

Lesson 54: Administration of Medication via Metered Dose Inhaler (MDI)

I. Introduction

- A. **Metered Dose Inhalers** usually come in 3 pieces
 1. A mouthpiece
 2. A cap that covers the mouthpiece
 3. A canister of medication
- B. Technique for Proper Use
 1. Press the canister into the mouthpiece.
 2. Take the cap off the mouthpiece, hold inhaler upright and shake the inhaler.
 3. Turn the canister to the side allowing you to see what comes out of the mouth-piece.
 4. Press down on the canister. A fine mist should come out of the mouthpiece. One way to determine if there is still medication in an inhaler is to place the canister in a cup of water. If it sinks, it still has medication. If it floats, it is empty. Another way to make certain the resident's supply of metered dose medication doesn't run out is to count the doses.
 - a. If the can holds 200 doses and you use 8 puffs a day, you will use the contents of the canister in 25 days. Review the resident's medication administration record to calculate when the 25 days expire, and reorder the metered dose inhaler according to your facility's policy.
 5. Instruct the resident to tilt his/her head back slightly, and breathe out through his/her mouth.
 6. Position the inhaler for administration. There are three methods to use:
 - a. Put the inhaler an inch or two away from the resident's open mouth.
 - b. Have the resident put his/her lips all the way around the mouthpiece.
 - c. Attach an inhaler spacer to the mouthpiece and have the resident put his/her lips all the way around the spacer.
 7. Just as you press down on the canister, instruct the resident to breathe in slowly over 3-5 seconds. If the resident has trouble breathing at the right time, use a spacer. The spacer will hold the medication until the resident is ready to breathe.
 8. Instruct the resident to try and hold his/her breath for 10 seconds to allow the medication to reach deeply into the lungs. Remove the inhaler or spacer from the resident's mouth. Instruct the resident to let his/her breath out easily.
 9. If the resident is taking more than 1 puff of medication, wait at least one full minute before dispensing the second puff of medication.

II. Spacing and Proper Sequence of Inhaled Medications

- A. Bronchodilators/Beta Agonists (albuterol-Ventolin, Proventil; metaproterenol-Alupent; pirbuterol-Maxair; bitolterol-Tornalate)
 1. These agents work by promoting bronchodilation by relaxing bronchial smooth muscle.
 - a. Wait one minute between "puffs" for multiple inhalations of the same medication.
 - b. Wait 1-2 minutes before administering next medication.
- B. Anticholinergic Agents (ipratropium-Atrovent)
 1. Antagonizes the action of acetylcholine with resulting bronchodilation.
 2. Minimal systemic activity.
 3. Is used for maintenance therapy only, not acute episodes.
 4. May be more useful than traditional bronchodilators in chronic bronchitis.
- Miscellaneous Agents (cromolyn-Intal; nedocromil-Tilade)
 1. Stabilizes mast cells and inhibits the release of histamine from these cells.
 2. Must be used on a regular basis, not useful on a PRN basis.
 3. May be used prophylactically prior to exercise.
 - a. Wait one minute between "puffs" for multiple inhalations of the same medication.
 - b. Wait 1-2 minutes before administering next medication.
- C. Corticosteroids (beclomethasone-Beclovent, Vanceric; triamcinolone-Azmacort; flunisolide-AeroBid;

