent intervention (see below)
- Discuss findings and provisional plans with supervising neonatal consultant and paediatric cardiologist

Respiratory support

(In stable babies with prostin of 10 nanogram/kg/min or below, the risk of apnoea is low and they do not routinely need intubation for transfer)
- If apnoea, or if symptoms of respiratory or cardiac failure: intubate and ventilate.
- Add oxygen, if required, to achieve saturations of 75-85% (to avoid pulmonary over-circulation)
- If ventilated, give analgesia with morphine, +/- muscle relaxation
- Monitor pre and post ductal saturations. Aim: PaO_2 5 kPa, $PaCO_2$ 5 kPa

Cardiovascular
- Establish secure access. Two peripheral cannulae minimum. **Do not delay transfer for central access.**
- Treat hypotension with 10 ml/kg fluid boluses and reassess.
- Follow local policies for treatment of hypotension.

Commence Prostin (make up carefully to avoid errors)
- If antenatal diagnosis and baby well and non-acidotic – start at 10 nanogram/kg/min
- If presentation of absent femoral pulses but well and non-acidotic - start at 20 nanogram/kg/min
- If acidotic, unwell infant (late presentation) with suspected CHD – 50 nanogram/kg/min

Double the dose every 20 minutes if no improvement (maximum of 100 nanograms/kg/min- discuss with SONeT consultant or cardiologist if considering >50nanograms/kg/min)

Prostin can be given peripherally or centrally

Other considerations
- Blood cultures, antibiotics. (Remember that sepsis can co-exist with antenatally diagnosed CHD)
- Check blood sugars regularly. Correct hypocalcaemia and hypomagnesaemia.
- Consider causes of acidosis and optimise.
- If PPHN suspected: start inhaled nitric oxide.