Nebulized Colistimethate (Coly-Mycin®) or Colistin

Indication for use of this Medicine
Colistimethate is used to treat lung infections caused by *Pseudomonas*, a type of bacteria.

Dose - Either 75 mg or 150 mg twice a day by nebulization (each vial contains 150mg).

### Supplies needed for one month of treatment (75mg nebulized twice daily for one month)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Quantity</th>
<th>NDC#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colistimethate sodium 150mg vial 2mL</td>
<td>30 vials</td>
<td>39822-0615-01</td>
</tr>
<tr>
<td>Sterile water for injection flip top vial 10 ml</td>
<td>300 mL (30 vials x 10 mL)</td>
<td>00409-4887-10</td>
</tr>
<tr>
<td>Sodium chloride inhalation solution 0.9% 3mL OR 5mL depending on availability</td>
<td>180 mL (60 vials x 3 mL)</td>
<td>00487-9301-03 (3 mL)</td>
</tr>
<tr>
<td></td>
<td>300 mL (60 vials x 5 mL)</td>
<td>00487-9301-05 (5 mL)</td>
</tr>
<tr>
<td>Mini-Spike Dispensing Pins</td>
<td>60 Dispensing Pins</td>
<td>08021-4120-12</td>
</tr>
<tr>
<td>Luer-lock syringe 3mL (no needle)</td>
<td>60 syringes</td>
<td>08290-3095-75</td>
</tr>
<tr>
<td>Alcohol wipes</td>
<td>1 box (100/box)</td>
<td></td>
</tr>
</tbody>
</table>

### Supplies needed for one month of treatment (150mg nebulized twice daily for one month)

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How do I prepare the colistin?

Colistimethate comes as a powder in small vials. Store the unused vials at room temperature. Before use, colistimethate must be diluted with sterile water.

- Colistimethate **must be stored in the refrigerator after diluting** the vial with water.
- **Only make enough colistimethate for use within 24 hours.**
- Throw away any mixed and unused colistimethate after 24 hours.

**Preparation:**
1. Prepare a clean area for mixing colistimethate for nebulization.
2. Wash your hands.
3. Wipe off the top of one sterile water vial and the colistimethate vial(s) using a separate alcohol wipe for each vial. Discard the alcohol wipes.
4. Open the packages for the Mini-Spike Dispensing Pins: one for each colistimethate vial and one for a single vial of sterile water. The Mini-Spike Dispensing Pins are designed to allow the addition of liquid to a vial or the withdrawal of liquid from a vial without the use of a needle.

**Reconstitution (mixing) of colistimethate:**
1. Pick up the Mini-Spike Dispensing Pin (or “Dispensing Pin”) using the tab (do not touch the pointed end of the spike). If you touch the pointed end of the Mini-Spike Dispensing Pin, throw it away and open a new package.
   - Using one Dispensing Pin, insert the pointed end into one **sterile water** vial through rubber stopper.
   - Using the other Dispensing Pin, insert the pointed end into one colistimethate vial through rubber stopper.
   - If preparing **two** colistimethate vials for use within one day, insert a third Dispensing Pin into the second vial of colistimethate.
   - Remove the blue cap from the top of each Dispensing Pin, taking care to not touch the top of the Dispensing Pin. Place the blue caps on a clean paper towel.
2. Open up the package for one 3 mL Luer-lock syringe. Pick up the 3 mL syringe by the barrel (do not touch the tip of the syringe). Screw the syringe tip into the top portion of the Dispensing Pin in the sterile water vial. Withdraw 2 mL of sterile water into the syringe by pulling back on the tip of the plunger of the syringe with one hand while holding the sterile water vial with the other hand (do not touch the sides of the plunger or the tip of the syringe). Unscrew the syringe from the Dispensing Pin.
3. Screw the syringe containing the 2 mL of sterile water into the top portion of Dispensing Pin in the colistimethate vial. Inject the sterile water into the colistimethate vial and swirl gently to mix. Do not shake the vial as this will make the medicine foam.
4. If you prepare a second vial of colistimethate for use on the same day, you may use the same syringe. Withdraw 2 mL water from the sterile water vial and add to the second colistimethate vial and swirl gently to mix. Do not shake the vial as this will make the medicine foam. Place the blue cap on the top of the Dispensing Pin for the second colistimethate vial. **Store this second vial in the refrigerator until use, but no longer than 24 hours after mixing.**
5. The sterile water vial must be discarded after use. It cannot be saved for reuse even if there is water left in the vial since it has no preservative to prevent bacterial growth.
Measuring the correct dose of colistimethate for nebulization:
1. Each vial of reconstituted colistimethate contains 150 mg of drug in a 2 mL volume.
   - A 150 mg dose is 2 mL of solution (one vial provides the full dose)
   - A 75 mg dose is 1 mL of solution (one vial provides two doses)
   - Your dose is _______ mg which is _____ mL of solution
2. Using a new 3 mL Luer-lock syringe, screw the syringe into the top portion of the Mini-Spike Dispensing Pin in the colistimethate vial and draw up the dose. Unscrew the syringe and put your measured dose into the nebulizer cup.

