Inhaled Nitric Oxide Usage & Weaning Protocol

PURPOSE: This protocol is for use and weaning of Inhaled Nitric Oxide (iNO) in infants with documented pulmonary hypertension that are 34 weeks or greater as per current FDA approved use for inhaled nitric oxide.

STARTING INO THERAPY

1. Obtain arterial blood gas 15 minutes prior to starting iNO therapy
2. Calculate Oxygen Index (OI) and track this value
   \[ OI = \text{MAP} \times \text{FiO2} \times 100/\text{PaO2} \]
3. Attempt to place patients on INO therapy when OI is 15-20
   (An OI of \( \geq 40 \) may indicate the need to use ECMO)
4. Start INO therapy at 20ppm and 100% FiO2
5. Keep SpO2 \( \geq 94\% \) by ↑↓ FiO2
6. Obtain Met hemoglobin level Q12 hours

Obtain arterial blood gas 30 minutes after therapy has been started.

Response is determined by an increase in PaO2 by 20mmHg on an arterial blood gas or an increase in oxygen saturation by oximetry of 10%, if unable to obtain arterial blood gas. Consideration for discontinuing iNO therapy should be made if these end points are not reached. Arterial blood gases should be obtained Q4 hours.

WEANING INO THERAPY

1. Continue INO at set level, start weaning FiO2 to 60-65% as tolerated, keeping PaO2 60-80mmHg. Continue to obtain arterial blood gases Q4 and as needed.
2. When FiO2 < 60-65%, and/or patient has been on INO for 48 hours, attempt to wean INO to 15ppm
   • If PaO2 is not met increase INO to previous settings and attempt to wean INO in 8 hours.
3. If INO wean is tolerated decrease INO to 10 PPM, begin weaning FiO2 with a goal of 40% or less
   • If PaO2 is not met increase INO to previous settings and attempt to wean INO in 8 hours.
4. If patient tolerates FiO2 of 40% and/or patient has been on INO for 48 hours, attempt to wean INO from 10 ppm to 5 ppm to 2 ppm to 1 ppm and then off. Wean INO in one hour increments.
   • If patient does not tolerate weaning of INO at any of the above levels hold at current settings and attempt to wean in 8 hours.

___________________________________                   ____________________________________________
Chantrapa Bunyapen, M.D.                   Lyle Gene Fisher, M.D
Medical Director, Neonatal Intensive Care Unit     Medical Director, Pediatric Intensive Care Unit

Reference: PEDIATRICS Vol. 104 No.2 August 1999