

Study Suggests Alternate Asthma Therapy

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Tiotropium bromide effective when added to low-dose inhaled corticosteroids

DENVER — A drug commonly used for the treatment of chronic obstructive pulmonary disease (COPD) successfully treats adults whose asthma is not well-controlled on low doses of inhaled corticosteroids, according to researchers at National Jewish Health and other institutions supported by the National Heart, Lung, and Blood Institute (NHLBI).

"This study's results show that tiotropium bromide might provide an alternative to other asthma treatments, expanding options available to patients for controlling their asthma," said NHLBI Acting Director Susan B. Shurin, M.D. "The goal in managing asthma is to prevent symptoms so patients can pursue activities to the fullest."

New England Journal of Medicine and presented at the Annual Congress of the European Respiratory Society in Barcelona, Spain.

Increasing inhaled corticosteroids or supplementing them with long-acting beta agonists like salmeterol are the two preferred treatment options available for adults whose asthma is poorly controlled on low doses of inhaled corticosteroids. However, higher doses of corticosteroids do not improve symptoms for all patients and can have significant side effects, while long-acting beta agonists have come under scrutiny for their risk of worsening asthma symptoms that could result in hospitalization and, rarely, death.

This is a very important step forward, said Richard Martin, MD, principal investigator for the study at National Jewish Health. Now we have another option, using tiotropium, which works differently than long-acting beta-agonists to relax smooth muscle in the airways. It may in the long run be a safer option, but that will need to be determined in future trials.

Conducted by the NHLBI's Asthma Clinical Research Network, the study compared three treatment methods: doubling the dose of inhaled corticosteroids alone, supplementing a low dose of inhaled corticosteroids with a long-acting beta agonist (salmeterol), and supplementing a low dose of inhaled corticosteroids with a long-acting anticholinergic drug (tiotropium bromide). Anticholinergics block a part of the autonomic nervous system that can cause airway muscles to contract. The study followed 210 adults whose asthma was not well-controlled on low doses of inhaled corticosteroids alone. Participants received each treatment for 14 weeks with two-week breaks in between, for a total of 48 weeks.

Tiotropium bromide was shown to be effective using several asthma control measurements, including patients' day-to-day lung function as well as the number of days in which they had no asthma symptoms and did not need to use their albuterol rescue inhalers. When patients began the trial, their average number of such "asthma control days" was 77 per year (extrapolated from the treatment period). Doubling corticosteroids gave patients another 19 symptom-free days on average, while adding tiotropium to low-dose corticosteroids gave them another 48.

"Much research over the last century has explored the role of cholinergic mechanisms [which constrict the airways] and anticholinergic therapies in asthma. However, this is the first study to explore adding an anticholinergic inhaler to low-dose inhaled corticosteroids," said James Kiley, Ph.D., director of the NHLBI's Division of Lung Diseases. "The Asthma Clinical Research Network is designed to address exactly these kinds of practical and important management questions, with the ultimate goal of helping asthma patients."

The NHLBI established the Asthma Clinical Research Network in 1993 to conduct multiple, well-designed clinical trials for rapid evaluation of new and existing therapeutic approaches to asthma and to disseminate laboratory and clinical findings to the healthcare community. The clinical centers are: Brigham and Women's Hospital, Boston; Columbia University, New York City; Duke University, Durham, N.C.; Galveston University of Texas Medical Branch, Galveston; National Jewish Health, Denver; University of California, San Diego; University of California, San Francisco; University of Wisconsin-Madison; Washington University School of Medicine, St. Louis; and Wake Forest University. The data coordinating center is at Penn State College of Medicine in Hershey.

More information about the trial—Tiotropium Bromide as an Alternative to Increased Inhaled Corticosteroid in Patients Inadequately Controlled on a Lower Dose of Inhaled Corticosteroid, or TALC (NCT00565266)—can be found at www.clinicaltrials.gov.

National Jewish Health is known worldwide for treatment of patients with respiratory, cardiac, immune and related disorders, and for groundbreaking medical research. Founded in 1899 as a nonprofit hospital, National Jewish remains the only facility in the world dedicated exclusively to these disorders. Since 1998, *U.S. News & World Report* has ranked National Jewish the #1 respiratory hospital in the nation.

Resources

- What is asthma? http://www.nhlbi.nih.gov/health/dci/Diseases/Asthma/Asthma_WhatIs.html
- Asthma clinical practice guidelines: <http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>
- Asthma Clinical Research Network (ACRN): <http://www.acrn.org/>
- What is COPD? http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd_WhatIs.html

National Jewish Health is the leading respiratory hospital in the nation. Founded 125 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of children and adults with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the [media resources](#) page.

Media Resources

We have many faculty members, from bench scientists to clinicians, who can speak on almost any aspect of respiratory, immune, cardiac and gastrointestinal disease as well as lung cancer and basic immunology.

- [Accomplishments & Awards](#)
- [Annual Report](#)
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Media Contacts

Our team is available to arrange interviews, discuss events and story ideas.

Adam Dormuth

[303.398.1002](tel:303.398.1002) office
[970.222.5034](tel:970.222.5034) mobile
dormutha@njhealth.org

Jessica Berry

[303.398.1082](tel:303.398.1082) office
[303.807.9491](tel:303.807.9491) mobile
berryl@njhealth.org