CLINICAL PRACTICE GUIDELINE
NEWBORN EMERGENCY TRANSPORT SERVICE (NETS WA)

Meconium Aspiration Syndrome (MAS)

This document should be read in conjunction with the Disclaimer

Key Points

- These are often very sick neonates, in severe respiratory distress.
  Always discuss **all** decisions with the on-call neonatologist.
- Unique and complex combination of airflow obstruction, atelectasis and lung inflammation.
- Air leak is common.
- Meconium causes chemical pneumonitis and surfactant inactivation.
- **High risk of developing PPHN**. **If FiO_2 > 0.4 TAKE NITRIC OXIDE ON RETRIEVAL.**
- Infants may also have HIE. See Guidelines for Hypoxic Ischaemic Encephalopathy (HIE) / Asphyxia.

Management

- Aim for **pre-ductal** SpO_2 > 95%.
- Headbox O_2 for milder cases.
- CPAP can be considered for moderate respiratory distress. Preferably exclude air leak before commencing CPAP.
- Transcutaneous or end-tidal CO_2 monitoring should be used in all cases of MAS / PPHN / severe RDS.
- For severe respiratory distress, intubate and ventilate **after premedication**.
  - Consider insertion of UAC / UVC for hypoxic infants.
  - Consider using longer inspiratory time (0.4-0.5 seconds), with longer expiratory time, to avoid gas trapping. Consider decreasing PEEP (but may lose recruitment of areas prone to atelectasis).
  - Consider dose of surfactant (if severe distress and FiO_2 > 50%). **This must always be discussed with the on-call neonatologist, as babies may deteriorate after Surfactant administration.**
  - Sedation is beneficial in decreasing pulmonary arterial pressure (Morphine and/or Midazolam).
  - Muscle relaxation for very sick, unstable infants may be necessary.
  - Treat pulmonary hypertension. Inhaled nitric oxide is available on transports. See Guideline for Persistent Pulmonary Hypertension of the Newborn (PPHN). Consider infusion of Prostaglandin E1 (Alprostadil)

and/or Milrinone. Consider Sodium bicarbonate infusion for alkalinisation.

- Shocked infants may require fluid boluses (to improve pre-load) and/or inotropes. Consider Milrinone, Dobutamine, Dopamine or Adrenaline.
- For air transports: If evidence of gas trapping consider flying with Sea Level Cabin. RFDS/Medical Air Pilot must be informed.

Related WNHS policies, procedures and guidelines

NETS WA Clinical Guidelines: Hypoxic Ischaemic Encephalopathy (HIE) / Asphyxia

NETS WA Clinical Guidelines: Persistent Pulmonary Hypertension of the Newborn (PPHN)

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