

Bronchodilators appear associated with increased risk of cardiovascular events

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A study of older patients with chronic obstructive pulmonary disease (COPD) suggests that new use of the long-acting bronchodilators β -agonists and anticholinergics was associated with similar increased risks of cardiovascular events, according to a study published Online First by *JAMA Internal Medicine*.

COPD affects more than 1 in 4 Americans older than 35 years of age and is the third leading cause of death in the United States. Medications are a mainstay of management of the disease. While there is little controversy about the effectiveness of long-acting β -agonists (LABAs) and long-acting anticholinergics (LAAs), their cardiovascular safety remains a matter of debate, according to the study background.

Andrea Gershon, M.D., M.S., of the Institute for Clinical Evaluative Sciences, Ontario, Canada, and colleagues conducted a nested case control analysis of a [retrospective cohort study](#) and compared the risk of cardiovascular events between patients newly prescribed the inhaled long-acting medications.

The study used health care databases from Ontario and included all individuals 66 years or older with a diagnosis of COPD who were treated from September 2003 through March 2009.

Of 191,005 eligible patients, 53,532 (28 percent) had a hospitalization or an emergency department visit for a cardiovascular event. According to the results, newly prescribed long-acting inhaled bronchodilators β -agonists and anticholinergics were associated with higher risk of a cardiovascular event compared with nonuse of those medications (respective adjusted odds ratios, 1.31 and 1.14). The results also indicate there was no significant difference in events between the two medications.

"Among older individuals with COPD, new use of

long-acting β -agonists and anticholinergics is associated with similar increased risks of [cardiovascular events](#). Close monitoring of COPD patients requiring long-acting bronchodilators is needed regardless of drug class," the study concludes.

In an invited commentary, Prescott G. Woodruff, M.D., M.P.H., of the University of California, San Francisco, writes: "No pharmacotherapy has been shown to meaningfully alter the rate of progression of [chronic obstructive pulmonary disease](#) (COPD). However, inhaled long-acting bronchodilators are mainstays of treatment in moderate to severe COPD because they improve lung function, dyspnea [shortness of breath], rate of exacerbations and quality of life."

"Ultimately, clinical trial data do not fully resolve the question of cardiovascular risks with LAMAs [muscarinic antagonists termed long-acting anticholinergics by Gershon et al] and LABAs [long-acting inhaled β -[agonists](#)] because some of the data are discordant and because clinical trials generally exclude patients at greatest risk for cardiovascular complications," Woodruff continues.

"In conclusion, no single study will satisfactorily resolve the controversy, and at least three important questions cannot be addressed by this study. ... Finally, although the authors recommend that 'subjects should be monitored closely,' a firm recommendation on what that monitoring should be cannot be made. Monitoring, of course, is the responsibility of an informed treating physician. The main contribution of this study is to highlight that responsibility," Woodruff concludes.

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