Inhalation Therapy

Bronchodilator Administration via Wet Nebulization Aerosol

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Thanks to UHN, Toronto for their assistance
Receiving an order for inhalation therapy...

• Upon receipt of a written order for bronchodilators via wet nebulized aerosol, RTs will be paged by the communication clerk or the RN to initiate assessment and administration (NO CHANGE from present)
Evaluation of order ...

• After being notified of the written order, RT's will evaluate the order, assess the patient status, determine the best modality for the administration of the inhaled medication and follow-up with the physician if needed (NO CHANGE from present)
The RT will ...

- RT’s will document the patient assessment on the ITA flow sheet and place into the patient’s chart.
- RT will decide to:
  - Keep aerosol treatments under RT delivery.
  - Transfer aerosol treatments to RN to deliver.
  - Suggest switch to MDI.
Shared responsibility of care...

• RT's will continue to care for patients with:
  • unstable cardiopulmonary status.
  • Wheezing, bronchospasm, decreased breath sounds and signs of respiratory distress (moderate to severe) and shortness of breath.
  • Tracheostomy tubes in place. (unless corked)
  • Oxygen > 50%
  • Non–bronchodilator medications
Transfer of therapy to RN...

- The responsibility of the administration of the wet nebulized aerosol treatments will be transferred to nursing when:
  - The patient’s cardiopulmonary status is stable.
  - The patient may have wheezing, bronchospasm or decreased breath sounds, **but is not** showing signs of respiratory distress (None to mild) or shortness of breath.
  - Patient receives wet treatments at home.
How will RNs be notified?

- ITA form will be completed by RT.
- RT's will verbally notify RNs of the transfer of care.
- RT's will insert a notation on the Medication Administration Record (MAR) to that effect.
Continuous RT support

• RT's will be available to reassess all patients when requested by RNs or MDs during the course of the therapy.
• RT's will be available for any other questions that RNs may have (i.e. modality, equipment, etc.)
RNs responsibilities after the transfer of care has occurred:

- Patients assessments.
- Administration of wet nebulized aerosol treatments to stable patients.
- Administration of medication by MDI and spacer devices. (or via other modality devices)
- Maintaining equipment used for the administration of the therapy.
RNs responsibilities after the transfer of care also include:

- Consulting RT whenever it is felt that another mode of administration would be preferable.
- Contacting RT when the patient’s status changes or becomes unstable.
- Completing all related documentation.
Now let’s review…

Inhaled medication via Metered Dose Inhaler (MDI) administration
Metered Dose Inhaler Operation

• The inhalers are designed to deliver an exact amount (metered dose) to the lungs each time they are used.
• The pressurized propellant gas is hydrofluoroalkanes (HFAs) and is ozone layer friendly.
• Metered dose inhalers are best used with spacer devices.
• Spacer devices are used to remove larger drug particles and reduce velocity of the aerosol, therefore allowing drug particles to reach smaller airways and alveoli.
Method of Administration

• Before using the inhaler, have your patient clear their chest of sputum.
• Ensure that the canister is firmly inserted into the outer actuator.
• Remove the plastic caps on the inhaler and the spacer device.
• Insert the inhaler mouthpiece into the back of the spacer device.
• Shake vigorously at least 3 to 5 times.
• Place the mouthpiece of the spacer device into patient’s mouth.
• Form an airtight seal with lips around the mouthpiece.
Method...

- Keep tongue out of the way.
- Hold the inhaler in the upright position.
- Firmly press down on the top of the canister to spray the drug into the spacer device.
- Instruct patient to take a slow deep breath in through his mouth.
- A slight hissing sound during the inhalation indicates that you have done it **incorrectly!** (breathing in too fast), if using an spacer.
Method....

