

Atrial fibrillation associated with higher death risk in motor vehicle accident victims

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A study in nearly three million motor vehicle accident victims has found that atrial fibrillation is associated with a higher risk of death. The research was presented today at CARDIOSTIM - EHRA EUROPACE 2016 by Dr Abhishek Deshmukh, a cardiologist at the Mayo Clinic in Rochester, Minnesota, US.

"Atrial fibrillation is the most common heart rhythm disorder and incidence is rising," said Dr Deshmukh. "Many of these patients are on anticoagulants to lower their [stroke risk](#) but these drugs increase the chance of bleeding."

He continued: "There is limited information about the impact of atrial fibrillation on [daily activities](#) such as driving. This is the first study to investigate the effect of atrial fibrillation on death and length of [hospital stay](#) after a motor [vehicle accident](#)."

The study used the Nationwide Inpatient Sample, the largest hospitalisation database in the US. It contains information on around 20% of hospitalisations in the country and can be used to calculate national estimates. The study included nearly 2 980 000 drivers, passengers and bystanders admitted to hospital due to a motor vehicle accident between 2003 and 2012. Of these, 79 687 (2.6%) had atrial fibrillation.

The investigators compared the chance of dying in hospital, length of hospital stay, chance of blood transfusion, and cost of hospitalisation

between patients with and without atrial fibrillation.

Death in hospital occurred in 2.6% of those who had been in a motor vehicle accident and did not have atrial fibrillation, and 7.6% of patients who had been in a motor vehicle accident and had atrial fibrillation.

When the investigators looked at the mortality data for those who had been in a motor vehicle accident, they found that patients with atrial fibrillation had a 1.5 times higher chance of dying in hospital than those without atrial fibrillation, after adjusting for age, gender, comorbidities, and injury severity scores.

Dr Deshmukh said: "Atrial fibrillation is associated with higher mortality, length of stay and cost when patients are hospitalised for bypass surgery, hip replacement, or heart failure. Our research shows that atrial fibrillation is also associated with worse outcomes in patients involved in motor vehicle accidents."

The average length of hospital stay after a motor vehicle accident was nine days in those with atrial fibrillation and six days in those without. The average cost of hospital stay after a motor vehicle accident was \$19 615 in those without atrial fibrillation, rising to \$28 217 when patients also had atrial fibrillation.

After adjusting for factors that could influence the associations, the investigators found that atrial fibrillation was independently associated with a mean 2.4 day longer length of hospital stay and a mean \$7 406 greater cost of hospitalisation after a [motor vehicle](#) accident.

The researchers also looked at the atrial fibrillation patients who had been hospitalised due to a [motor vehicle accident](#) according to their CHADS2 score, which is a measure of stroke risk that gives points to comorbidities such as heart failure, hypertension and diabetes. Patients

with a score of 2 or more comorbidities had a higher chance of dying in hospital, bleeding, or requiring a blood transfusion.

Dr Deshmukh said: "We don't know which patients with atrial fibrillation were taking anticoagulants because this information was not in the database. It is likely that patients with a CHADS2 score of 2 or more are taking this medication. If they get into a car wreck then these drugs could have an impact, particularly the new anticoagulants that don't have a well tested reversal agent."

He concluded: "We should not jump the gun and advise patients with [atrial fibrillation](#) to stop driving. This was a retrospective observational study and needs to be confirmed by further research. Only then will we be in a position to give practical advice to [patients](#) with a higher risk."

Provided by European Society of Cardiology

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