Diagnosis of Subclinical AF

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By Payal Kohli, MD [1]

Implantable cardiac monitoring devices now detect "silent" AF. But now that we "hear" it, what should we do?

The increasing prevalence of atrial fibrillation (AF) in the United States and worldwide is directly tied to the aging population but it is also increasingly related to detection bias, with newer technologies revealing disease that may have previously gone unrecognized. Results of a study presented at the Annual American Heart Association (AHA) Scientific Sessions in New Orleans in November 2016 that used advanced cardiac monitoring suggest that subclinical AF is common in older patients with no AF symptoms but with a history of AF comorbidities.

Most physicians routinely screen patients with palpitations for AF, especially in the presence of risk factors (diabetes, hypertension, obesity, age). This is typically done with ambulatory ECG monitoring. In 2014, the randomized CRYSTAL-AF study, published in the NEJM, [1] introduced the use of implantable cardiac monitors (ICM) to screen patients for AF following cryptogenic stroke. The study found that ECG monitoring with an ICM was superior to conventional follow-up—ambulatory ECG monitoring—for detecting AF after cryptogenic stroke. Thus began the era of implantable technologies to improve detection of AF.

The ASSERT-2 trial, [2] presented at the AHA meeting in November, enrolled 273 eligible older patients (average age was 73.9 ± 6.2 years) without known AF but with recognized risk factors. Approximately two-thirds of patients were male with multiple risk factors for AF and stroke (average CHA₂DS₂-Vasc=4.1), comprised of hypertension (73%), vascular disease (32%), and diabetes mellitus (25%). Additional risk factors for AF included sleep apnea (11%) and severe left atrial enlargement (LAE; [average left atrial volume 76.5 ± 20.6 ml, LAE in 90% of subjects]) or elevated NT-proBNP (417 ± 1041 pg/mL). Of note, 48% of patients already had prior stroke, embolism, or TIA at time of enrollment. The endpoint was AF detected on the implanted monitor lasting ≥5 min with no clinical symptoms.

Clinically silent AF was detected in 34% of patients within 1 year (mean total follow up, 16 months) and LAE, but not prior stroke or TIA, was found to be a predictor of incident AF. These data suggest that there is a significant burden of subclinical AF in individuals with higher CHA₂DS₂-Vasc scores and perhaps this risk assessment tool (in addition to presence of LAE) should be used to decide which individuals to screen more aggressively for AF with implantable monitors. The absence of a relationship between prior stroke and incident AF is incompletely understood but may suggest a complex, only partially causal relationship between stroke and AF. The implications for anticoagulation therapy (with the new oral agents) for management of subclinical AF are not yet well understood and there are ongoing randomized trials to determine whether anticoagulation is indicated (ARTESIA). [3]

There are also ongoing randomized trials, soon to report, that are screening patients for subclinical AF without LAE. Regardless, the latest easily implanted cardiac monitors have uncovered a whole new disease entity (subclinical AF), which we are still trying to understand how to manage.

References:

3. Apixaban for the Reduction of Thrombo-Embolic in Patients With Device-Detected Sub-Clinical Atrial Fibrillation [ARTESIA]