

Permanent AF doubles risk of stroke compared to paroxysmal AF

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Permanent atrial fibrillation (AF) doubles the risk of stroke compared to paroxysmal AF, according to research in more than 6 000 patients presented at ESC Congress today by Dr Thomas Vanassche from Belgium. The findings suggest that a simple clinical assessment of the type of AF can help doctors to better estimate stroke risk.

Ischaemic stroke is the second cause of death in the EU, accounting for over a million deaths and many more disabled patients each year. Annual direct health care costs amount to more than €20 billion. AF is a frequent rhythm disorder and an important risk factor for stroke (1). The presentation of AF can vary from short and often self-limiting episodes of arrhythmia in people with otherwise normal heart rhythm, called paroxysmal AF, to a continuously abnormal rhythm called permanent AF (2).

Dr Vanassche said: "Our study shows that the risk of stroke is higher in patients in whom the arrhythmia is present permanently, compared to patients who only have short episodes of arrhythmia, even when correcting for other [stroke risk](#) factors. Although it may seem intuitive that the continuous presence of AF carries a higher stroke risk than short, intermittent episodes, this has been an area of controversy."

He added: "Although some recent trials have reported higher stroke rates in patients with permanent compared with paroxysmal AF, other studies did not report a significant difference. Current guidelines recommend that the pattern of AF should not be taken into account when assessing

the stroke risk in patients with AF, suggesting that, when it comes to stroke risk, 'any AF is AF'."

To address this question, the researchers pooled data from two previously conducted clinical trials, ACTIVE-A and AVERROES, for a combined sample size of more than 6 000 patients with AF. Besides the large number of patients, another important strength of the analysis was that none of the patients were treated with anticoagulant medication, which reduces the risk of stroke. In contrast to population studies, where it can be difficult to detect and verify all strokes, all events in the trial were rigorously detected and adjudicated.

The researchers found that patients with permanent AF had an almost twofold higher risk of stroke compared to patients with paroxysmal AF, with a yearly rate of 4.2% compared to 2.1%.

Dr Vanassche said: "Other studies have shown that patients with permanent AF are often younger and at a lower risk of stroke compared to those with permanent AF, and these findings were confirmed in our analysis. Nevertheless, the difference in risk of stroke remained significant when correcting for other risk factors such as age, heart failure, diabetes, sex, prior stroke, hypertension, and peripheral artery disease."

He added: "The higher risk of permanent versus paroxysmal AF was also seen when considering patients with low, intermediate, or high risk of stroke separately."

Dr Vanassche continued: "It is very important to acknowledge that regardless of its form and presentation, AF increased the risk of [stroke](#). Therefore, all [patients](#) with AF should be assessed for risk, and if the risk is sufficiently high, they should be treated with anticoagulants. Thus, our results strengthen the existing recommendations."

He concluded: "On the other hand, these results do provide support for the intuitive notion that 'a lot of AF' carries more risk than 'a little AF'. In cases where there is doubt about whether a patient would benefit from anticoagulant therapy, the presentation of AF could be one of the additional factors to take into account."

More information: (1) In a normal heart, each heartbeat is the result of an electrical signal generated in the sinus node, the heart's natural pacemaker. This signal spreads through the heart in a coordinated way causing a synchronized contraction of the atria, which pump the blood into the heart ventricles. A fraction of a second later, the electrical signal reaches the ventricles and pumps the blood from the heart through the body. Atrial fibrillation (AF) is the condition when the normal electrical activity of the heart atria is replaced by a chaotic electrical signal. The resulting very rapid, irregular and uncoordinated contractions prevent any effective pump function of the atria. The loss of coordinated pump function, together with changes in the atrial wall, promotes the formation of blood clots in the heart. When these clots shoot off and block arteries in the brain, they can cause a stroke.

(2) AF can present in different ways. One of the most obvious classifications can be made based on the simple observation of whether the arrhythmia is present continuously or intermittently. Many patients with AF have a normal heart rhythm for most of the time, but present with short, self-limiting episodes of arrhythmia. This intermittent pattern of AF is known as paroxysmal AF. In contrast, other patients never return to a normal heart rhythm, and the electrical and mechanical function of the atria is permanently disturbed. Rather than two different diseases, paroxysmal and permanent AF are thought of as different stages of the same underlying process that causes continuing and progressive damage to the atria. As the destruction of normal atrial tissue advances, the arrhythmia progresses from short episodes over longer episodes to, finally, a permanent state of arrhythmia.

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