Respiratory Medication Interventions Provisional Protocol during COVID-19

Temporary Guideline – COVID-19 (Coronavirus) Outbreak

All EMS providers should implement changes to limit aerosol-generating procedures in the field

- The pharmacologic interventions detailed here apply to ALL patient encounters requiring airway or respiratory procedures regardless of suspicion for viral infection during the COVID-19 outbreak
- Consultation with ***On-Line Medical Control*** should be considered for further guidance if necessary

Position Patient for Comfort

Suspicion for Asthma, COPD, Emphysema, Bronchitis, Pneumonia (etc.)
(requiring pharmacologic intervention)

P — Preferred use of patient's own prescribed metered dose inhaler (MDI)
-or-
Albuterol MDI (EMS) w/ spacer chamber
1-2 puffs
(Repeat x 1 PRN) — P

Aerosol / Nebulized medication therapy should be limited in use and deferred until Life Squad arrival to scene

DO NOT administer aerosol medication therapy if the patient:

- **Is not displaying signs of hypoxia**
- **Has no increased work of breathing**
- **Has only minimal wheezing**

P — Consider
Terbutaline Sulfate
Adult: 0.25mg SQ q 20 minutes (Repeat x 2 PRN)
Peds (12-16 y/o): 0.01mg/Kg q 20 minutes (Repeat x 2 PRN) — P

P — Consider:
Magnesium Sulfate
Adult: 2Gm IV Drip (over 10-20 min.)
Peds: 50mg/Kg IV Drip (over 10-20 min.) — P

P — For Severe Cases
Consider Epi 1:1,000 0.3 – 0.5mg IM
For patients in significant respiratory distress
Extreme caution in adults with known CAD
Use caution in patients > 60 years of age — P

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Respiratory Medication Interventions: Provisional Protocol during COVID-19 (Additional information, guidance and procedure)

Albuterol (Ventolin) Metered Dose Inhaler:
Metered Dose Inhalers (MDIs) are being added to the Life Squad inventory. MDIs are in short supply and currently on backorder from the manufacturer. Mercy St. Vincent and Promedica have supplied to us a limited number of Ventolin metered dose inhalers for use. 1 metered dose inhaler and 2 spacer chambers will be delivered to each Life Squad on Monday, April 6, 2020. Each MDI contains 200 metered dose sprays and is re-usable. While the spacer chamber is designed to be one-time patient use, we currently have limited supply. Spacer chambers, during this interim supply shortage, will have to be cleaned between each patient use (guidance provided below). As supply of MDIs increase we may receive different brand names for use (i.e., Ventolin, Proventil, ProAir, AccuNeb, etc.) as well as the contained number of metered dose sprays available in the inhaler (60 – 200). Procedurally the approach for use will be the same. You will continue to clean the spacer chambers until such time we have ample supply to move to single-patient use. Re-supply of available metered dose inhalers will occur through the LCEMS Annex.

MDI's are a preferred alternative to nebulized aerosol treatments during the COVID-19 outbreak to help minimize exposure in the field.

This procedure is offered as an option for use to reduce risk from aerosolization during the COVID-19 pandemic.

If a patient has their own prescribed MDI, its use is preferred over a nebulizer, or use of an MDI carried by EMS. For patients using their own MDI, a spacer chamber is not required.

INDICATIONS:
- Any situation in which an Albuterol nebulizer is indicated
- Albuterol nebulizer cannot be given or is less desirable due to procedural aerosol generation.

CONTRAINDICATIONS:
- Altered mental status
- Allergy to any ingredient delivered by MDI
- Patient unable to assist in performing procedure

MDI PROCEDURE:

1. Assess the patient and ensure they can cooperate effectively with use of the spacer-MDI device. Some patients in extremis may only be able to use a nebulizer device.
2. Verify the indication for Albuterol.
3. Remove caps from the spacer and metered dose inhaler (MDI)
4. Shake the inhaler for 3-5 seconds.
5. Priming of the inhaler may be required if the device is new or long period of no use: Spray 2-4 times to prime. This does not count as a dose of medication.
6. Connect the inhaler and the spacer
7. Have the patient exhale completely and seal his/her lips around the spacer mouth piece.
8. Squeeze one puff of the inhaler into the spacer.
9. Have the patient immediately take a slow deep breath to the extent possible, remove the spacer, and have the patient hold his/her breath for 5-10 seconds or as long as comfortable.
10. Allow the patient to resume breathing normally
11. Repeat dose as necessary per provisional protocol for MDI use.

