Sputum Induction

Purpose

To standardize the practice of obtaining expectorated sputum for laboratory analysis.

Scope

Respiratory Care Services provides equipment and therapy according to physician's orders for the purpose of obtaining sputum samples for analysis.

Audience

Licensed Respiratory Care Practitioner employed by Respiratory Care Services with understanding of age specific requirements.

Physician's Order

There must be an order in the patient's medical record for sputum induction that includes:

- Date and time of induction (i.e., Q AM x 3 days) is preferred.
- Medications or method is specified; otherwise use 3% hypertonic saline.
- Type of tests ordered on the specimen.

Indications

- Suspected Bacterial Pneumonia
- Suspected Pneumocystis Pneumonia
- Fever
- Questionable Chest X-ray
- Suspected cancer of the lung

Contra-indications

Hyper-reactive airway disease or wheezing such as with asthma, COPD.

Goals

To assist the patient in raising sputum adequate for laboratory examination.

Equipment

- 3% Saline (at least 45cc's)
- Small Volume Nebulizer
- Mouthpiece and tee adapter (use an aerosol mask if unable to used a mouthpiece.)
- Specimen cup
- Particle Respirator Mask

Procedure

Step	Action
1	Verify physician's order in the patient record and verify patient I.D.
2	Collect routine specimen in early a.m. before breakfast when possible. This is to be done by the night shift therapist.

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Procedure Continued

Step	Action
3	Obtain necessary supplies.
4	Identify patient; check wristband.
5	Wash hands.
6	Put on particle respiratory mask if patient is suspected to have tuberculosis.
7	Explain procedure to patient.
8	Ask the patient to cough to see if they can provide a specimen spontaneously.
9	If unable to produce a specimen with a spontaneous cough, proceed to step #11.
10	Auscultate chest. If the patient has a history of hyper-reactive airways or active wheezing, notify the ordering physician.
11	Place a minimum of 45 cc 3% saline in the ultrasonic nebulizer.
12	Instruct the patient to breathe deeply, inhaling the aerosol.
13	Instruct the patient to cough PRN and at 5 minute intervals.
14	If the patient experiences bronchospasm, a bronchodilator via hand held nebulizer should be administered.
15	If patient develops signs of adverse effects, discontinue therapy and notify the physician.
16	Collect expectorant into the specimen cup.
17	Label the specimen with the patient's name, unit history number, and time collected.
18	Obtain lab slip from the nursing unit.

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Procedure Continued

Step	Action
19	Leave the specimen with the unit clerk.
20	If after 30 minutes there are no results, stop the therapy and notify the physician.
21	Document in MAR, EPIC and Treatment Card as outlined in RCS Policies # 7.1.1 and # 7.1.2.

Recognizing A Sputum Sample

Sputum samples from the tracheobronchial tree compared to saliva are typically:

- More viscous, purulent and malodorous
- Color tinged, may have presence of blood

Samples that are from a patient with retained secretions and allergic or infectious process are typically:

- Stringy
- Mucoid
- Color tinged, yellow or green color

Certain infections or disease states may produce sputum characteristics:

- Pseudomonas Aeruginosa - thick, green, musky odor.
- Bronchiectasis - three-layered sputum, foul smelling.
- Asthma - mucus plugs or casts
- Cystic Fibrosis - thick, sticky

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

Correspond-ing Policies

RCS Policy and Procedure, Small Volume Aerosol Treatment (Hand-Held), #7.3.15.

RCS Policy and Procedure Manual, Ultrasonic Nebulizer Therapy, #7.3.25.

References

AARC Clinical Practice Guidelines: "Bland Aerosol Administration"; Respiratory Care, 1993; 38: 1196-1200.

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