

Inhaler Wars: Tiotropium versus Salmeterol for Chronic Obstructive Pulmonary Disease

Published Mar 23, 2011 - Written by Ishani Ganguli



COPD sufferers know the symptoms all too well: the phlegmy cough, gasping wheezy breaths, and chest tightness that signal an exacerbation. Guidelines recommend inhaled long-acting bronchodilators—either an anticholinergic or a β_2 -agonist—to mitigate symptoms and reduce the frequency of these exacerbations in patients with moderate to severe disease. Which one is more effective? Without large head-to-head trials, there has been no clear answer to this question. But a study published in this week's NEJM, sponsored by the makers of tiotropium, compared this anticholinergic to the β_2 -agonist

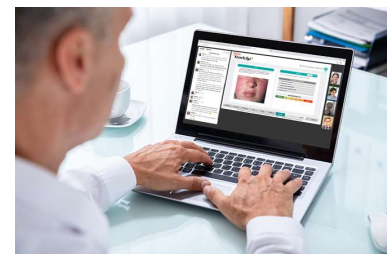
Rotation Prep

Topic overviews, links to high-yield reviews and research, procedure videos and 35 internal medicine and pediatrics specialties. Unlock content using your institution's subscription to NEJM Knowledge+.



[Browse Rotations »](#)

Remote Learning Resources for Residents and Students



NEJM Knowledge+

- Save time with adaptive learning
- Assess performance with detailed reports, custom and prepared quizzes



salmeterol and found that tiotropium may be more effective in preventing exacerbations.

In this randomized, parallel-group trial, German, Italian, and Dutch researchers assigned 7376 patients across 25 countries with moderate to severe COPD to receive either 18 µg of tiotropium once a day or 50 µg of salmeterol twice a day for a year. Compared to salmeterol, tiotropium delayed time to first exacerbation (187 vs 145 days in the first quartile of patients) and reduced the number of moderate and severe exacerbations that year (0.64 vs 0.72).

During the study, more than 50% of patients in both treatment groups continued to take inhaled glucocorticosteroids (ICS) for their COPD. In a post-hoc analysis, the authors found that the benefits of tiotropium held whether or not the patients were on concurrent ICS therapy. Those taking tiotropium were slightly less likely than those taking salmeterol to experience a serious adverse event such as pneumonia or an exacerbation (14.7% vs 16.5%).

In an accompanying editorial, Jadwiga Wedzicha of University College London comments on the researchers' choice of study outcome: "Large multicentre COPD studies are often difficult to perform and the focus on COPD exacerbations enabled the exacerbation data to be carefully collected and validated...This trial thus provides a good model for such future COPD trials that should be focused on a specific and relevant disease outcome."

The decision to prescribe an anticholinergic versus a beta-agonist remains nuanced, notes NEJM editor-in-chief Dr. Jeffrey Drazen. "[These results don't] necessarily mean that tiotropium becomes the drug of choice," he says. "But it means that for a physician

Integrated with NEJM
Resident 360

[Learn More »](#)

Listen to the Latest

Evaluation and Management of Febrile Neonates with Dr. Benard Dreyer



The Curbside Consults

podcast series takes a deep dive into key clinical topics with expert clinicians and educators.

[Listen Now »](#)

Other NEJM Journal Watch summaries are available!

Each week, we select new summaries covering topics relevant to residents.



Sympto

POWERED BY

medstro[®]
activating communities

Steroids

in Asthma

treating a patient with COPD, they are essentially therapeutically equivalent; the combination of cost, availability and side effects will dictate which is the right drug for a given patient.”

What factors besides efficacy do you consider most often in prescribing medication for your COPD patients? Will this study change your therapeutic approach for those patients?

[Read Summary »](#)

[^ Back to Top](#)

[About](#)

[Contact Us](#)

[Help & FAQs](#)

 [Facebook](#)

 [Twitter](#)

 [LinkedIn](#)

[Terms of Use](#)

[Privacy Policy](#)



NEJM Resident 360 is a product of NEJM Group, a division of the Massachusetts Medical Society. Copyright ©2020 Massachusetts Medical Society. All rights reserved.

