Albuterol is a selective beta2-adrenergic stimulator, resulting in potent broncho-dilation. It has a rapid onset of action and duration of two to six hours. Compared with epinephrine, there is less heart rate and blood pressure increase with albuterol. Often as the hypoxia and work of breathing decrease, the heart rate will actually decrease. Albuterol is also effective in lowing serum potassium. (See Hyperkalemia).

Indications and Administration

1. Respiratory distress due to Asthma or COPD and bronchospasm due to allergy or anaphylaxis.
   a. **Adults -** Place 0.5ml 5% solution in nebulizer and dilute with 2.5 ml NS or use one premix 3ml of 0.083% premixed solution. Consider adding atrovent (ipratropium) for most adults. Connect nebulizer to O_2 at 6 liters/min.
      i. Place patient in Semi-fowlers position and check breath sounds.
      ii. Have patient inhale as deeply as possible through mouth piece and exhale after removing mouthpiece from mouth. Continue treatment until nebulizer empty (usually 4-5 min.).
      iii. May be repeated as needed. In severe cases, continuous nebulization may be required.
      iv. May be given through in-line nebulization in intubated pts and in CPAP pts.
   b. **Pediatric -** < 2 years old, place 0.2ml 5% solution in nebulizer and dilute with 2.8 ml NS or use 1.2ml of 0.083% premixed solution and add NS to make 3.0 ml. Connect nebulizer to O_2 at 6 liters/min. > 2 to 12 years old, place 0.3 – 0.5 ml 5% solution in nebulizer and dilute with NS to make 3 ml or use 1.8 - 3.0 ml of 0.083% premixed solution and add NS to make 3 ml. Connect nebulizer to O_2 at 6 liters/min.
      i. See above procedure
2. For signs, symptoms, and history suggesting hyperkalemia.
   a. **Adults** – begin an albuterol continuous nebulizer treatment to last until you reach the ED.
3. For all indications, albuterol can be administered in-line with CPAP or BVM.

Notes

Albuterol Sulfate

1. As with epinephrine, use with caution in patients with a history of hypertension, coronary artery disease, congestive heart failure, hyperthyroidism, pregnancy, diabetes, and sensitivity to beta - adrenergic stimulators.
2. Discontinue if pt develops chest pain or dysrhythmias during nebulization.
3. Although rare, albuterol can produce paradoxical bronchospasm, which is potentially life-threatening. This adverse reaction is more common with inhaled steroids. If this occurs, discontinue immediately.
4. Albuterol must reach the alveoli to be absorbed. Patients in severe distress with minimal tidal volume may not benefit from albuterol immediately. Continuous albuterol nebs may help or Intubation may be necessary.
5. COPD exacerbations may not respond to albuterol if there is no component of bronchospasm or wheezing.
6. Side effects include anxiety, tremors, nausea and vomiting.

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