

# Atrial fibrillation patients on digoxin face increased risk of death

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Patients taking digoxin to control atrial fibrillation face a 27 percent greater risk of dying than atrial fibrillation patients who are not taking digoxin, according to an analysis of 19 studies involving more than 500,000 patients scheduled for presentation at the American College of Cardiology's 64th Annual Scientific Session in San Diego.

"The association we found based on the results of 19 studies was very strong," said Waqas Qureshi, M.D., a clinical and research fellow of cardiology at Wake Forest School of Medicine and the study's lead author. "Until further research can be done, I would suggest physicians use caution when prescribing [digoxin](#) for [patients](#) with [atrial fibrillation](#), especially given that there are alternative drugs available that might be safer."

Patients with both atrial fibrillation and kidney failure appear to face an especially high risk—a 60 to 70 percent increase in mortality compared to similar patients not taking digoxin.

Roughly 1 in 5 people with atrial fibrillation—the most common type of abnormal heart rhythm—are prescribed digoxin. An estimated 5.6 million U.S. adults have atrial fibrillation.

Digoxin helps to regulate heart rhythms, which can become chaotic in patients with atrial fibrillation. Current medical guidelines recommend digoxin as a first-line or primary drug for atrial fibrillation in patients who are not physically active and as a second-line or alternative drug for

patients who are more active.

Qureshi said this study calls current clinical guidelines into question.

"Based on consistent results coming out of many studies, our results suggest digoxin should be downgraded from its position as a front-line agent for certain patients with atrial fibrillation," Qureshi said.

The researchers accessed seven major research databases to identify studies that tracked mortality rates and involved atrial fibrillation patients taking digoxin. The search yielded 19 relevant studies published from 1960-2014 that together involved more than 500,000 patients. The researchers pooled the data reported in the 19 studies and analyzed them as one large data set. Overall, 458,311 out of 501,681 patients had atrial fibrillation. Digoxin was prescribed for 111,978 of these patients.

The results showed patients with atrial fibrillation who were taking digoxin were 27 percent more likely to die overall and 21 percent more likely to die from a cardiovascular cause than atrial fibrillation patients who were not taking digoxin.

Digoxin is also used to treat heart failure. The analysis showed a weaker association between digoxin and death in atrial fibrillation patients who also had heart failure, a finding that warrants further investigation, Qureshi said.

Several studies included in the analysis suggest the higher the level of digoxin in a person's blood, the higher their risk of dying. Researchers do not know exactly how digoxin might increase the risk of death, though previous studies have linked digoxin with an increased risk of thromboembolism, a serious condition in which a blood clot lodges in a vessel, depriving tissues of blood.

Alternative drugs used to treat atrial fibrillation include beta-blockers, calcium-channel blockers and anti-arrhythmic medications. Procedures such as electrical therapies or surgical procedures like catheter ablation are also helpful in some patients.

Digoxin is used most frequently in sicker patients and those with multiple health conditions. Although this meta-analysis accounted for risk factors and co-occurring health conditions that were reported in the included studies, it is possible that some confounding factors were not accounted for because the researchers were limited to the data available from existing studies and did not collect any new data.

"The study points to the need for a well-structured, targeted trial to investigate digoxin's safety," Qureshi said.

To date, he said there has been no clinical trial conducted specifically to examine the drug's safety for treating atrial fibrillation.

The study, "Digoxin Use in Atrial Fibrillation is Associated with Increased Risk of Mortality: A Systematic Review and Meta-Analysis of More than 200,000 Patients," will be presented on March 15 at the American College of Cardiology's 64th Annual Scientific Session in San Diego.

**More information:** Qureshi will present the study, "Digoxin Use in Atrial Fibrillation is Associated with Increased Risk of Mortality: A Systematic Review and Meta-Analysis of More than 200,000 Patients," on Sunday, March 15 at 8 a.m. PT/11 a.m. ET/3 p.m. UTC in Room 1B.

Provided by American College of Cardiology

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