HeliOx Delivery

Purpose

HeliOx, a mixture of Helium and Oxygen, which has a density less than air is administered to improve oxygenation and ventilation in patients with disease processes that obstruct airflow, including but not limited to post extubation stridor, bronchiolitis, and status asthmatics. A reduction in gas density may

significantly reduce the work necessary for ventilation

Scope

Equipment and Supplies

HeliOx gas cylinder (80/20 or 70/30)
HeliOx Regulator
O2 Flow meter with nipple adapter
1 Y connector with O2 tubing
Non- Rebreather Mask
Ventilator

Procedure

Step	Action
1	**HeliOx (70/30) % with a Non-Rebreather** Check the physician's order in epic. Identify patient with two identifiers. Connect the Heliox regulator to (70/30) Heliox tank. Check the PSI in HeliOx tank. Have additional tank available.
2	Attach Nonrebreather mask connecting tube on Heliox regulator flow meter. Secure mask strap over patients head and place mask on the patients face.
3	Adjust flow to keep the bag inflated.
4	**Calculate cylinder duration** H-tank Factor of 2.7 x PSI =Cylinder duration in minutes Flow in Liters per minute __
5	**Setting up a Non-Rebreather Mask w/ Bleed-In** If additional oxygen is required to maintain saturation, attach a small bore wye tubing connector to the tubing on the mask. Place a flow meter with nipple into the O2 wall outlet. Place an air flow meter with nipple into the outlet on the helium/oxygen regulator. Turn Helium/oxygen regulator valve on. Connect one 3 ft. length of green O2 tubing to both the compressed air flow meter and the O2 flow meter in the wall outlet. Label compressed air line **Helium** and the line coming from the wall outlet. Connect the two gas source lines

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	together using a small suction Y connector. Connect the Non-Rebreather mask to the other end of the Y connector. Adjust O2 and compressed air flow meters to deliver adequate flow to the patient's mask.
6	Appropriately document procedure in Epic and complete charge. Document Plan of Care and Patient/Family teaching.
	Setting up Helium delivery through the Ventilator
7	Connect Ventilator's power cord to the electrical outlet. Place Ventilator's Oxygen tubing to the O2 wall outlet. Replace the air connector at the back of the ventilator with the HeliOx connector and verify proper placement by gas ID symbol on the screen. Place ventilator's compressed air tubing into the outlet on the Helium/oxygen cylinder regulator (80/20) %. Adjust FIO2 to physician's order. Titrate the FIO2 by O2 analyzer. Remember any FIO2 >60% will be giving you less than a1:1 ratio of Oxygen to Helium/oxygen mixture.
8	Monitor the Helium/Oxygen cylinder pressure. Change out the cylinder with the back up cylinder when the pressure drops to 500 psig on the cylinder gauge.
9	**Calculation for determining Cylinder Flow Duration** 8o/20% Helium/Oxygen delivers 1.8 times the indicated flow through a calibrated flow meter. Total flow will be calculated as 1.8 x litres dialed in on flow meter= total flow. So if we have a cylinder with 2000psig in it and the helium/O2 gas flow is 15lpm, this cylinder would last approximately 2000x2.7=5480/ (1.8)x 15lpm=27lpm 5480/27lpm =202.96 min./60 = 3.38hours of cylinder duration
10	Documentation should include cylinder pressure, FIO2 and patient assessment.

Infection Control

Follow procedures outlined in Healthcare Epidemiology Policies and Procedures #2.24; Respiratory Care Services.
http://www.utmb.edu/policy/hcepidem/search/02-24.pdf

References

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