CLEANING INSTRUCTIONS:

- Clean spacer between each patient use.
- Take apart the spacer
- Rinse in warm, soapy water.
- Rinse with clean water and air dry (rotate spacer chambers within inventory as needed)
- Clean the small hole in the MDI between patient use with a sanitizing solution

Please review the 4:14 minute video (link provided here) for guidance on use of the spacer-MDI device as well as cleaning: https://youtu.be/o0M1lLpOu4U

Terbutaline Sulfate, Injection:

Terbutaline Sulfate will be added, and can be considered for use. It is indicated for the prevention and reversal of bronchospasm in patients 12 years of age and older with asthma and reversible bronchospasm associated with bronchitis and emphysema. Terbutaline currently is on backorder from the manufacturer. Use, of course, would be dependent on availability. Terbutaline will be added to the Life Squad inventory only and not available for first response paramedic use:

1. Follow dosing recommendation provided in the protocol flowchart
2. Not recommended for pediatric patients < 12 years of age.
3. Subcutaneous (SQ) administration only.
4. May be repeated x 2 every 20 minutes PRN (3 dose total)

Terbutaline Sulfate formulary added to the end of this document for review

Magnesium Sulfate:
Magnesium sulfate administration for respiratory distress is already part of LCEMS protocol for use. Follow same guidelines for administration:

1. Adult: 2Gm IV drip over 10-20 minutes
2. Peds: 50mg/Kg IV drip over 10-20 minutes

Epinephrine 1:1,000 IM Injection:
Considered for use in patients with severe respiratory distress:

1. Epi 1:1,000: 0.3-0.5mg IM
2. Use extreme caution in adults with known coronary artery disease
3. Cardiac monitor required
4. Use caution in patients > 60 years of age

Terbutaline Sulfate (BRETHINE®)

Class

– Beta-adrenergic receptor agonist

Mechanism of Action

– Selective ß2 agonist which stimulates adrenergic receptors of the sympathomimetic nervous system, resulting in smooth muscle relaxation in the bronchial tree and peripheral vasculature

Indications

– Terbutaline Sulfate injection is indicated for the prevention and reversal of bronchospasm in patients 12 years of age and older with asthma and reversible bronchospasm associated with bronchitis and emphysema.

Contraindications

– Hypersensitivity to sympathomimetic amines or any component for the drug product.

Adverse Reactions

– Tremor, nervousness, dizziness, headache, drowsiness, palpitations, rapid heart rate, shortness of breath, chest discomfort, nausea, vomiting, weakness, flushed feeling, sweating, pain at the injection site, anxiety, muscle cramps and dry mouth.
– Synergistic with other sympathomimetics

Drug Interactions

– Don't use in patients being treated with monoamine oxidase inhibitors or tricyclic antidepressants. The action of terbutaline on the vascular system may be potentiated.
– Can produce a clinically significant cardiovascular effect in some patients as measured by pulse rate, blood pressure, and/or symptoms (uncommon).
– May produce ECG changes such as flattening of the T-wave, prolongation of the QTc interval, and ST segment depression.

Terbutaline Sulfate (BRETHINE®)

How Supplied

- 1mg/mL vial, injectable solution

Dosage and Administration

- **Adult**
  - Administer 0.25mg (0.25mL) SQ only.
  - May be repeated x 2 as necessary q 20 minutes
- **Pediatrics (12-16 years of age)**
  - Administer 0.01mg/Kg SQ only
  - May be repeated x 2 as necessary q 20 minutes

Duration of Action

- Onset: 15 minutes
- Peak effect: 30-60 minutes
- Duration: 4 hours