A-Fib Linked to Increased Risk of Dementia

BY MITCHEL L. ZOLER

BOSTON — Atrial fibrillation may be a significant cause of dementia, based on links between the two disorders in a study of 37,000 people.

In an analysis that controlled for other cardiovascular disease risk factors, patients with atrial fibrillation (AF) were significantly more likely to develop several types of dementia, compared with people without AF. The increased risk was highest among people younger than 70 years old, in whom AF boosted the risk for dementia by two- to threefold, Dr. T. Jared Bunch said at the Heart Rhythm Society's annual meeting. Patients with both AF and dementia also had a significantly increased risk of dying, compared with patients who had the same dementias but no AF.

"To our knowledge, this is the first large population study to clearly show that having AF puts patients at greater risk" for dementia, Dr. Bunch said in a written statement issued at the time of his talk.

One possible explanation of the link is that patients with AF produce microemboli that cause subclinical strokes, which accumulate and eventually produce dementia. This raises the possibility that "early treatment of AF may reduce microemboli and reduce dementia," said Dr. Bunch, a cardiac electrophysiologist at Intermountain Medical Center in Salt Lake City.

"We know that a third of the strokes in the elderly are related to AF. Instituting screening to detect AF early and treat it may be a really important way to prevent dementia," said Dr. Melvin Scheinman, professor of medicine and a cardiac electrophysiologist at the University of California, San Francisco.

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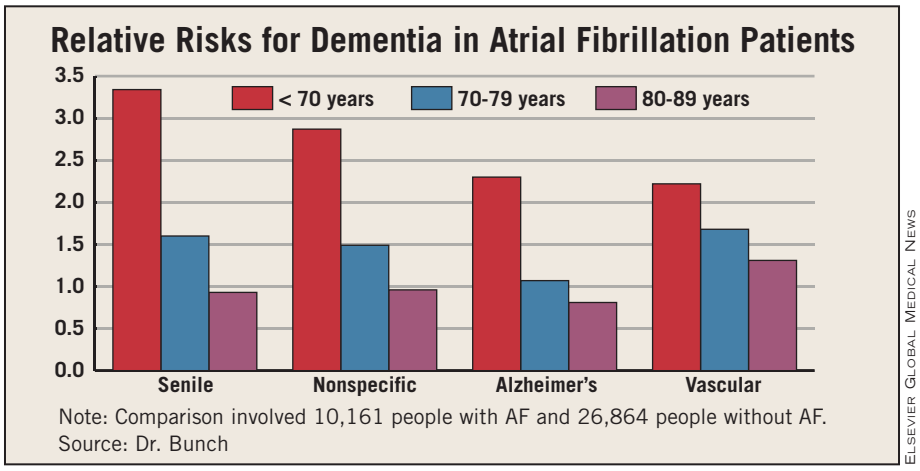
DR. BUNCH

Dr. Bunch and his associates reviewed 37,025 people enrolled in the Intermountain Heart Collaborative Study. The group comprised 26,864 people without AF and 10,161 with AF; they were followed for an average of 5 years. Average age was 58 among those without AF, and 68 among those with AF, and 60% of all participants were men.

The researchers tracked the incidence of four types of dementia during follow-up: nonspecific, vascular, senile, and Alzheimer's disease. The incidence of each of these dementia types was significantly more common in patients with AF than in those without AF. Incidence rates in the AF subgroup ranged from 0.8% for vascular dementia to 3.2% for nonspecific dementia. Rates in those without AF ranged from 0.3% for vascular dementia to 1.3% for nonspecific dementia.



In an analysis of incidence rates that controlled for other cardiovascular risk factors, patients with AF generally had an increased risk for all types of dementias, compared with matched people without AF. (See box.) Relative risk was highest among patients younger than 70. The relative risk for Alzheimer's disease was significantly higher with AF only in people younger than 70. The greatest relative risk linked to AF was senile dementia in patients younger than 70, where AF boosted the risk more than threefold.

Another analysis assessed the risk for death among patients with both AF and dementia, compared with those who had dementia only. Patients with both AF and any of the four dementia types had a 40% increased risk of dying during follow-up, compared with patients with dementia but no comorbid AF.

