

# COPD is independent risk factor for cardiovascular death, but not risk of stroke

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Chronic obstructive pulmonary disease, or COPD, is associated with increased risk of dying from a cardiovascular disease such as heart failure or a heart attack, as well as diseases not associated with the heart. However, COPD is not by itself associated with increased likelihood of having a stroke or a systemic embolism, according to a new research study.

Researchers from Duke University and the Mayo Clinic reached this conclusion after analyzing data from a large randomized trial of patients with [atrial fibrillation](#), a condition that produces an [irregular heartbeat](#). The trial, ARISTOTLE (Apixaban for Reduction in Stroke and Other Thromboembolic Events in Atrial Fibrillation), compared the effectiveness of two anticoagulants—apixaban and warfarin—on reducing the risk of stroke or [systemic embolism](#) in these patients. A systemic embolism occurs when a clot formed in the heart travels to another part of the body and blocks blood flow; typically, this blockage occurs in the brain, causing a stroke, but systemic emboli can also travel to other organs or a person's extremities.

The researchers examined the data from the 18,206 patients, all with atrial fibrillation, enrolled in ARISTOTLE to explore the connection between COPD and stroke in this patient population. The researchers will present their data during ATS 2015 in Denver, May 15 to 20.

"Other studies have shown that COPD is an independent risk factor for [cardiovascular disease](#), but what hadn't been studied was whether COPD was an [independent risk factor](#) for stroke, specifically among patients with atrial fibrillation," said Michael Durheim, MD, a pulmonary and critical care fellow at Duke. Atrial fibrillation is itself a known risk factor for stroke and systemic embolism because clots more easily form when blood is pumped irregularly by the heart.

In their analysis, Dr. Durheim and his colleagues found that COPD was present in 1,950 (10.8%) of the 18,134 patients for whom pulmonary disease history was available. Patients with COPD were older, more often men and more likely to be current or former smokers. They were also more likely to suffer from other diseases that would put them at higher risk for stroke, including coronary artery disease, a prior [heart attack](#) and heart failure.

After adjusting for these and other patient characteristics, COPD was not associated with increased risk of stroke or systemic embolism (adjusted HR 0.86 [95% CI 0.61, 1.21],  $p = 0.382$ ). However, COPD was associated with increased mortality from all causes by 54 percent (adjusted HR 1.54 [95% CI 1.31, 1.82],  $p$

Dr. Durheim says that because COPD independently raises mortality in patients with atrial fibrillation, further studies are warranted to "elucidate the mechanisms" by which COPD contributes to increased mortality. The results of those studies, he adds, might change clinical practice.

Meanwhile, he notes one practical outcome of his study: the effect of apixaban compared with warfarin on [stroke](#) or systemic embolism did not differ between subjects with and without COPD (HR 0.92 vs 0.78, interaction  $p = 0.617$ ). "The presence of COPD doesn't need to affect provider's choice of an anticoagulant," he says.

**More information:** Abstract 65465: Chronic Obstructive Pulmonary Disease is Associated with Increased Risk of Mortality Among Patients with Atrial Fibrillation: Insights from the ARISTOTLE Trial

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