

The logo consists of the letters 'RX' in a white, serif font, centered within a dark gray square.

Drug Name: Albuterol Sulfate

Trade Name: Albuterol, Proventil, Ventolin

Class:

- Beta₂ Agonist
- Sympathomimetic

Mechanism of Action:

Acts selectively on Beta₂ receptor sites in the lungs, relaxing bronchial smooth muscle, decreasing airway resistance, & relief of bronchospasm. Although Albuterol is beta selective, it will cause some CNS stimulation, cardiac stimulation, increased diuresis, & gastric acid secretion.

Indications:

- Bronchial asthma
- Bronchospasm in acute exacerbation of COPD (chronic bronchitis, emphysema)
- Bronchospasm associated with cardiac asthma
- Bronchospasm in:
Anaphylaxis
Burns
Toxic Inhalations

Contraindications:

- Known hypersensitivity
- Tachydysrhythmias

Precautions:

- HTN
- Lactation & Pregnancy (C)
- Diabetes
- Seizures
- Known cardiac disease
- Hyperthyroidism

For the above reasons, use with caution in geriatric patients.

CAUTION: All patients receiving inhaled beta agonists and/or anticholinergic medications should be observed for a least one hour following treatment for return of symptoms.

Dosage:

Adults:

- MDI—1-2 inhalations, 1 minute each, repeated every 15 minutes as needed.
- Nebulizer—2.5 mg via nebulizer, O₂ flow @ 8 L per min, normally takes 8-12 minutes to administer. May repeat as needed.
- Hyperkalemia (Intubated): 4 unit doses (10 mg) directly down ETT followed by hyperventilation.

Pediatrics:

- MDI—compliance with MDI difficult to achieve, nebulizer preferred.
- Nebulizer—Local respiratory experts have seen no reason to specify a different dosage for pediatrics.

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Onset:

- 5-15 minutes after inhalation, usually with some prompt improvement

Duration:

- 3-4 hours

Side Effects:

Mostly sympathetic responses including:

- Palpitations, Tachycardia
- Anxiety, Nervousness
- Dizziness
- HA
- Tremor
- N/V

Less frequent, but more concerning:

- HTN
- Dysrhythmias
- Chest pain

Interactions:

- Antagonistic Effects—Beta blockers including propranolol & esmolol.
- Additive Effects—MAOI's, TCA's, other sympathomimetics

PEARLS:

- ***The first dose is administered in conjunction with atrovent. Second and subsequent nebulizers are with albuterol only.***
- ***The nebulizer system can be adapted to accommodate a mask if the patient is too fatigued or working too hard to hold the nebulizer. It can also be adapted to ET administration. Both ET & mask nebulizer treatments should have an O2 flow rate of 8-10 L/min.***
- ***The medication chamber should be kept upright to ensure efficient medication administration, patients have a tendency to tilt the chamber, recheck it often. "Tap" the container toward the end of the treatment to ensure complete administration.***
- ***Monitor for dramatic increase in heart rate, development of frequent ventricular ectopy, or development of serious CNS symptoms.***
- ***Albuterol can cause hyperglycemia and hypokalemia. Both of these effects occur from stimulation of beta₂-receptors, resulting in gluconeogenesis and intracellular movement of potassium. These effects occur most commonly with inhalation (via nebulization) of relatively large doses of albuterol (e.g., 5—10 mg).***