Continuous Positive Airway Pressure

Procedure

Douglas County KS EMS System **March 2022**

Approved Provider: EMT, AEMT, Paramedic

Reference Protocols: Breathing Difficulty, CHF

Indications

- *2nd line treatment if Z Vent unavailable*
- Dyspnea / Hypoxemia secondary to congestive heart failure, acute cardiogenic pulmonary edema, pneumonia, chronic obstructive pulmonary disease (asthma, bronchitis, and emphysema) and:
    1. Any patient who is complaining of difficulty breathing for reasons other than pneumothorax.
    2. Level of consciousness high enough to maintain own airway
    3. Has a systolic blood pressure above 90 mmHg
    4. Uses accessory muscles during respirations

Contraindications

- Pneumothorax
- Respiratory arrest
- Agonal respirations
- Unconscious
- Cardiogenic shock
- Penetrating chest trauma
- Flail Chest and/or multiple rib fractures
- Persistent nausea/vomiting
- Facial trauma
- Facial droop or other facial abnormalities that would prevent proper seal
- Has active upper GI bleeding or history of recent gastric surgery

Precautions

- Facial droop or other facial abnormalities
- CPAP should not be used in children under 12 years of age

Procedure (Fig. 1)

- Place patient in a sitting position
- Assess vital signs and SpO2 q5 min
- Attach heart monitor and pulse oximetry
- Attach ETCO2 Nasal Cannula and plug into monitor
- If BP <90 systolic contact Medical Control prior to beginning CPAP
- Start with 5 cmH2O and adjust to effectiveness up to 10cmH20.
- Explain the procedure to the patient:
    - Example: "You are going to feel some pressure from the mask but this will help you breathe easier."
        1. Place delivery device over mouth and nose.
        2. Instruct patient to breathe in through their nose slowly and exhale through their mouth as long as possible (count slowly and aloud to then instruct to inhale slowly).

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Procedure (Cont.)

- Check for air leaks
- Attach nebulizer for breathing treatment as needed (Fig. 1)
- Treatment should be given continuously throughout transport to ED.
- Continue to coach patient to keep mask in place and readjust as needed
- If respiratory status / level of consciousness deteriorate, remove device and consider bag valve mask ventilation and/or endotracheal intubation

Documentation

- CPAP level (5cmH2O) →(10cmH2O)
- FiO2 → (100%)
- SpO2 q5 minutes
- Vital Sign q5 minutes
- Response to treatment
- Any adverse reactions

Notes

- Advise receiving hospital as soon as possible so they can prepare for the patient's arrival.
- Do not remove CPAP until hospital respiratory therapy is ready to be placed on the patient.
- Monitor patient for gastric distension which may lead to vomiting.
- Can be used to administer a nebulized breathing treatment.

Fig. 1

A properly placed and secured CPAP can keep a patient breathing who would otherwise have gone into respiratory arrest. Nebulizer can be used as pictured above. ETCO2 Nasal cannula should be used as shown with EVERY CPAP application.