IDIS Independent Drug Information Service

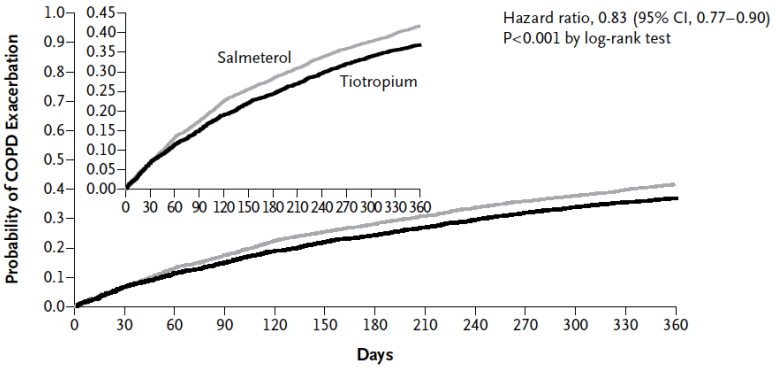
PEARL:
Prompt Evidence Assessment and Review of the Literature

Long-acting bronchodilators in COPD: Making the right choice

The clinical issue: Both long-acting inhaled anti-cholinergics (such as tiotropium) and beta-agonists (such as salmeterol) can improve symptoms, enhance quality of life, and reduce exacerbations for patients with chronic obstructive pulmonary disease (COPD).[1] Treatment guidelines recommend either drug class for first-line maintenance therapy in patients with moderate to severe COPD.[1] However, the data directly comparing these two therapeutic classes are extremely limited.

The new evidence: The POET-COPD trial studied 7,376 patients with moderate to severe COPD (corresponding to GOLD class II-IV disease) and at least 1 exacerbation in the past year.[2] Almost half of the patients were current smokers and, on average, they had been diagnosed with COPD 8 years ago. Patients were randomized to **receive tiotropium (Spiriva) 18 µg once daily or salmeterol (Serevent) 50µg 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).

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



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.

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 in either treatment group).

Bottom line: In patients with moderate to severe COPD who have previously had an exacerbation, tiotropium (Spiriva) reduced the risk of COPD exacerbation compared to 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 only available as an expensive brand-name medication and 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.

This material was produced by Niteesh K. Choudhry, M.D., Ph.D., Assistant Professor of Medicine, Harvard Medical School and Danielle Scheurer, M.D., M.Sc., F.H.M., Assistant Professor of Medicine, Medical University of South Carolina, for the Independent Drug Information Service (iDiS). Additional information on the management of COPD is provided in the IDIS monograph, “Helping patients with chronic obstructive pulmonary disease to breathe a little easier,” at www.RxFacts.org.

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

The Alosa Foundation

The Independent Drug Information Service (IDIS) is supported by the PACE Program of the Department of Aging of the Commonwealth of Pennsylvania, and the Washington D.C. Department of Health. Publication of the PEARL series is made possible by a grant from the Rx Foundation. This material is provided by The Alosa Foundation, a nonprofit education organization which is not affiliated in any way with any pharmaceutical company. © 2012 The Alosa Foundation.