CARDIOVASCULAR REPORTER

Hamilton Health
Science Corporation

ATRIAL FIBRILLATION: WHAT ARE THE OPTIONS?

Atrial fibrillation (AF) is the most common of all cardiac arrhythmias. It is detected in 5% to 9% of individuals older than 65. The most common causes of AF in North America are systemic hypertension, myocardial infarction leading to left ventricular dysfunction, and mitral valve disease.

Why treat AF?

Many patients with AF are at high risk for stroke. Table 1 identifies stroke risk factors in the presence of AF.

All high-risk patients with AF should be considered candidates for antithrombotic therapy. Warfarin has been shown, by some recent large-scale, placebo-controlled, randomized trials, to reduce the annual risk of stroke by two-thirds. While acetylsalicylic acid appears to reduce the risk of stroke by one-third, the data is less concrete and some patients run the risk of bleeding. This risk exists in patients with low hematocrit, renal insufficiency, or systolic hypertension.

Improving symptom control

In most patients with AF, the ventricular rate will be excessive, requiring drugs to slow atrioventricular conduction. While digoxin is useful at controlling heart rate at rest, a second drug, such as a beta blocker or a calcium channel blocker, is often required with activity.

Electrical cardioversion is successful at restoring sinus rhythm in 70% to 80% of patients, but only 25% of patients will remain in normal sinus rhythm after one year. Clinical judgment is needed to determine whether electrical cardioversion is warranted. Most patients with AF should receive three to four weeks of warfarin therapy prior to cardioversion.

Type 1 antiarrhythmic agents maintain sinus rhythm in close to 50% of patients by one year. However, these drugs have the potential for very serious side-effects, including mortality. Amiodarone is the antiarrhythmic agent of choice for elderly patients.

About the author ...

Dr. Gregory Curnew is an assistant clinical professor, McMaster University, staff cardiologist/internist and former director, coronary care unit, Hamilton General Division, Hamilton Health Science Corporation, and a member of our editorial board.

Table 1

Six most important risk factors for stroke in the presence of AF

1. A recent TIA or stroke
2. Mitral stenosis
3. Age greater than 65
4. Hypertension
5. Diabetes
6. LV dysfunction, such as MI and CHF

- In patients with none of these risk factors, the risk of stroke is < 1%-2% per year.
- Patients with more than 2 risk factors have a 15%-20% risk of stroke per year.
- The highest risk of stroke in AF patients is an individual with a previous TIA or stroke.

AF: Atrial fibrillation
MI: Myocardial infarction
TIA: Transient ischemic attack
CHF: Congestive heart failure
LV: Left ventricular

Rate vs. rhythm control: A review of the data

AFFIRM

The Atrial Fibrillation Followup Investigation of Rhythm Management (AFFIRM) trial looked at 4,069 patients with either paroxysmal or sustained AF.[1] In addition to having AF, study-eligible patients were at higher cardiovascular risk. The mean age of participants was 70, and 13% had lone AF. The trial evaluated rate control ver-

CARDIOVASCULAR REPORTER
Hamilton Health
Science Corporation

sus rhythm control. By one year, 80% of patients were in normal sinus rhythm, without much difference between the two groups. However, the AFFIRM trial did demonstrate a higher complication rate in patients randomized to rate-controlling drugs. Complications included more days in hospital and an increase in stroke occurrence if anticoagulation was stopped.

PIAF

The Pharmacologic Intervention in Atrial Fibrillation (PIAF) study evaluated 252 patients with AF lasting between seven and 360 days.[2] The mean age of participants was 61, and 15% of patients had lone AF. Rate and rhythm control were compared. Amiodarone was given to the patients in the rhythm-control group, and diltiazem to those in the rate-control group. The primary end point was improvement in AF-related symptoms. Over the one-year observation period, a similar improvement was seen in both groups. Side-effects, such as photosensitivity and thyroid disorder, both occurred in 5.6% of amiodarone-treated patients. The incidence of hospitalizaton was also higher in the amiodarone-treated group.

STAF

Like the AFFIRM and PIAF sudies, the Strategies of Treatment of Atrial Fibrillation (STAF) trial randomized 200 patients with persistent AF to rhythm or rate control.[3] The primary end point was a combination of death, cardiopulmonary resuscitaton, cerebrovascular event, and systemic embolism. After 19.6 months ± 8.9 months, there was no difference in the primary end point between the rate and rhythm groups.

Type 1 antiarrhythmic agents maintain sinus rhythm in close to 50% of patients by one year

Physician's perspective

AF is a common, chronic, and recurrent problem. In general, North American physicians are undertreating their AF patients.

Until recently, there was little evidence to guide physicians on the matter. With the results of some recent randomized, controlled trials, it is clear that for most AF patients with mild symptoms, or those who are asymptomatic, heart rate control is the best treatment, along with anticoagulant therapy in patients at risk for stroke (provided the risk of bleeding is acceptable).

In patients with significant symptoms, and possibly in those with congestive heart failure (currently under investigation), the use of antiarrhythmic therapy and cardioversion can be considered.

It is important for physicians to be aware that AF often recurs following a first episode and long-term anticoagulant therapy may be necessary.

Amiodarone is currently the best drug in maintaining sinus rhythm. Side-effects, such as photosensitivity and thyroid disorder, as well as pulmonary and liver problems, need to be monitored over the long term. In patients taking amiodarone, thyroid-stimulating hormone should be measured and liver function tests performed two to four times a year.

Atrioventricular node ablation with permanent pacemaker insertion should be considered in patients whose heart rate is not well controlled with drug therapy or those in whom drugs have significant side-effects. PCard

References
1. Blackshear JL. Safford RE: AFFIRM and RACE trials: Implications for the management of atrial fibrillation. Card Electrophysiol Rev 2003; 7(4):366-9.
2. Hohnloser SH, Kuck KH, Lilienthal J: Rhythm or rate in atrial fibrillation—Pharmacologic Intevention in Atrial Fibrillation (PIAF): A randomized trial. Lancet 2000; 356(9244):1789-94.
3. Carlsson J, Miketic S, Windeler J, et al: Randomized trial of rate control versus rhythm control in persistent atrial fibrillation: The Strategies of Treatment of Atrial Fibrillation (STAF) study. J Am Coll Cardiol 2003; 41(10):1703-6.

Publications Mail Sales Product Agreement 40063348. Postage paid at St. Laurent, Quebec.
Please address all change-of-address notices and subscription requests to: PERSPECTIVES IN CARDIOLOGY, 955 boulevard St-Jean, Suite 306, Pointe Claire, Quebec H9R 5K3. Tel: (514) 695-7623; Fax (514) 695-8554.