

Impact of AF on stroke risk eliminated with multiple risk factors

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Patients with five or more risk factors have the same stroke risk as patients with atrial fibrillation, according to research presented at the ESC Congress today by Dr. Christine Benn Christiansen from Denmark. The study included data on more than 4 million patients from Danish registries over a 10 year period.

Dr Benn Christiansen said: "We know that atrial fibrillation increases the risk of ischemic stroke. And in patients with atrial fibrillation or previous [ischemic stroke](#), the risk of stroke increases with the number of risk factors. But until now, little attention has been paid to the association between stroke risk and risk factors in patients without prior stroke or atrial fibrillation. We wanted to explore that association and to quantify if stroke risk was of comparable size in patients with numerous risk factors."

The study included 4,198,119 people aged 18 to 90 years with no history of stroke from nationwide Danish registries during 2000 to 2010. Of these, 161,651 (3.85%) had atrial fibrillation. The investigators compared the risk of stroke in patients with and without atrial fibrillation according to the number of risk factors.

The risk factors included in the study were [myocardial infarction](#), [peripheral artery disease](#), arterial embolism, [excessive alcohol consumption](#), heart failure, carotid stenosis, retinal occlusion, chronic [systemic inflammation](#), [chronic kidney disease](#), venous thromboembolism, epilepsy, migraine, diabetes mellitus, hypertension and age >75 years.

The rate of stroke was calculated per 100 person-years (see figure). Patients with 0 risk factors and no atrial fibrillation had a stroke rate of 0.32 (95% confidence interval [CI] 0.31-0.32) per 100 person-years vs. 2.55 (CI=2.47-2.64) in patients with atrial fibrillation. With 1-2 risk factors present the stroke rate was 1.77 (CI=1.76-1.78) (no atrial fibrillation)

and 5.69 (CI=5.61-5.78) (with atrial fibrillation).

For patients with 3-4 risk factors the stroke rates were 4.88 (CI=4.80-4.96) without atrial fibrillation vs. 6.96 (CI=6.79-7.14) with atrial fibrillation. In the presence of 5 or more risk factors stroke rates were 7.27 (CI=6.82-7.74) without atrial fibrillation vs. 8.00 (CI=7.34-8.71) with atrial fibrillation.

Dr Benn Christiansen said: "These results indicate that in patients with three or more risk factors, the risk of stroke is high regardless of the presence of atrial fibrillation. In fact, with five or more risk factors such as diabetes, hypertension, myocardial infarction, heart failure and age above 75 years, the risk associated with atrial fibrillation is eliminated."

She continued: "Our findings suggest that patients without atrial fibrillation or prior stroke may have a [stroke risk](#) that is comparable to patients with atrial fibrillation if they have three or more risk factors."

Dr Benn Christiansen concluded: "More research is needed on the effect of multiple risk factors on the risk of stroke in patients without [atrial fibrillation](#). Stroke prevention measures may need to be tailored according to the number of risk factors."

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