- Remove the spacer device and keep mouth closed while holding breath as long as possible (5–10 seconds).
- Then breathe out slowly.
- If using a mask, press and hold the mask against the face for at least 6 breaths following the actuation of the MDI.
- Wait at least 1 minute before giving a second puff to obtain the best effect and to allow the canister pressure to rebuild; then repeat the above steps.
- The inhaler should be shaken before each puff.
Order of medication administration

- 1\textsuperscript{st} beta2 – adrenergic bronchodilator (ie. Ventolin)
- 2\textsuperscript{nd} anticholinergic bronchodilator (ie. Atrovent)
- WAIT 15 MINUTES
- 3\textsuperscript{rd} corticosteroids*** (ie. Flovent)

- ***Gargle and rinse mouth with water after inhaled the corticosteroid to help prevent throat irritation and infections.
How to use a turbohaler

• Before you use a new PULMICORT TURBUHALER for the first time, you should prime it. To do this, turn the cover and lift off. Hold PULMICORT TURBUHALER upright (with mouthpiece up), then twist the brown grip fully to the right and back again to the left. Repeat. Now you are ready to take your first dose. You do not have to prime it any other time after this, even if you put it aside for a prolonged period of time.

• Unscrew and lift off white cover. Hold turbohaler upright and twist grip forward and backward as far as it will go. You should hear a click.

• Breathe out gently, put mouthpiece between lips and breathe in as deeply as possible.

• Remove the turbohaler from mouth and hold breath for about 10 seconds. Replace white cover.
How to use a diskus

- Hold the outer casing in one hand while pushing the thumb grip away until a click is heard.
- Hold the diskus with mouthpiece towards you, slide lever away until it clicks. This makes the dose available for inhalation and moves the dose counter on.
- Holding the diskus level, breathe out gently away from the device, put mouthpiece in mouth and breathe in deeply.
- Remove from mouth and hold breath for about 10 seconds.
- Close by sliding thumb grip back towards you as far as it will go until it clicks.
Now about …

Aerosol Medication Via Micronebulizer

***This is an aerosol generating procedure. Proper PPE is required.
Wet nebulized aerosol therapy

- Device used to aerosolize a medication.
- Propelled by a gas source (usually oxygen).
- Given continuously.
- Pre-assembled kit contains:
  - Aerosol mask
  - Micro-nebulizer
  - Tubing
- Medication stocked in medication bin or ward stock.
Medication delivered via wet nebulization

- Bronchodilators
  - Beta-2 agonists: Ventolin
  - Anticholinergic: Atrovent
- Corticosteroid
  - Pulmicort
- Antibiotics
  - Tobramycin
Ventolin Nebules

- Concentrations of 2.5mg (1ml) or 5.0mg (2ml) in 2.5ml of normal saline.
- No reconstitution required.
- Can be mixed with atrovent or pulmicort.
Atrovent nebules

- 500 mcg/2 ml unit dose nebules
- Additional saline (1 to 2ml) required if not mixed with ventolin or pulmicort.

Pulmicort nebules

- 0.50mg/2ml and 1.0mg/2ml nebules.
**Procedure**

- Place content of nebule(s) into the micronebulizer cup. Verify expiration date.
- Connect nebulizer cup to mask.
- Attach tubing to nebulizer cup gas inlet.
- Attach other end of tubing to flowmeter (gas source).
- Sit up patient.
- Assess patient... Obtain patient’s pulse
- Do not administer if patient’s pulse >150bpm. Notify physician.
Procedure cont’d

- Adjust flow to nebulizer’s manufacturer specifications. (6–8 lpm)
- Watch patient for signs of increased SOB.
- Check patient’s pulse during and after treatment.
- Instruct patient on breathing method to follow:
  - Instruct him to breathe normally through open mouth
  - Ask patient to occasionally take in a deep breath and hold it for few seconds.
Procedure

• Continue nebulization until no mist is formed. (gently tap on cup)
• After use, shake out micronebulizer and hang over flowmeter to dry.
• Wipe mask of excess moisture with paper towel.
References:

6. RT department policy and procedure: Policies and Procedure For Aerosol Treatments (Adults)
7. RT department policy and procedure: Medication Administration Via MDI to Spontaneously Breathing Patients
Questions?