HIGH FLOW HIGH HUMIDITY NASAL CANNULA OXYGEN THERAPY

CONCHATHERM SETUP

PURPOSE

A. To provide a guideline for use of High Flow NC O2 therapy to treat mild to moderate hypoxemia and respiratory distress. High flow gas is conditioned by adding moisture to the gas and then heating for delivered to the patient.
B. Warm humidified gas delivered to the patient prevents airway dryness, improves mucociliary activity and promotes secretion mobilization.
C. Increase in gas flow by NC provides a degree of unmeasured CPAP

RATIONAL FOR TREATMENT:

High flow therapy relieves work of breathing and with adequate flows can improve lung volumes.

A. Example indications for use of HFT
   Hypoxic Respiratory Failure requiring humidified oxygen
      a. Neonatal population:
         a. Infant Respiratory distress
         b. Apnea of Prematurity
         c. Pneumonia
      b. Pediatric population:
         a. Asthma exacerbation
         b. Bronchiolitis
         c. Pneumonia

B. Contraindications:
   1. Sustained desaturation- SpO2 less than 85% with FiO2 0.6 (neo) 1.0 (ped)
   2. Frequent apnea +/- bradycardia
   3. Marked increased work of breathing not improving with HFT and impending respiratory arrest

TREATMENT PROTOCOL:

A. HIGH FLOW SYSTEMS
   1. Conchatherm Neptune (primary)
      i. At Anchorage base
      ii. Fixed FiO2 1.0 (or 0.21 if use air flow meter)
   2. Vapotherm (for neo transports with NNP or as backup system)
      i. At PAMC NICU
      ii. Titratable FiO2

B. FLOW RANGES:
   Neonatal 1 to 8 LPM
   Pediatric 5 to 25 LPM
C. SETTINGS AND GOALS
   1. Initial flow rates
   2. Initial FiO2 (titratable with VapoTherm, 1.0 fixed with Conchatherm setups)
   3. Flow titration to maintain specific SpO2 and diminish work of breathing
   4. FiO2 titration to maintain specific SpO2 (VapoTherm only)

D. EQUIPMENT FOR CONCHATHERM SYSTEM:
   1. Conchatherm Neptune
   2. Single limb heated wire circuit
   3. Conchapak and Sterile water
   4. Temp probe adapter

E. PROCEDURE:
   1. Gather and assemble equipment
   2. Insert column in Conchatherm heater and set heater to adult mode.
   3. Place water reservoir into the bracket, and close the column’s upper and lower reservoir tube clamps.
   4. Using aseptic technique, remove the protective cover from the lower reservoir puncture spike, and connect feed tube to the lower reservoir port by piercing the port with spike using a twisting motion.
   5. Open the upper and lower reservoir clamps and gently squeeze the reservoir to assist the initial flow of water in the column. Replace column if leaking.
   6. Remove the sterility cap from column port and connect angled connector on the patient circuit.
   7. Uncap the other port and insert the system pressure relief valve and connect a regulated blended gas source.
   8. Connect the temperature probes and secure into clips.
   9. Connect the blue heated wire connector from the circuit to the inspiratory heated wire cable on the heater. This cable will be the shorter of the two and on some models will be blue.
   10. Connect appropriate size cannula to patient end of circuit and secure circuit in place using pinch clamp.
   11. Do not operate heater without gas flow.
   12. During periods of transport when no electrical power is available—may continue to run O2 flow through the system and reinitiate the heater when able.

A. CHANGING RESERVOIR:
13. Close the clamp on the upper and lower tubes and remove the upper spike for the reservoir.
14. Remove the reservoir from the bracket and hold on its side with the label facing upward to prevent residual water leakage.
15. Remove the lower spike from the bottle and discard.