Diluting the colistimethate with sodium chloride inhalation solution (0.9%) in the nebulizer cup:
Add enough sodium chloride (0.9%) solution to the nebulizer cup to total about 3 mL in the cup. Adding the sodium chloride (0.9%) solution to the colistimethate in the nebulizer cup makes it easier to nebulize colistimethate without coughing.
   - If your pharmacy supplied you with sodium chloride 0.9% 3 mL vials:
     - Add about 1/3 (or 1 mL) of the vial to the cup if your dose is 150 mg colistimethate.
     - Add about 2/3 (or 2 mL) of the vial to the cup if your dose is 75 mg colistimethate.
   - If your pharmacy supplied you with sodium chloride 0.9% 5 mL vials:
     - Add about 1/5 (or 1 mL) of the vial to the cup if your dose is 150 mg colistimethate.
     - Add about 2/5 (or 2 mL) of the vial to the cup if your dose is 75 mg colistimethate.
   - If you add more of the sodium chloride 0.9% solution to the cup, this will not affect the colistimethate treatment. Adding more will only increase the length of time needed to nebulize the medication.
   - Use a separate sodium chloride 0.9% vial for each neb treatment. The vial is designed for single use only and must be discarded after a single use.

Storing unused colistimethate
Put the remaining mixed, unused colistimethate in the refrigerator until your next treatment. Once colistimethate is prepared, it must be either used right away or stored in the refrigerator for use within 24 hours. If the mixed, unused colistimethate is not used the same day it is mixed, it must be thrown away.

How do I do the nebulizer treatment?
1. Attach one end of the smooth tubing to the air compressor and the opposite end to the nebulizer. Turn the air compressor on. You should see a fine mist. If not, make sure the compressor is working by disconnecting the smooth tubing. Feel for air coming from the compressor. If the compressor is working properly, check all connections. If the nebulizer is still not misting, use a different nebulizer kit.
2. Place the mouthpiece in your mouth. Some small children use a mask over the mouth and nose rather than a mouthpiece.
3. Take slow, deep, even breaths through your mouth. Make sure the medicine cup is kept upright.
4. Continue the treatment until the medicine is finished (no mist comes out). If the medicine sticks to the side of the cup, gently tap the sides of the cup.
5. Foam may develop in the medicine cup during nebulization. This is a normal reaction of the drug.
6. After the treatment is over, pour 2 teaspoons of clean water into your nebulizer. Turn the air compressor on and let the water mist through the nebulizer for 15 seconds just as if you were doing a treatment. This will clean out any remaining TOBI® from the tiny tubes which form the mist.

How do I use?
Take all of your medicine and airway clearance treatments in the following order. If you have not been prescribed a certain medicine you can skip that step. Please follow any specific orders you have been given from your doctor.
   1. Bronchodilator (Albuterol)
   2. Hypertonic Saline (Hyper-Sal™)
   3. DNase (Pulmozyme®)
   4. Airway clearance (Vest, Acapella, Flutter, Manual Chest Physiotherapy)
   5. Asthma Controller Medications (Flovent®, Advair, Symbicort)
   6. Aerosolized antibiotic (Cayston®, TOBI®, Colistin)

How often are treatments done?
Treatments are most often scheduled twice daily. If you use a bronchodilator inhaler, use it before you do the therapy. Your symptoms should improve or remain stable as you continue the therapy. If your infection does not improve or if it gets worse, call your doctor.

Are there any side effects?
Some people have shortness of breath and increased coughing. If these occur, call your doctor.

How Do I Clean and Disinfect My Nebulizer?
Daily cleaning and disinfecting of your Colistin nebulizer is very important in preventing infection and keeping the nebulizer working well.

How do I clean and disinfect by hand?

To clean and disinfect by hand, you can use either vinegar and water method or rubbing alcohol method. If you have Cystic Fibrosis (CF) do not use the vinegar and water method.

Vinegar and Water Method
   1. Take the nebulizer apart. Wash the pieces in warm soapy water.
   2. Rinse with hot tap water.
   3. Place the nebulizer pieces in a bowel and add enough vinegar and water solution to completely cover the equipment. Make the mixture of 1 part white vinegar (5% solution from your grocery store) to 2 parts water (1 cup vinegar to 2 cups water).
   4. Soak the nebulizer for 30 minutes to 2 hours.
   5. Rinse all of the parts of the nebulizer with sterile water. Do not use water from the faucet, bottled, or distilled water; it could be contaminated. You can make water sterile by boiling it for 5 minutes. Use this water once, and then throw it out.
   6. Place the pieces on a paper towel to dry.

Rubbing Alcohol Method
   1. Take the nebulizer apart. Wash the pieces in warm soapy water.
   2. Rinse with hot tap water.
3. Place the nebulizer pieces in a bowl and add enough rubbing alcohol (isopropyl alcohol) to completely cover the nebulizer pieces.
4. Soak the nebulizer pieces for 5 minutes.
5. Rinse the nebulizer pieces with **sterile water**. Do not use water from the faucet, bottled, or distilled water. You can make water sterile by boiling it for 5 minutes. Use this water once, and then throw it out.
6. Place the nebulizer pieces on a paper towel to dry.

**How do I clean and disinfect by heat?**

**Note:** Use the following heat methods only for sturdy, hard plastic nebulizer cups. Heat cleaning may melt lighter, clear plastic nebulizers.

**How do I clean and disinfect in the dishwasher**

1. Take the nebulizer apart.
2. Place the pieces in a dishwasher basket on the top rack of the dishwasher.
3. After the dishwasher cycle is done, remove the pieces and shake out the extra water.
4. Air-dry the nebulizer pieces on a paper towel.

**How do I clean and disinfect in the microwave?**

1. Take the nebulizer apart. Wash the pieces in warm soapy water.
2. Rinse with hot water.
3. Place the nebulizer pieces in a bowl. Add enough water to completely cover the nebulizer pieces.
4. Microwave for 3-5 minutes; shorter time in high power microwaves to keep the nebulizer from melting.
5. Place the nebulizer pieces on a paper towel to dry.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 3/2017 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#5851