BLAND AEROSOL THERAPY

PURPOSE: 1. Improve bronchial hygiene
   a. hydrate retained secretions
   b. improve efficiency of cough mechanism
   c. restore and maintain normal function of mucociliary escalator.
   2. Humidify gases delivered to artificial airways.

DESCRIPTION: Bland aerosol therapy includes delivery of hypotonic, hypertonic, or isotonic saline; or sterile water in aerosolized form. Oxygen may be used in conjunction with bland aerosol therapy. Bland aerosol therapy can be continuous in conjunction with oxygen therapy.

INDICATIONS:
1. To induce sputum specimens.
2. Humidification of a bypassed upper airway.
3. Upper airway edema.

HAZARDS/ COMPLICATIONS:
1. Precipitation of bronchoconstriction, most common in asthmatic and COPD patients and may result in hypoxemia. Humidified oxygen therapy should be considered in place of aerosol therapy.
2. Systemic fluid overload - primarily a problem with neonates and infants, and patients with congestive heart failure exacerbation.
3. Infection.
4. Increased airway obstruction because of swelling of dried retained secretions - seen primarily in debilitated patients with a poor cough mechanism.
5. Patient discomfort.

EQUIPMENT: Depending on the application, the following equipment is used.
1. Flow meter - air or oxygen.
2. Delivery device - aerosol mask, face tent, trach collar, or T-tube.
4. Hand held nebulizer; large volume jet nebulizer; high flow jet nebulizer.
5. Corrugated aerosol tubing and water trap.

PERSONNEL: Respiratory Care Therapist and Technicians.

PROCEDURE: Procedure for Bland Aerosol Therapy to Induce Sputum Specimens:
1. Verify written physician order.
2. Review patients’ chart for the following:
   a. Admitting or most recent updated diagnosis.
   b. Progress notes.
3. Inform patient of the purpose of the visit.
   a. Identify self and department.
   b. Identify patient by comparing hospital and billing numbers on the armband to those on the physicians’ orders for therapy.
   c. Inform patient of procedure and answer all questions pertinent to therapy.
6. Apply personal protective equipment and wash hands thoroughly.
7. Place flowmeter in wall outlet. (Delivery therapy with oxygen if the patient has oxygen ordered.)
8. Attach hand held nebulizer to flow meter.
9. Fill nebulizer with 3 to 5cc's of ordered saline solution. [Isotonic (.9% NaCl), Hypotonic (0.45% NaCl), Hypertonic (> .9% NaCl)] Isotonic saline will thin and liquify secretions, and induce coughing. Hypertonic saline will do the same as isotonic saline and create a greater volume of secretions due to its higher osmotic gradient. Hypotonic saline will hydrate secretions but it is less irritating to the airways.

10. Turn flowmeter to 8 lpm and verify output of mist.
11. Place nebulizer with delivery device (Mouthpiece, T-Collar, and A-Mask) on the patient.

Procedure for Cool Aerosol Therapy:
1. Verify written physician order.
2. Review patients’ chart for the following:
   a. Admitting or most recent updated diagnosis.
   b. Progress notes.
3. Inform patient of the purpose of the visit.
   a. Identify self and department.
   b. Identify patient by comparing hospital and billing numbers on the armband to those on the physicians’ orders for therapy.
   c. Inform patient of procedure and answer all questions pertinent to therapy.
4. Place flowmeter in wall outlet.
5. Apply personal protective equipment and wash hands thoroughly.
6. Fill nebulizer with sterile water to fill line, replace top tightly and attach to flowmeter. Discard opened bottle of water.
7. Attach large bore tubing to nebulizer and connect to a delivery device.
8. Turn flowmeter to 10 LPM to verify output of mist.
9. Place delivery device on patient.
10. Adjust flow rate to meet patient's need. Mist should always be visible.
   a. If a high flow nebulizer is utilized, turn flowmeter to recommend settings located at the top of the nebulizer.
   b. Observe that aerosol output is not "drawn back in" to aerosol mask when patient inspires.
   c. If flow seems inadequate, the flowmeter can be increased to flush and a six-inch piece of corrugated tubing placed in the aerosol mask's ports. If flow remains inadequate, two nebulizers can be connected together via corrugated tubing and a T-adapter.
12. Delivery devices
   a. Aerosol mask - a flexible cone-shaped device with a metal strip to mold the mask to the nose, an adjustable head strap, two large openings for exhalation and a large bore tubing connection.
   b. Face tent- a shield-like device that fits under the chin and sweeps around the face. It has an adjustable head strap and large bore tubing connection.
   c. Trach Collar- a flexible collar-shaped device with an adjustable neck strap, large bore tubing connection and large exhalation port.
   d. T-tube - a plastic T-adapter that fits directly to tracheostomy or endotracheal tube. A 6-inch piece of reservoir tubing is attached to the expiration side of the T-tube to stabilize the oxygen concentration to the patient.
13. Discard personal protective equipment, wash and dry hands thoroughly after patient contact.
15. Age appropriate considerations include proper sizing of the delivery device.

Infection Control:
1. All aerosol devices are changed out everyday.
2. Hand held nebulizers are changed on Mondays, Wednesdays, and Fridays.

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REFERENCES:
AARC Clinical Practice Guideline