


RESPIRATORY THERAPY PROCEDURE

CATEGORY: Program Specific
ISSUE DATE: January 3, 2001
SUBJECT: SPUTUM INDUCTION

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PURPOSE

To provide instructions for collecting a sputum specimen by expectoration.

PROCEDURE

Equipment

- Aerosol mask and nebulizer kit
- 3% hypertonic saline vials (obtained from Pharmacy)
- Sterile specimen bottle with appropriate Lab requisition
- Ventolin MDI and aerochamber
- Stethoscope
- Toothbrush (as required)
- N95 mask and eye protection

Special Instructions

- **Sputum induction is a high-risk respiratory procedure.**
- Once a physician's order is obtained, sputum induction will be performed the next morning at 0700 hours before the patient's breakfast. Sputum induction should be performed each morning (up to a maximum of three mornings) until an appropriate specimen is obtained.
- Patients with a history of bronchospasm must be pre-treated with three puffs of Ventolin via the aerochamber.
- **If there are no results after 30 minutes, stop therapy and notify the physician.**

Method

1. Verify the physician's order.
2. Review the patient's history.
3. Identify the patient and explain the procedure to the patient.
4. Assess the patient. Document auscultation and heart rate prior to treatment, and administer Ventolin if required.

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5. Have the patient brush the buccal mucosa, tongue and gums with a wet toothbrush and rinse their mouth thoroughly with water. **Do not use toothpaste or mouthwash.**
6. Instruct the patient to cough to see if they can provide a specimen spontaneously.
7. Fill the nebulizer with two vials (8 mL) of 3% hypertonic saline.
8. Don PPE and set the nebulizer to 6-8 Lpm.
9. Instruct the patient to breathe deeply through their mouth, and then cough as needed and at 5-minute intervals.
10. If the patient develops any of the following adverse effects to hypertonic saline, discontinue therapy and notify the ordering physician:
 - A. Bronchospasm
 - B. Tachycardia greater than 140 bpm
 - C. Nausea and vomiting
11. Collect any samples obtained in an appropriate, labeled, collection bottle. **(Appendix A)**
12. Assess the patient. If bronchospasm is identified post-treatment, administer another three puffs of Ventolin via the aerochamber. If Ventolin is administered, re-assess the patient after the bronchodilator treatment and inform the physician of any complications.
13. Document the following post-treatment:
 - A. Auscultation
 - B. Heart rate
 - C. Number of specimens obtained
 - D. Unsuccessful sample procurement
 - E. Complications
 - F. Medication administered

EDUCATION AND TRAINING

References and Related Documents

AARC Clinical Practice Guideline: Respir Care 2003; 48 (5): 529-533).

HSN *Respiratory Procedures Generating Droplet/Aerosols* policy

Perry & Potter, Perry A, Potter P. Clinical Nursing Skills & Techniques, 2014, p.1072.

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APPENDIX A

Test Ordered	Container	Requisition
AFB (TB)	Sterile sputum bottle	Bacteriology
C&S	Sterile sputum bottle	Bacteriology
Fungus Culture	Sterile sputum bottle	Bacteriology
Gram Stain	Sterile sputum bottle	Bacteriology
Legionella Culture	Sterile sputum bottle	Bacteriology
Blastomycosis	Sterile sputum bottle with Cytology fixative	Cytology
Fungal Stain	Sterile sputum bottle with Cytology fixative	Cytology
Fungus	Sterile sputum bottle with Cytology fixative	Cytology
Hemosiderine Laden Macrophages	Sterile sputum bottle with Cytology fixative	Cytology
Malignant Cells	Sterile sputum bottle with Cytology fixative	Cytology
PCP	Sterile sputum bottle with Cytology fixative	Cytology