

# Atrial Fibrillation: The Epidemic of the New Millennium

By the year 2030, the number of Americans older than 65 years of age will double. Approximately 4% of persons 65 years of age will have atrial fibrillation, and this percentage will increase to approximately 15% at age 75 (1, 2). These data have important implications for the health care system. Most of this growing population of patients will need a simple, cost-effective treatment strategy that can be managed in a primary care setting.

In this issue, Hart and colleagues (3) review stroke prevention trials in patients with atrial fibrillation and confirm the well-described, consistent benefit of warfarin over both aspirin and placebo. They correctly emphasize that this benefit is not offset by the risk for major hemorrhage. They fail to emphasize, however, that atrial fibrillation is a highly heterogeneous disease with respect to risk for stroke. The major benefit of warfarin is seen in patients who are at highest risk for stroke—those older than 75 years of age or those of any age with risk factors for stroke, such as hypertension, poor ventricular function, diabetes mellitus, and previous transient ischemic attack or stroke (4). In a paradoxical sense, it is in high-risk elderly patients that physicians most fear the possibility of inducing bleeding complications with anticoagulation. Therefore, underutilization of this effective therapy is a continuing problem in all groups but particularly in elderly persons (5).

Clinical trials have shown that to optimize the benefit of antithrombotic therapy against risk, especially the risk for intracerebral hemorrhage, monitoring of the level of anticoagulation is essential and the international normalized ratio should be maintained within a tight range of 2.0 to 3.0 (6). Evidence from hypertension trials shows that it is also advisable to control blood pressure within the normal range (7); this is particularly important in patients receiving anticoagulation. Once the international normalized ratio has reached the desired range, monitoring should usually be done monthly. However, with the advent of point-of-care monitoring systems, which require finger sticks rather than venous blood samples, more rigorous regulation of antithrombotic therapy will be possible (8). In selected patients, this technology may also allow self-regulation of warfarin dosing. The unproved assumption is that more frequent monitoring in routine practice will lead to better outcomes. Patients younger than 75 years of age without risk factors may derive sufficient protection from stroke by using aspirin, 325 mg/d (9). To ini-

tiate warfarin therapy, doses of 4 mg for patients younger than 70 years of age and 3 mg for patients 70 years of age or older are recommended (4).

It is important to note that not all induced bleeding is bad and that “the warfarin stress test” may unmask serious gastrointestinal or urinary tract disease at an early stage. To the best of my knowledge, the yield of aggressive investigation of minor bleeding in elderly patients receiving anticoagulation has not been systematically evaluated. However, it is intriguing to speculate that it may be of added clinical value (if not cost-effective) to determine the cause of such bleeding, however minor.

As persons advance in age, atrial fibrillation seems to predict impaired cognitive function (10). The precise mechanism of this possible dysfunction is unknown; however, one can speculate that the pathogenesis of atrial fibrillation and the pathogenesis of dementia in an aging population share a similar mechanism. Alternatively, patients with atrial fibrillation may have multi-infarction dementia. It has been shown that silent cerebral infarction frequently occurs in such patients (11). Research is needed to determine whether anticoagulation improves cognitive function, in addition to its well-known benefit of reducing strokes. Our trial was not sufficiently powered to address this question.

Hart and colleagues have reemphasized the value of anticoagulation in patients with atrial fibrillation. The benefit of this therapy is particularly dramatic among patients at highest risk for stroke. However, elderly persons, who are at increased risk for intracerebral hemorrhage, often do not receive anticoagulation to acceptable levels. Risk for this event can be reduced by diligently controlling blood pressure and keeping the international normalized ratio in the 2.0 to 3.0 range.

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*Acknowledgment:* The author thanks Paulette Trent for administrative support.

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*Ann Intern Med.* 1999;131:537-538.

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