
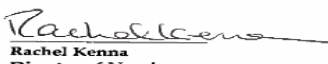



NEBULISER THERAPY SOP	
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1.0 Introduction

“The aim of nebuliser treatment is to deliver a therapeutic dose of medication as an aerosol in the form of respirable particles within a fairly short period of time” (British Thoracic Society 1997 (BTS), Currie & Douglas 2007). “Nebulisers are useful when large doses of inhaled medications are needed at a time when patients are too ill or otherwise unable to use handheld inhalers” (BTS 2007).

2.0 Definition

The purpose of nebulisation is to break liquid down into droplets into small enough particles that can be inhaled. It has the advantage of depositing a medication into an affected area which can act locally directly targeting problem areas’

3.0 Indications for Use

The most common indication for nebuliser therapy in children is the emergency treatment of:

- When a child or young person has an acute asthma attack
- When a child or young person is in respiratory distress
- When a child or young person has stridor
- Before physiotherapy to loosen secretions
- If child or young person is unable to use an inhaler
- The medicine required is not available in an inhaler preparation (*Bennett 2003, Kelly and Lynes 2011*)
- When large doses of nebulised antibiotics are required to treat or control persistent infections
- (*Daniels et al 2013*).

Nebuliser therapy is also indicated to deliver prophylactic medication such as Mucoid clearance, steroids and antibiotics.


4.0 Types of Nebulisers

Please see Cystic Fibrosis; A guide through your child's hospitalisation for images on Nebulisers in use within OLCHC and what medication is compatible in these

5.0 Equipment and Assembly

The nebuliser sets come with three components:

- The chamber (also called the 'pot' or 'acorn').
- A mouthpiece or mask (Mouthpieces should be used whenever antibiotics or steroids are nebulised to prevent their exhalation into the air and to minimise deposits of the drug on the child's face).
- And tubing

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The chamber comes in three parts:

- The base of the chamber has a gas inlet. This is the part of the chamber that the solution should be put into and to the bottom of which the tubing is attached
- Over the gas inlet, there is a detachable mushroom shaped piece of plastic (the dispersal component). Without it the nebuliser would not work properly
- The top of the chamber is designed to screw back onto the base. It is also designed to accept either a mask or a mouthpiece for administration of the nebuliser


6.0 Complications associated with Nebulisation Therapy

Adverse side effects of nebulisation are usually considered to be drug related. These may include:


- Giddiness
- Tremor
- Tachycardia
- Nausea
- Dry mouth
- Wheeziness
- Bronchospasm
- Constipation

Nebulised solutions, which are cold, non-isotonic, acidic or contain certain preservatives can cause bronchoconstriction.

Following inhalation via a facemask it is advisable to wash the child's face to prevent skin irritation. It is also advisable following steroid inhalation to rinse out the mouth to avoid possible oral candidiasis.

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ACTION	RATIONALE & REFERENCE
<p>Outline to the patient/guardian of the need to administer a nebuliser.</p> <p>Ascertain any previous experience the patient has of receiving nebuliser therapy and how this was tolerated</p> <p>All medications should be drawn up and administered according to the medicines administration policy</p> <p>In order to be effective, nebulisers should only be administered with volumes equal to or greater than 2.5ml and different medicines should be administered separately</p> <p>Syringes containing nebuliser solutions should not be taken to the patient at the same time as medications to be delivered by an alternative route (such as oral or intravenous)</p> <p>The most common nebuliser used in the hospital is the basic side stream nebuliser, although newer delivery systems are available involving an electronic delivery system for specific patients and nebulisers only.</p> <p>The child should sit in an upright position with the nebuliser device and mask attached comfortably. Encourage parent to position a smaller child on their lap and hold the nebuliser in front of the child's mouth and nose</p> <p>A set of observations should be recorded before commencement of the nebuliser, if this is to be administered for respiratory distress, stridor or asthma. The PEWS score should be recorded.</p> <p>A flow rate of 6 l/min is required to drive most nebulisers. (Kelly and Lynes, 2011).</p>	<p>To facilitate an appropriate explanation of nebuliser administration.</p> <p>To troubleshoot any previous issues and to identify what works best for the child</p> <p>To minimise the risk of an incorrect dose being administered and to adhere to Policy</p> <p>There is always a residual amount of solution left at the end of nebulisation. In order to minimise the amount of drug "wasted" in this residue, the starting volume needs to be at least 2.5ml</p> <p>To avoid potential errors in route of administration.</p> <p>Specific nebuliser systems are necessary to deliver the some antibiotics as these are only compatible with these as per manufacturer's instructions, including DNase I (dornase alpha, Pulmozyme), <u>tobramycin</u> (TOBI; Pari LC Plus nebulizer), and <u>aztreonam</u> (Cayston; Altera nebulizer) should only be delivered using nebulizers specifically approved by the drug manufacturer for use with these agents. Please see Eflow rapid nebuliser system guideline for further instruction.</p> <p>Sitting upright allows for maximum lung expansion (Boe et al, 2001).</p> <p>Baseline observations to monitor the patient's response to therapy.</p> <p>Ensures effectiveness of treatment and efficacy of prescribed medication.</p>


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<p>The child should be observed throughout the administration of the nebuliser treatment.</p> <p>Nebulisers take on average five to ten minutes to administer (Bennett 2003)</p> <p>The chamber does not empty completely and a residual volume of 0.5-1.5mL remains (Boe et al 2001). This residual fluid should be discarded before the next nebulisation.</p> <p>Discard after 1 week or if any discoloration, stickiness or cracking</p>	<p>The gas flow rate needs to be over 6L per minute to produce sufficiently small particles throughout the five to ten minutes of A typical administration (BTS 2016). Please refer to manufacturers guidelines for further instruction.</p> <p>To reach the target airways, the droplet size should be less than 5µm (micrometers). However, if droplets become too small (less than 1µm), they are likely to be deposited in the peripheries of the lung, where they do not have a therapeutic effect (Boe et al 2001).</p> <p>To clinically assess effectiveness of treatment.</p> <p>Length of administration will vary according to the amount of solution used</p> <p>The nebuliser device should be cleaned post use with warm soapy water (briel) by separating the three components to prevent colonisation, rinse with sterile water.</p> <p>The set should be labelled on the tubing to comply with same.</p> <p>As per manufacturer's guidance to ensure continued effectiveness and to minimise risk of cross-infection</p> <p>All nebuliser equipment is single patient use only.</p>
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