

# Four out of ten patients with atrial fibrillation have unknown brain damage

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Four out of ten patients with atrial fibrillation but no history of stroke or transient ischaemic attack have previously unknown brain damage, according to the first results of the Swiss Atrial Fibrillation Cohort Study (Swiss-AF) presented today at ESC Congress 2018.

"Our results suggest that clinically unrecognised [brain damage](#) may explain the association between dementia and atrial fibrillation in [patients](#) without prior [stroke](#)," said Co-Principal Investigator Professor David Conen of McMaster University, Hamilton, Canada.

Patients with atrial fibrillation have a significantly increased risk of stroke, which is why most are treated with blood thinners (oral anticoagulation). This increased stroke risk is probably the main reason why patients with atrial fibrillation also face an increased risk of cognitive dysfunction and dementia. However, the relationship between atrial fibrillation and dementia has also been shown among patients without prior strokes, meaning that additional mechanisms have to be involved.

Clarifying the mechanisms by which atrial fibrillation increases the risk of cognitive dysfunction and dementia is a first step towards developing preventive measures.

Swiss-AF is a prospective, observational study designed to pinpoint the mechanisms of cognitive decline in patients with atrial fibrillation. This analysis investigated the prevalence of silent [brain damage](#) in atrial

fibrillation patients.

The study enrolled 2,415 patients aged over 65 years with atrial fibrillation between 2014 and 2017 from 14 centres in Switzerland. All patients without contraindications underwent standardised brain magnetic resonance imaging and the images were analysed in a central core laboratory. Scans were available in 1,736 patients. Of those, 347 (20%) patients had a history of stroke and/or transient ischaemic attack and were excluded from the analysis.

The final analysis included 1,389 patients with atrial fibrillation but no history of stroke or transient ischaemic attack. The average age of participants was 72 years, and 26% were women. The scans showed that 569 (41%) patients had at least one type of previously unknown brain damage: 207 (15%) had a cerebral infarct, 269 (19%) had small bleeds in the brain (microbleeds), and 222 (16%) had small deep brain lesions called lacunes.

"Four in ten patients with atrial fibrillation but no history of stroke or transient ischaemic attack had clinically unrecognised 'silent' brain lesions," said Professor Conen. "This brain damage could trigger cognitive decline."

Most study participants (1,234; 89%) were treated with oral anticoagulants. Co-Principal investigator Professor Stefan Osswald of University Hospital Basel, Switzerland, noted that the cross-sectional analysis looked at the data at a single point in time and cannot address the question of whether the cerebral infarcts and other brain lesions occurred before or after initiation of oral anticoagulation. But he said: "The findings nevertheless raise the issue that oral anticoagulation might not prevent all brain damage in patients with atrial [fibrillation](#)."

Professor Conen said: "All Swiss-AF participants underwent extensive

cognitive testing. These data will be analysed to see whether patients with silent brain lesions also have impaired cognitive function." Collaborations with other study groups will help to sort out whether these findings are specific to patients with [atrial fibrillation](#).

**More information:** Abstract: "Prevalence of silent vascular brain lesions among patients with atrial fibrillation and no known history of stroke"

Provided by European Society of Cardiology

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