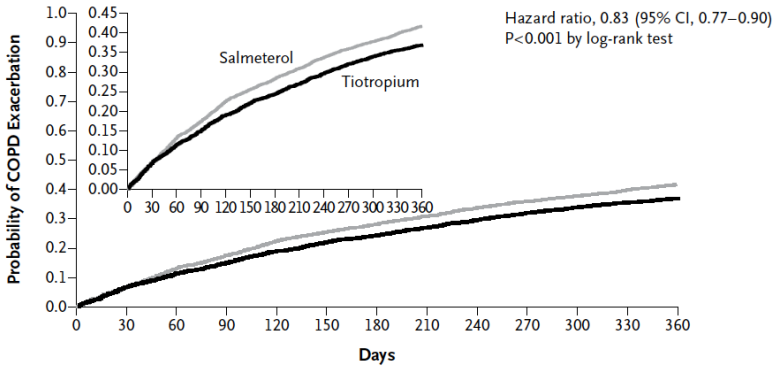
iDiS PEARL: Prompt Evidence Assessment and Review of the Literature

Long-acting bronchodilators in COPD: making the right choice

The clinical issue: Long-acting inhaled anti-cholinergics (such as tiotropium [Spiriva]) and beta-agonists (such as salmeterol [Serevent]) have both been shown to improve symptoms, enhance quality of life, and reduce exacerbations for patients with chronic obstructive pulmonary disease (COPD).[1] Treatment guidelines recommend that either drug class is appropriate for first-line maintenance therapy in patients with moderate to severe forms of the disease.[1] However, there has been scant data directly comparing these two therapeutic classes with each other.

The new evidence: The POET-COPD trial studied 7,376 patients with moderate to severe COPD and at least 1 exacerbation in the past year.[2] Almost half of the patients were current smokers and on average had been diagnosed 8 years earlier. Patients were randomized to **receive 18 µg tiotropium once daily or 50µg salmeterol twice daily an**d were followed up for 1 year. The trial found that **tiotropium reduced the likelihood of a COPD exacerbation by 17% compared to salmeterol** (see figure).



The probability of first exacerbation of COPD after randomization was reduced by 17% for patients treated with tiotropium compared with salmeterol. Reproduced with permission from Vogelmeier, Hederer, Glaab, et al. Tiotropium versus Salmeterol for the prevention of exacerbations of COPD. N Engl J Med 2011.

The risks of both moderate and severe exacerbations were reduced with tiotropium compared to the beta-agonist (by 14% and 28%, respectively; p<0.0001 for both). In addition, tiotropium-treated patients were significantly less likely to have exacerbations that required systemic steroids (23% less) or antibiotics (15% less). The benefit of tiotropium over salmeterol was equally large for patients with moderate and more severe COPD, and did not vary based on concomitant use of inhaled steroids. Rates of serious adverse events, adverse events leading to discontinuation, and fatal events were similar between the groups.

Limitations: The trial was relatively short (1 year), and there were fewer exacerbations than seen in other large trials of patients with COPD – an average of less than 1 exacerbation per year in either treatment group.

Bottom line: In patients with moderate to severe COPD who have previously had an exacerbation, the anticholinergic tiotropium (Spiriva) performed better in reducing the risk of COPD exacerbation than did the beta-agonist salmeterol (Serevent). These data support using tiotropium as the first-line long-acting bronchodilator for this patient subgroup. Tiotropium is administered once daily and may be easier for patients to use than twice-daily salmeterol. On the other hand, tiotropium is not sold in combination with an inhaled steroid, for those patients requiring one. These factors may be relevant when choosing treatments for some patients.

References: 1. Global Initiative for Chronic Obstructive Lung Disease. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: 2009 update. (http://www.goldcopd.com.) 2. Vogelmeier C, Hederer B, Glaab T et al. Tiotropium versus Salmeterol for the prevention of exacerbations of COPD. N Engl J Med 2011;364:1093.

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These are general recommendations only; specific clinical decisions should be made by the treating physician based on an individual patient's clinical condition.