

# SOUTHAMPTON OXFORD NEONATAL TRANSPORT

## MECONIUM ASPIRATION SYNDROME

### Additional equipment:

- Nitric system
- Consider Cooling equipment
- Prostin
- i-STAT machine

### Important considerations:

- Risk of PPHN
- Co-morbidities: sepsis, HIE, trauma
- $\Delta\Delta$  Congenital cardiac / duct dependent cyanosis
- Risk of air leak / pneumothorax

### Initial assessment

- Review antenatal and birth history: risk factors for sepsis, condition at birth, resuscitation.
- Clarify management to date and rationale for therapeutic decisions
- Establish degree of respiratory difficulty: WOB, pre- and post-ductal sats, blood gases, CxR appearances
- Define cardiovascular parameters: HR, MBP, perfusion, lactic acidosis
- Neurological state: alert / abnormal / obtunded. If already paralysed consider using CFM if available
- Consider criteria for therapeutic hypothermia
- Traumatic injury: such as cervical plexus injury after shoulder dystocia.

### Respiratory support

- In most instances if  $FiO_2 \geq 60\%$ , intubate and ventilate. [Discuss with Supervising Consultant]
- Consider using a longer IT (0.4-0.5 s) with slower rates. Use higher PIP to achieve adequate tidal volumes aiming for normocarbida ( $PaCO_2$  4.0 – 5.5). Consider use of HFOV. If ventilation difficult, discuss with supervising consultant. Aim to keep sats  $\geq 95\%$  if possible.
- Sick ventilated term babies will benefit from sedation and paralysis, but optimise filling before paralyzing.
- Plan to start nitric oxide if pre-departure  $FiO_2 \geq 80\%$ .
- Calculate oxygenation index with each gas if  $FiO_2 \geq 80\%$ . (to convert Pa to mmHg x7.5)
- Surfactant administration / lavage -only on advice of supervising consultant

### Cardiovascular

- Establish secure access. UAC and double lumen UVC ideal if baby needing ventilation.
- Maintain BP at upper limit of normal range (MBP 45-50 mmHg) if baby has an oxygen requirement  $\geq 60\%$
- Ensure adequate filling.
- Consider starting inotropes, dopamine ( use dobutamine if cannot get central access) if hypotensive and suspected PPHN. Discuss further inotropes with supervising consultant
- Consider use of prostin if saturations persistently low and/or congenital cardiac disease suspected.

### Other considerations

- Antibiotics: First line eg; Benzyl penicillin and Gentamicin (Dependent on local policy).
- Maintenance fluids: 10% Dextrose 40 mls/kg/day. Check blood sugars to avoid hypoglycaemia.
- Optimise acidosis with judicious use of alkalyising agents:  $NaHCO_3$  or THAM.
- Correct hypocalcaemia and hypomagnesaemia if suspected PPHN and low saturations.
- Define need to instigate therapeutic hypothermia. ? treatment for neonatal seizures
- Repeat CxR if  $FiO_2$  increases, BP unstable or worsening acidosis to exclude pneumothorax

**\*\*In some circumstances you may need to move with the baby not perfect but as 'good as you can get'\*\***  
**Keep a close dialogue with your Supervising Consultant**

### Step up care

- Transfer to the NICU will enable baby to be ventilated on HFOV.
  - It may be appropriate to consider discussion with the ECMO centre. (Neonatal ECMO fellow).
- GOSH: 0207 405 9200 / 0207 829 8652  
 Leicester: 0116 287 1471  
 Newcastle: 0191 223 1016  
 Glasgow: 0141 201 0000  
 (Alternatives may include Southampton and B'ham)

### Criteria for eligibility ECMO

Oxygenation index (OI)  $\geq 40$  (discuss at  $\geq 30$ )  
 Bwt > 2kg      Gestational age > 34 weeks  
 Reversible disease.  
 No intracranial haemorrhage > grade 2 IVH  
 No lethal anomalies

$$OI = \frac{FiO_2 (\%) \times MAP (mmHg)}{PaO_2 (mmHg)}$$