Asymptomatic atrial fibrillation and stroke risk

Naseer Ahmad,[1] Ayeesha Kamran Kamal[2]

Asymptomatic Atrial Fibrillation: Why Should You Be Concerned?

Atrial fibrillation (AF),is a well-established risk factor for thromboembolic events. Typical symptomatic presentation might include palpitations, dyspnoea, and fatigue. However, AF may be asymptomatic, and thus subclinical, causing no alarm to doctor or patient. Even in patients with documented symptomatic AF, asymptomatic recurrences are common.

The first evidence of asymptomatic AF may be devastating: In the seminal Framingham study, among patients with stroke associated with AF, stroke was the first symptom of AF in 24%. Paroxysmal atrial fibrillation (PAF), as opposed to permanent AF, is transient, infrequent, and often asymptomatic.In fact, up to 90% of PAF episodes may be asymptomatic. This leads to delay in diagnosis.

Most cardiologists would agree that PAF poses significant cardioembolic stroke risk meriting treatment. This begs the question, if diagnosis is delayed due to the asymptomatic nature of the disease, what can be done to diagnose this disease earlier? Additionally, are there precursor states to any form of AF that might also be key to early diagnosis and treatment?

Who were the participants ?

ASSERT was a randomized trial, conducted by the Population Health Research Institute (McMaster University, Hamilton, ON, Canada).Patients were eligible for inclusion in the study if they were 65 years of age or older, had a history of hypertension requiring medical therapy, and, in whom a pacemaker or defibrillator had recently been implanted. Patients were excluded if they had any history of atrial fibrillation or atrial flutter lasting more than 5 minutes or if they required treatment with a vitamin K antagonist for any reason.They enrolled 2580 patients and monitored the patients for 3 months to detect subclinical atrial tachyarrhythmias (episodes of atrial rate >190 beats per minute for more than 6 minutes) and followed them for a mean of 2.5 years for the primary outcome of ischaemic stroke or systemic embolism.

What were the outcomes?

By 3 months, subclinical atrial tachyarrhythmias detected by implanted devices had occurred in 261 patients (10.1%). Subclinical atrial tachyarrhythmias were associated with an increased risk of clinical atrial fibrillation ($p<0.001$) and of ischaemic stroke or systemic embolism ($p=0.007$). Of 51 patients who had a primary outcome event, 11 had had subclinical atrial tachyarrhythmias detected by 3 months, and none had had clinical atrial fibrillation by 3 months. The population attributable risk of stroke or systemic embolism associated with subclinical atrial tachyarrhythmias was 13%.

What were the conclusions?

This trial confirmed that subclinical atrial tachyarrhythmias, without clinical atrial fibrillation, occurred frequently in patients with pacemakers and were associated with a significantly increased risk of ischaemic stroke or systemic embolism.

How is this relevant?

The risk of stroke has increased by 100% in low and middle income countries over the last decade and the developing world accounts for 85.5% of mortality due to all stroke deaths worldwide. Patients who suffer from stroke in countries such as Pakistan are almost a decade younger than their Western counterparts and thus, the disability in stroke survivors and resulting economic losses may be greater. In 25% strokes there is no clear cause, and a proportion of these events are likely to be due to asymptomatic AF.

It is crucial to determine strategies to identify and treat this vulnerable population. This study highlights the need to look carefully for atrial fibrillation in strokes of embolic origin and no clear cause. Atrial tachycardia runs may be a precursor to atrial fibrillation in these patients.

Recommended Reading

1. Healey JS, Connolly SJ, Gold MR, Israel CW, Van Gelder IC, Capucci A, Lau CP, Fain E, Yang S, Bailleul C, Morillo CA, Carlson M, Themeles E, Kaufman ES, Hohnloser SH; ASSERT Investigators. Subclinical atrial fibrillation and the risk of stroke. N Engl J Med 2012; 366: 120-9. doi:10.1056/NEJMoa1105575.

[1]Cerebrovascular Fellow, [2]Stroke Service, Aga Khan University, Karachi, Pakistan.

Correspondence: Ayeesha Kamran Kamal. Email: ayeesha.kamal@aku.edu