Approved 9/17/25, Effective 1/15/26, replaces all prior versions

16PP – LEVALBUTEROL (XOPENEX®)

EMERGENCY MEDICAL DISPATCHER	Self-Administration Phone Directive - 3B 3C 3D 12B
EMERGENCY MEDICAL RESPONDER	Assist Pt with Self Administration - 3B 3C 3D 12B
EMT	
EMT-INTERMEDIATE 85	
ADVANCED EMT	
PARAMEDIC	

Class: Sympathomimetic Bronchodilator

Actions/Pharmacodynamics: Levalbuterol is a relatively selective $beta_2$ adrenergic stimulant. Levalbuterol causes relaxation of the smooth muscles of the bronchial tree thus decreasing airway resistance, facilitating mucus drainage, and increasing vital capacity. As an isomer (a differing molecular structure of the same atoms) of albuterol, marketing of levalbuterol historically describes milder effects on $beta_1$ (heart) or alpha (peripheral vasculature) receptors than albuterol. This has not consistently been proven in clinical trials. In therapeutic doses, levalbuterol, by inhibiting histamine release from mast cells, also reduces the mucus secretion, capillary leaking, and mucosal edema caused by an allergic response in the lungs.

Indications:
Dyspnea - Uncertain Etiology (3B)
Dyspnea - Asthma (3C)
Dyspnea - Chronic Obstructive Pulmonary Disease (3D)
Acute Allergic Reactions (8D)
Bee/Wasp Stings (8F)
Smoke Inhalation (12B)

Contraindications: Known hypersensitivity to levalbuterol or albuterol. Levalbuterol should not be used if the sole etiology of dyspnea is strongly suspected to be CHF, as levalbuterol-induced tachycardia (even if milder than albuterol) may worsen the compromised cardiac output in CHF.

Pharmacokinetics: Onset within 5–15 minutes; peak effect in 1.5 hours; duration of effect is up to 5-8 hours; half-life is 3-4 hours. Distribution: When inhaled, levalbuterol is distributed to muscle cells along the bronchial tree. Very little is systemically absorbed and distributed.

Side Effects: Tremors, anxiety, dizziness, headache, cough, reflex bronchospasm, palpitations, tachycardia, and hypertension.

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PROTOCOL 16PP: Levalbuterol (Xopenex®)

Dosage:

Dyspnea - Uncertain Etiology - Adult & Pediatric Weight ≥ 15kg (3B)
Smoke Inhalation - Adult & Pediatric Weight ≥ 15kg (12B)
2.5 mg nebulized, may repeat once.

Dyspnea - Uncertain Etiology - Pediatric Weight < 15kg (3B)
Smoke Inhalation - Pediatric Weight < 15kg (12B)
1.25 mg nebulized, may repeat once.

Dyspnea - Asthma - Adult & Pediatric Weight ≥ 15kg (3C)
Dyspnea - Chronic Obstructive Pulmonary Disease - Adult (3D)
Acute Allergic Reactions - Adult & Pediatric Weight ≥ 15kg (8D)
Bee/Wasp Stings - Adult & Pediatric Weight ≥ 15kg (8F)
2.5 mg nebulized (with ipratropium bromide 0.5 mg), may repeat twice.

Dyspnea - Asthma - Pediatric Weight < 15kg (3C)
Acute Allergic Reactions - Pediatric Weight < 15kg (8D)
Bee/Wasp Stings - Pediatric Weight < 15kg (8F)
1.25 mg nebulized (with ipratropium bromide 0.25 mg), may repeat twice.

How Supplied: 1.25 mg/3 mL or 1.25mg/0.5 mL in nebulizer vials.
(Always check concentration and dose per container at time of patient medication administration)