

UTMB RESPIRATORY CARE SERVICES PROCEDURE - Aerosolization of Pentamidine	Policy 7.3.19 Page 1 of 5
Aerosolization of Pentamidine Formulated: 12/88	Effective: 10/18/94 Revised: 12/03/14

Aerosolization of Pentamidine

Purpose	To standardize the delivery of aerosolized Pentamidine.
Policy	<ul style="list-style-type: none"> • Respiratory Care Service provides equipment, supplies, and therapy according to physician's orders and provides an appropriate environment to assure minimal exposure of practitioners. • All Pentamidine treatments should be given with the patient enclosed in a negative pressure room. For treatment in patients that are potentially infectious for <i>Mycobacterium tuberculosis</i>, therapy must be done in a negative pressure room. <p>Accountability/Training</p> <ul style="list-style-type: none"> • May be administered by a licensed respiratory care practitioner. • Training must be equivalent to the minimal Therapist entry level in Respiratory Care Service (RCS) with understanding of age specific requirements of patient population treated.
Physician's Order	<ul style="list-style-type: none"> • Type of medication (Pentamidine). • Amount/dose to be delivered. • Frequency/duration. • A standard PRN bronchodilator order should be secured with each Pentamidine treatment (in cases where wheezing occurs, the Pentamidine aerosolization will be terminated and a small volume nebulizer treatment of one (1) unit dose bronchodilator will be administered, then the Pentamidine therapy will be completed).
Special Considerations	<p>The practitioner must utilize proper safety attire and equipment which includes:</p> <ul style="list-style-type: none"> • N95 Mask • Safety glasses • Isolation gown • Gloves
Indications	Patient who have had one (1) episode of Pneumocystis or a pronounced decrease in T-4 cells.
Contra-indications	<p>Adverse side effects of medication (relative contraindications).</p> <ul style="list-style-type: none"> • Patients with demonstrated hypersensitivity to inhaled or parenteral Pentamidine.
Goals	<ul style="list-style-type: none"> • The acute treatment of Pneumocystis Carinii pneumonia. • Prophylactic treatment of patients susceptible to Pneumocystis Carinii pneumonia.

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Equipment and Supplies

Respiratory Care Services will provide:

- Respigard II nebulizer system.
- Hand held nebulizer.
- Unit dose bronchodilator
- 50 psi gas source with flow meter
- Do Not Enter sign
- N95 filter mask (to be worn by therapist)

Procedure

Step	Action
1	Verify patient using two patient identifiers. Verify physician's order. Wash hands. Gather all necessary equipment.
2	Obtain the prescribed reconstituted drug from pharmacy.
3	Explain procedure to patient.
4	Assemble equipment in patient's room. Place a 'Do Not Enter Sign' on door during therapy.
5	Have the patient put the mouthpiece in their mouth and adjust gas flow for a good mist - approximately six (6) lpm.
6	Instruct patient to breathe normally and to inhale and exhale through their mouth. Apply nose clips if needed.
7	Nebulize all of the six (6) ml in the nebulizer.
8	Monitor patient's respiratory rate, pulse, and breath sounds before, during and after treatment.
9	Advise staff and family to wait to enter room for 10 minutes to allow room to ventilate.
10	Dispose of the nebulizer and any other disposable supplies used for the treatment in a red isolation bag.
13	Document therapy in Epic per RCS policy # 7.1.1.

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Potential Side Effects

- Because there is considerable potential for acute side effects from the inhalation of Pentamidine, a respiratory therapist must be present with the patient at all times during administration. Potential side effects include:
- Fatigue – rest periods should be allowed due to fatigue that results from breathing through one-way valves and maintaining a tight mouthpiece seal.
 - Shortness of breath
 - Dizziness
 - Nausea
 - Pharyngitis
 - Burning sensation in back of throat – this is usually resolved by temporarily stopping therapy and allowing the patient to have a drink of some liquid
 - Bronchospasm and cough – especially in patients with asthma or reactive airway disease

Notify the physician of any more serious complications that arise during therapy (i.e. chest pain, palpitations, confusion, marked desaturation) and document in the patient’s medical record.

Side effects for bystanders or health care providers include:

- Shortness of breath
- Headache
- Burning of eyes, nose, and throat
- Nausea
- Lightheadedness

Patient Teaching

- Explain to the patient why Pentamidine aerosol treatment is being given.
- Explain the proper body alignment for maximal breathing efficiency.
- Patient should breathe through mouth and breathe slowly and deeply - a slight inspiratory pause is ideal.
- Breathing diaphragmatically assures that the maximum distribution and deposition of aerosol will occur in the basilar areas of the lung.
- Alert patient to possible onset of strong cough.
- As a result of patient teaching, the patient should be able to verbalize and demonstrate an understanding of this therapy.
- Therapy time varies between 20 and 45 minutes.

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Infection Control

Follow procedures outlined in Healthcare Epidemiology Policies and Procedures #2.24; Respiratory Care Services.

<http://www.utmb.edu/policy/hcepidem/search/02-24.pdf>

Safety

- To minimize the risk of exposure for others outside the room to the aerosolized particles of Pentamidine, the patient should be in a negative pressure room. Treatments for patients that are potentially infectious for *Mycobacterium tuberculosis* must be done in a negative flow room.
- Only the patient and respiratory therapist should be present during the aerosolization of Pentamidine. Other care givers or family members should minimize time in the room during the 30 minutes immediately following the Pentamidine treatment and will wear an N95 respirator if entry is necessary.
- If a negative pressure room is not available, during therapy and for the 30 minutes immediately following therapy, the door to the treatment room should be kept closed as much as possible.

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