

Tiotropium slightly reduces COPD exacerbations

Clinical question In men with chronic obstructive pulmonary disease (COPD), does daily treatment with tiotropium (Spiriva) decrease the frequency of exacerbations?

Bottom line Daily treatment with tiotropium for six months slightly decreases the number of patients experiencing a COPD exacerbation, although it does not decrease the number of patients who will be admitted to hospital because of an exacerbation.

Synopsis Tiotropium (Spiriva) is a once-daily inhaled anticholinergic bronchodilator. To evaluate its effectiveness in the treatment of COPD, the investigators enrolled 1,829 men with moderate to severe disease, with a mean forced expiratory volume in one second (FEV1) of 36 per cent of that predicted. The men were at least 40 years old and all had an FEV1 of less than 60 per cent of that predicted and were taking less than 20mg prednisone daily. The patients were randomised to receive an inhaler delivering placebo or 18µg tiotropium, to be used daily for six months. Allocation to treatment group may not have been concealed from the enrolling investigators. Patients continued their usual medical care. The rates of dropout were high in the study: 27 per cent in the placebo group and 16 per cent in the active treatment group, primarily due to worsening

of symptoms. The percentage of patients experiencing an exacerbation of COPD during the six months was slightly, though statistically significantly, lower in the treated patients (27.9 per cent vs 32.3 per cent; $P=0.037$). In this study, one fewer patient experienced an exacerbation for every 23 patients treated with tiotropium instead of placebo (number needed to treat = 22.7; 95 per cent confidence interval 12–456), but the number of patients who need to be treated could be much higher ($n=456$). The number of patients requiring hospital admission because of COPD exacerbation was not significantly different between the two groups.

Level of evidence 1b– (randomised controlled trial with wide confidence interval)

Reference Niewoehner DE, Rice K, Cote C, et al. Prevention of exacerbations of chronic obstructive pulmonary disease with tiotropium, a once-daily inhaled anticholinergic bronchodilator. *Annals of Internal Medicine* 2005;143:317–26.

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