

SMALL VOLUME NEBULIZER



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EQUIPMENT AND PATIENT PREPARATION

1. Verifies physician's order for appropriateness or evaluates procedure based on hospital protocol (see Indications CPG –ref #1, #2, #3)
2. Reviews patient chart for significant findings and data
3. Identifies and gathers the necessary equipment
4. Applies 3 or more mL of an alcohol-based hand rub to palm and rub hands together covering all surfaces of each hand until hands are dry (**Caution: should take at least 15 seconds for hands to become dry**); or if hands are visibly dirty or contaminated perform hand wash using a vigorous rubbing action for at least 10 seconds; and uses appropriate isolation precautions (CDC-ref #4)
5. Introduces self to the patient, stating name, department; confirms patient identification.
6. Explains the purpose of the procedure, including risks and safety precautions
7. Confirms patient and/or family understanding of the procedure

PATIENT EVALUATION

1. Measures pulse, respiratory rate and saturation; assesses color and level of dyspnea (ref #5).
2. Assesses breath sounds and notes adventitious sounds by lobe and segment
3. Establishes base line peak flow or FEV1 if delivering bronchodilator agent (CPG -ref#1,#3)

IMPLEMENTATION OF PROCEDURE

1. Assembles the aerosol delivery device (gas source, flowmeter, tubing, SVN, and mouthpiece or mask) without error or corrects assembly as necessary
2. Adds appropriate dose of drug and diluent as necessary
3. Adjusts gas flow to the recommended 6-8 L/m (ref#6), or manufacturers recommendations.
4. Checks for proper function (presence of aerosol)
5. Properly places the administration device; evaluates fit and patient comfort
6. Coaches patient to breath normally through the mouth during the treatment with periodic deep breaths to TLC and an inspiratory hold to increase particle deposition to the lower airways (ref #7); watch patient for signs of hypo/hyperventilation.
7. Discontinues treatment if adverse reaction occurs, monitors patient and notifies appropriate personnel
8. Shakes or taps nebulizer to decrease remaining volume of drug and diluent -dead volume
9. Stops treatment when aerosol is no longer being produced

FOLLOW-UP

1. Measures pulse, respiratory rate and saturation; assesses color and level of dyspnea (ref #5).
2. Instruct patient to cough using proper technique
3. Assesses breath sounds and notes changes in adventitious sounds by segments and lobes
4. Notes changes in peak flow or FEV1 after delivering bronchodilator agent (CPG -ref#1,#3)
5. Disassembles equipment and discards unused medication or solutions
6. Rinses with sterile water and uses gas source to dry nebulizer
7. Decontaminates hands with an alcohol-based hand rub or performs a 15 second hand wash
8. Records relevant data in patient chart and appropriate departmental records
9. Provides modifications to patient care plan as needed, and reports this to appropriate personnel

DEMONSTRATES KNOWLEDGE OF FUNDAMENTAL CONCEPTS

1. Identifies indications for aerosol therapy (ref#1,#2) and drug(s) being administered
2. Identifies potential complications associated with aerosol administration (ref#1,2) and drug(s) being administered.
3. Differentiates particle sizes targeted for the upper vs the lower airway.
4. Explains what MMAD means in relation to particle sizes being produced (ref#6)
5. Identifies the percent of the drug (aerosol) that reaches the target tissue.

CLINICAL COMPETENCY PERFORMANCE CRITERIA

1. Displays rational judgment and is able to explain the relationship between theory and clinical practice.
2. Performs procedure in a reasonable time frame and with attention to appropriate detail
3. Maintains aseptic technique and takes appropriate safety precautions
4. Communicates clearly, and in a courteous manner

Additional Comments: include errors of oversight or sequence, strengths and weaknesses during procedure (i.e. knowledge, communication skills, and patient interaction skills)

Summary performance evaluation

Please use the following criteria and select the appropriate pop-up menu.

Satisfactory - ready for clinical application with minimal supervision. Performed procedure accurately, or was able to correct performance without injury to the patient or decreasing effect of therapy being given.

Unsatisfactory performance – not ready for clinical application. Requires remediation under one of the following categories

Minor - Unsatisfactory: needs to review fundamental concepts or requires re-evaluation of minor deficiency(s) (ex. forgets to wash hands during the Follow-up stage. Must be re-evaluated on this step not the whole procedure).

Major - Unsatisfactory: requires additional supervised clinical practice and complete re-evaluation of the procedure.

REQUIRED: Summary Performance Evaluation

References:

- 1) AARC Clinical Practice Guideline: "Selection of Aerosol Delivery Device" RC 1992;37: p891-897
- 2) AARC Clinical Practice Guideline: "Delivery of Aerosols to the Upper Airway" RC 1994;39(8): p803-807
- 3) AARC Clinical Practice Guideline: Assessing Response to Bronchodilator Therapy at Point of Care" RC 1995;40(12):1300-1307
- 4) CDC, Guideline for Hand Hygiene in Healthcare Settings. MMWR Oct. 25, 2002; vol. 51(No. RR-16)
- 5) Mahler D, Weinberg D, Wells C, and Feinstein A. The measurement of dyspnea: contents, interobserver agreement and physiologic correlates of two new clinical indexes. Chest 1984; 85:751-758
- 6) Scanlan CL, Spearman CB, Sheldon RL: "Egan's Fundamentals of Respiratory Care" Mosby 7th, 1999 p696, 684
- 7) Kacmarek RM, Hess D." The interface between patient and aerosol generator. Respir Care 1991;36:952-976

Summative Performance Evaluation:

Satisfactory _____
Minor Unsatisfactory _____
Major Unsatisfactory _____

Name of person being evaluated

Signature of Direct Supervisor

Date