

ALBUTEROL

I.V. continuous infusion (Canadian labeling; product not available in U.S.): Severe bronchospasm and status asthmaticus: Initial: 5 mcg/minute; may increase up to 10-20 mcg/minute at 15- to 30-minute intervals if needed

Exacerbation of asthma (acute, severe) (NIH Guidelines, 2007):

Metered-dose inhaler: 4-8 puffs every 20 minutes for up to 4 hours, then every 1-4 hours as needed

Solution for nebulization: 2.5-5 mg every 20 minutes for 3 doses, then 2.5-10 mg every 1-4 hours as needed, or 10-15 mg/hour by continuous nebulization

Exercise-induced bronchospasm (prevention): *Metered-dose inhaler*: 2 puffs 5-30 minutes prior to exercise

Renal Impairment Use with caution in patients with renal impairment. No dosage adjustment required (including patients on hemodialysis, peritoneal dialysis, or CRRT; Aronoff, 2007).

Administration

Metered-dose inhaler: Shake well before use; prime prior to first use, and whenever inhaler has not been used for >2 weeks or when it has been dropped, by releasing 3-4 test sprays into the air (away from face). HFA inhalers should be cleaned with warm water at least once per week; allow to air dry completely prior to use. A spacer device or valved holding chamber is recommended for use with metered-dose inhalers.

Solution for nebulization: Concentrated solution should be diluted prior to use. Blow-by administration is not recommended, use a mask device if patient unable to hold mouthpiece in mouth for administration.

Infusion solution (Canadian labeling; product not available in U.S.): Do not inject undiluted. Reduce concentration by at least 50% before infusing. Administer as a continuous infusion via infusion pump.

Oral: Do not crush or chew extended release tablets.

Monitoring Parameters FEV₁, peak flow, and/or other pulmonary function tests; blood pressure, heart rate; CNS stimulation; serum glucose, serum potassium; asthma symptoms; arterial or capillary blood gases (if patients condition warrants)

Test Interactions Increased renin (S), increased aldosterone (S)

Pharmacotherapy Pearls The 2007 National Heart, Lung, and Blood Institute Guidelines for the Diagnosis and Management of Asthma do not recommend the use of oral systemic albuterol as a quick-relief medication and do not recommend regularly scheduled daily, chronic use of inhaled beta-agonists for long-term control of asthma.

Special Geriatric Considerations Because of its minimal effect on beta₁-receptors and its relatively long duration of action, albuterol is a rational choice in elderly when a beta-agonist is indicated. Elderly patients may find it beneficial to utilize a spacer device when using a metered dose inhaler. Oral use should be avoided due to adverse effects.

Dosage Forms Excipient information presented when available (limited, particularly for generics); consult specific product labeling.

Aerosol, for oral inhalation:

ProAir® HFA: 90 mcg/inhalation (8.5 g) [chlorofluorocarbon free; 200 metered actuations]

Proventil® HFA: 90 mcg/inhalation (6.7 g) [chlorofluorocarbon free; 200 metered actuations]

Ventolin® HFA: 90 mcg/inhalation (18 g) [chlorofluorocarbon free; 200 metered actuations]

Ventolin® HFA: 90 mcg/inhalation (8 g) [chlorofluorocarbon free; 60 metered actuations]

Solution, for nebulization: 0.083% [2.5 mg/3 mL] (25s, 30s, 60s); 0.5% [100 mg/20 mL] (1s)

Solution, for nebulization [preservative free]: 0.021% [0.63 mg/3 mL] (25s); 0.042% [1.25 mg/3 mL] (25s, 30s); 0.083% [2.5 mg/3 mL] (25s, 30s, 60s); 0.5% [2.5 mg/0.5 mL] (30s)

AccuNeb®: 0.021% [0.63 mg/3 mL] (25s); 0.042% [1.25 mg/3 mL] (25s)

Syrup, oral: 2 mg/5 mL (473 mL)

Tablet, oral: 2 mg, 4 mg

Tablet, extended release, oral: 4 mg, 8 mg

VoSpire ER®: 4 mg, 8 mg

Dosage Forms: Canada Excipient information presented when available (limited, particularly for generics); consult specific product labeling.

Injection, solution, as sulphate:

Ventolin® I.V.: 1 mg/1mL (5 mL)

Selected References

National Asthma Education and Prevention Program, "Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma-Summary Report 2007," *J Allergy Clin Immunol*, 2007, 120(5 Suppl):94-138.

◆ **Albuterol and Ipratropium** see Ipratropium and Albuterol on page 975

◆ **Albuterol Sulfate** see Albuterol on page 50

Alcaftadine (al KAF ta deen)

Brand Names: U.S. Lastacaft™

Generic Availability (U.S.): No