Patients with coexistent AF and dementia may have a worse prognosis because the condition is less well managed in patients who also have dementia, Dr. Bunch added. ■

Remote ICD Monitoring Speeds Diagnosis of Arrhythmias

BY MITCHEL L. ZOLER

BOSTON — Remote monitoring of implantable cardioverter defibrillators reduced the number of routine office visits and dramatically cut the delay from arrhythmia onset to physician exam, according to a new analysis of more than 1,400 patients.

"This is a landmark study. It shows you can reduce [routine] health care use but increase patient safety" by remote monitoring, Dr. Niraj Varma said at the Heart Rhythm Society's annual meeting. "There is a sense that we need remote monitoring for absolutely every" implanted cardiac device, said Dr. Varma, a cardiac electrophysiologist at the Cleveland Clinic, where he said every implanted defibrillator is now followed by remote monitoring at the clinic.

The findings came from the Lumos-T Safely Reduces Routine Office Device Follow-Up (TRUST) study, which tested the safety and efficacy of Biotronik Home Monitoring, a system that is built into the company's implantable cardioverter defibrillators (ICDs). Dr. Varma said that he has financial relationships with Biotronik, which sponsored the study, as well as with other cardiac device manufacturers.

TRUST tested remote monitoring in a "real-world" setting, with 85% of the patients monitored at community hospitals and 15% monitored at academic centers. The study was done at 105 locations in North America.

The fully automatic system, already on the U.S. market, requires no action by patients. Data are automatically transmitted by a device that sits by the patient's bed. The device is programmed to retrieve a day's worth of data at about 2 a.m. and transmit it to a central monitoring station at the patient's hospital.

The 972 patients randomized to remote monitoring received a bedside transmitter, and were scheduled for in-office monitoring at 3 and 15 months after implantation. The 471 controls did not transmit monitoring data, and were scheduled for the same two monitoring visits as well as office visits at 6, 9, and 12 months after ICD placement. The average age of the patients was 63 years, 72% were men, and 73% received their ICDs for arrhythmia prophylaxis. Their average left ventricular ejection fraction was 29%.

During the first year following placement, remote-monitoring patients had an average of 1.3 scheduled office visits and an average of 0.7 nonscheduled visits, for a total average of 2 office visits per year. The control patients averaged 3.0 scheduled office visits and 0.5 unscheduled office visits, for a total average of 3.5 office visits. Remote monitoring therefore resulted in an average cut of 1.5 office visits per patient per year, or a 43% reduction that was statistically significant for the study's primary outcome. Dr. Varma reported this finding last November at the annual meeting of the American Heart Association.

The study's primary safety measure was the combined incidence of death, stroke, or need for surgical intervention during the year of follow-up. This end point occurred in 9% of the remote-monitoring patients and in 9% of the control patients, showing that "remote monitoring is safe for ICD surveillance," Dr. Varma said.

An important additional analysis looked at the average time elapsed between the onset of an arrhythmia and the patient's evaluation by a physician. In his November report, Dr. Varma presented a preliminary analysis based on mean times to patient evaluation. In the remote-monitoring group, the average delay ranged from 11 days for ventricular fibrillation episodes to 25 days for atrial fibrillation. In the control group, the delay interval ranged from 42 days for supraventricular tachycardias to 47 days for ventricular tachycardias and atrial fibrillations. Although remote monitoring cut the delay, the time seemed surprisingly long, Dr. Varma said. It turned out that a small number of outlier episodes substantially increased average delay times, he added.

In the new analysis reported at the Heart Rhythm Society meeting, the median time from all electrical events to physician visit was 3.3 days, compared with a median of 35 days with conventional ICD monitoring. Among patients with ventricular arrhythmias, the median interval from the episode to the exam was 1 day with remote monitoring, compared with a median delay of 30-35 days by conventional monitoring. With remote monitoring, the median delay to an exam after a supraventricular tachycardia was 2 days and 5 days after atrial fibrillation.

"The major power of remote monitoring is to speed up the detection of events. The time we show [in the new analysis] is very rapid," Dr. Varma said in an interview.

Results reported by other researchers have documented that the number of arrhythmia events flagged by remote monitoring is manageably small and that the alerts are consistently clinically important, he added. The TRUST results support this, although Dr. Varma has not yet reported the data. "The system performs comprehensive surveillance without unnecessary notifications. The false positives and false negatives are very low." ■