

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

INTRODUCTION:

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing preload and afterload.

INDICATIONS:

1. Any patient who is complaining of shortness of breath for reasons other than pneumothorax and:
 - A. Is awake and oriented
 - B. Is over 12 years old and is able to fit the CPAP mask
 - C. Has the ability to maintain an open airway (GCS > 10)
 - D. A respiratory rate greater than 25 breaths per minute
 - E. Has a systolic blood pressure above 90 mmHg
 - F. Uses accessory muscles during respirations
 - G. Sign and Symptoms consistent with asthma, COPD, pulmonary edema, CHF, or pneumonia

CONTRAINDICATIONS:

1. Patient is in respiratory arrest
2. Patient is suspected of having a pneumothorax
3. Patient has a tracheostomy

PRECAUTIONS:

1. Use care if patient:
 - A. Has impaired mental status and is not able to cooperate with the procedure
 - B. Has failed at past attempts at noninvasive ventilation
 - C. Has active upper GI bleeding or history of recent gastric surgery
 - D. Complains of nausea or vomiting
 - E. Has inadequate respiratory effort
 - F. Has excessive secretions
 - G. Has a facial deformity that prevents the use of CPAP
2. Intubation should be performed if:
 - A. Respiratory or cardiac arrest
 - B. Unresponsive to verbal stimuli (GCS is < 9) and attending paramedic is able to perform RSI or attempt intubation.

PROCEDURE:

1. Make sure patient does not have a pneumothorax!
2. **EXPLAIN THE PROCEDURE TO THE PATIENT**
3. Ensure adequate oxygen supply to ventilation device (100% when starting therapy and until SaO₂ is >95%)
4. Place the patient on continuous pulse oximetry
5. Place the delivery device over the mouth and nose
6. Secure the mask with provided straps or other provided devices
7. Use 10 cm H₂O of PEEP
8. Check for air leaks
9. Monitor and document the patient's respiratory response to treatment
10. Monitor vital signs at least every 5 minutes. CPAP can cause BP to drop.
11. Continue to coach patient to keep mask in place and readjust as needed
12. If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation with or without endotracheal intubation.

REMOVAL PROCEDURE:

1. CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experiences continued or worsening respiratory failure.
2. Intermittent positive pressure ventilation and/or intubation should be considered if the patient is removed from CPAP therapy.

PEDIATRIC CONSIDERATIONS:

CPAP should not be used in children under 12 years of age

SPECIAL NOTES:

1. Advise MRCC so receiving hospital can be prepared for patient.
2. Do not remove CPAP until hospital therapy is ready to be placed on patient.
3. Most patients will improve in 5-10 minutes. If no improvement within this time, consider intermittent positive pressure ventilation.
4. Watch patient for gastric distention.
5. Use nitroglycerine tablets to avoid nitroglycerine spray from being dispersed on medics.
6. May be the treatment of choice in a patient with a DNI order.
7. In-line nebs can be delivered with CPAP as appropriate

-----Page Break-----

