

# Pacemakers identify atrial fibrillation and enable initiation of stroke prevention

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Pacemakers identify atrial fibrillation and enable initiation of anticoagulation to prevent strokes, according to research presented today at Acute Cardiovascular Care 2015 by Dr. Nathan Denham, a cardiologist at Warrington Hospital, UK.

"Atrial fibrillation (AF) is the most common heart rhythm disorder and affects 1.5-2% of people in the developed world," said Dr Denham. "AF increases the risk of stroke by five-fold. In addition, people who have strokes due to AF are more likely to die or be disabled as a result of their stroke."

He continued: "The risk of stroke in [patients](#) with AF can be reduced by around two-thirds with medications that thin the blood, called anticoagulants. But around a third of patients with AF have no symptoms and do not know they have AF and are at increased stroke risk."

Pacemakers can detect asymptomatic AF but are not routinely monitored for this purpose. The current study investigated whether pacemaker checks could be used to identify patients with asymptomatic AF who could then be given anticoagulation for stroke prevention.

The study retrospectively included 223 patients who received a pacemaker during a 5 year period and had not been diagnosed with AF prior to implantation. During follow up clinics a wand was placed over the pacemaker to collect information on battery life, and so on. The researchers examined the data on how many patents were currently

experiencing AF, and how many people had episodes of AF but then returned to a normal heart rhythm (called sinus rhythm).

In patients found to have AF, the investigators calculated their stroke risk using the CHA2DS2-VASc score to see how many should be receiving anticoagulation to prevent stroke. The score gives points to the most common [stroke risk](#) factors (congestive heart failure, left ventricular dysfunction, hypertension, age, diabetes, stroke, vascular disease, female gender). ESC guidelines recommend that patients with AF and a score of 2 or more should be given oral anticoagulation to prevent stroke.<sup>2</sup>

During the follow up period, 36 patients had at least one episode of AF detected, of whom 27 had AF identified during a routine pacemaker check (12% of the study population). Just one-third of the 27 patients had received a pacemaker for sick sinus syndrome, which is known to be associated with AF, while two-thirds had atrioventricular node block. All but one of the 27 patients needed anticoagulation to prevent stroke based on their CHA2DS2-VASc score.

Dr Denham said: "The proportion of pacemaker patients with undiagnosed AF was higher than expected. Nearly all of them should have been receiving anticoagulation to prevent stroke. Pacemaker checks are simple to perform and our study shows that it is worthwhile using them to identify patients at risk."

The average time between pacemaker checks and AF diagnosis was 6 months. Just over one-third of patients waited 12 months between checks to discover they had AF. Dr Denham said: "Stable patients have pacemaker checks every 12 months but our results support more frequent monitoring to identify AF. Otherwise patients are at increased [stroke](#) risk and are left unprotected."

Remote telemonitoring would allow pacemaker checks to be done more often without patients having to travel to hospital. Patients would require a computer that collects information from their pacemaker using wireless technology. The data would then be transmitted to a hospital computer.

"Telemonitoring would identify AF much earlier so that anticoagulation could be started," said Dr Denham. "The fact that we found such a high proportion of patients with AF who should have been on anticoagulation suggests that telemonitoring is worth pursuing. Although we can't conclude this from our study, the cost of telemonitoring may be offset by the savings from preventing strokes."

He concluded: "One-third of people with AF don't know they have it so we need to use all of the tools available to recognise it. Our study suggests that pacemaker checks are a good way to identify new cases of AF so that [anticoagulation](#) can be started to prevent strokes."

### **More information:** References

1. Dr Marta Bavolarova will present the abstract 'Reversal of various reflex syncope in patients by voluntary sniffs or gasps' during: Poster Session 2: Syncope on 17 October at 13:30 to 18:00 CEST
2. Guidelines for the diagnosis and management of syncope (version 2009). *European Heart Journal*. 2009;30:2631-2671. [DOI: 10.1093/eurheartj/ehp298](#)

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