

Glycopyrrolate (Seebri Neohaler) for Maintenance Therapy in Patients with COPD

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STEPS new drug reviews cover Safety, Tolerability, Effectiveness, Price, and Simplicity. Each independent review is provided by authors who have no financial association with the drug manufacturer.

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Glycopyrrolate (Seebri Neohaler) is an inhaled long-acting muscarinic antagonist agent labeled for maintenance treatment in patients diagnosed with chronic obstructive pulmonary disease (COPD).¹⁻³

Drug	Dosage	Dose form	Cost*
Glycopyrrolate (Seebri Neohaler)	15.6 mcg inhaled twice a day	15.6-mcg capsule	\$419

*—Estimated retail price of one month's treatment based on information obtained at <http://www.goodrx.com> (accessed August 4, 2017).

SAFETY

Because glycopyrrolate does not reverse acute bronchospasm, it should not be initiated in patients during acutely deteriorating or potentially life-threatening episodes of COPD. Glycopyrrolate should also not be used for the relief of acute symptoms. In addition, it may worsen anticholinergic symptoms such as urinary retention; narrow-angle glaucoma and paradoxical bronchospasm may occur. The use of glycopyrrolate should be discontinued if any of these problems develop. Clinical studies excluded patients who had a history of these conditions.

Glycopyrrolate has not been studied in women who are pregnant or breastfeeding. It is a U.S. Food and Drug Administration pregnancy category C drug.

TOLERABILITY

Glycopyrrolate is generally well tolerated with infrequent adverse effects (less than 2% to 3%), and dropout rates were comparable to those reported with placebo. Some patients (less than 5%) reported experiencing mild dry mouth, upper respiratory tract infection (number needed to harm = 91), and nasopharyngitis (number needed to harm = 500).^{3,4}

EFFECTIVENESS

No long-term research has evaluated the effect of glycopyrrolate on mortality. In clinical studies comparing glycopyrrolate with placebo, patients with moderate to severe COPD (2008 Global Initiative for Chronic Obstructive Lung Disease [GOLD] class 2 or 3) had a decreased need for albuterol and a lower likelihood of COPD exacerbations. Compared with placebo, glycopyrrolate reduced albuterol use by an average of 0.5 puffs per day. It also decreased the likelihood of patients experiencing a moderate to severe COPD exacerbation, with a number needed to treat (NNT) of 15 to prevent one exacerbation over a one-year period (95% confidence interval [CI], 8 to 121). In addition, glycopyrrolate decreased the number of COPD-related hospitalizations (NNT = 37; 95% CI, 28 to 187). Measures of quality of life have been shown to improve significantly for overall health, daily life, and perceived well-being in patients initiating maintenance treatment for moderate to severe COPD.⁴

In patients with severe to very severe airflow limitation (2008 GOLD class 3 or 4), glycopyrrolate and tiotropium (Spiriva) are similarly effective in preventing mild (i.e., managed at home) or moderate (i.e., requiring corticosteroid or antibiotic treatment) ►

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exacerbations. However, glycopyrrolate is less effective than tiotropium at preventing severe exacerbations requiring hospitalization (NNT of tiotropium vs. glycopyrrolate = 23; 95% CI, 12.2 to 156.1).⁵

PRICE

A one-month supply of glycopyrrolate costs approximately \$419. In comparison, a one-month supply of tiotropium costs about \$385.

SIMPLICITY

The dosage of glycopyrrolate is 15.6 mcg (one capsule) inhaled twice a day. It is also available in combination with indacaterol (Utibron Neohaler). As with other inhaled capsules for COPD, correct administration of glycopyrrolate may be difficult for patients with limited health literacy or the manual dexterity to complete the 13 steps correctly. Prescribers and pharmacists should explain use of the delivery system to new patients.¹⁻³

Bottom Line

Glycopyrrolate is a safe option for maintenance treatment to prevent moderate to severe exacerbations in patients with moderate to severe COPD, with only mild and rare adverse effects. However, tiotropium should be selected as maintenance therapy for patients at risk of severe COPD exacerbations requiring recurrent emergency assistance or hospitalization. Overall, glycopyrrolate offers no clinical or price advantage over tiotropium.

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