Non-Pharmacological Methods of Maintaining Sinus Rhythm

To the Editor:

The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) investigators recently presented their analysis of the relationship between cardiac rhythm, treatment, and survival from the original AFFIRM study.1 The investigators conclude that the use of warfarin and the presence of sinus rhythm were important determinants of survival. The use of antiarrhythmic drug therapy to maintain sinus rhythm did not appear to improve survival, perhaps indicating that the mortality benefit from sinus rhythm was offset by the hazards of drug therapy.

Though these data are retrospective and nonrandomized, the article supports epidemiological evidence that atrial fibrillation is an independent risk factor for mortality.2 After the publication of the rate versus rhythm data, changes in the management of atrial fibrillation have been reported.3 Patients that may previously have undergone cardioversion are now being maintained in permanent atrial fibrillation. Is it possible that this strategy is actually incorrect?

Finally, the authors conclude that, “If an effective method for maintaining sinus rhythm with fewer adverse effects were available, it might be beneficial” (p 1509). The patient activated defibrillator is such a method and has been shown in several studies to be a safe and effective method of restoring and maintaining sinus rhythm in patients with recurrent persistent atrial fibrillation.4–6 Prolonged sinus rhythm duration between cardioversions has been observed, and patients may potentially be withdrawn from the risks of antiarrhythmic medication. With increasing evidence of the long-term hazards of atrial fibrillation and antiarrhythmic drug therapy, non-pharmacological methods of maintaining sinus rhythm are becoming more attractive.

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Response

We thank Dr Mitchell for his interest in our manuscript.1 His first question could be interpreted 2 ways. First, he may be asking whether it is possible that the strategy of rate control is incorrect for patients who have previously undergone at least 1 cardioversion and now have chronic atrial fibrillation. If cardioversion has been performed and atrial fibrillation recurs, further attempts to restore and maintain sinus rhythm will likely be futile. Without precisely defining the patient group being treated, the question cannot be answered any more directly. If the patient’s clinical characteristics are similar to the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) study patients, a rate-control strategy is eminently reasonable, as supported by the main AFFIRM study.2 Second, he may be asking the more general question about the validity of applying the AFFIRM results to patients first presenting with atrial fibrillation who, before the AFFIRM study, would have undergone cardioversion, but who did not, and who were left in atrial fibrillation. Certainly, in patients with clinical characteristics similar to AFFIRM patients (elderly or with one or more other risk factors for stroke or death), our randomized study2 and others3 found no benefit from attempting to maintain sinus rhythm with currently available antiarrhythmic agents.

Regarding non-pharmacological strategies for restoring (and maintaining) sinus rhythm, we have no prospective data. Almost certainly, patients undergoing implantation of an atrial defibrillator are different than those who were in AFFIRM. Specifically, they are likely to be more symptomatic, and indeed, many need concomitant drug therapy to decrease the frequency of atrial fibrillation and frequent shocks.4 Thus, having an atrial defibrillator does not necessarily allow avoidance or discontinuation of antiarrhythmic drugs. Similarly, most of these patients would also have to be maintained on an anticoagulant.

Both the main AFFIRM article5 and the article under discussion1 support the conclusion (the main article more definitively as it was a randomized study) that there is no survival benefit to attempting to maintain sinus rhythm with currently available antiarrhythmic drugs. The time-related analysis was retrospective and should be considered to be hypothesis-generating. Similarly, if the implantable atrial defibrillator is a method of maintaining sinus rhythm with few adverse effects, or if other non-pharmacological or pharmacological methods for maintaining sinus rhythm are developed also with few adverse effects, survival in some patients with atrial fibrillation may be improved by their use. At the moment, any speculation about the relative benefits of non-pharmacological or new pharmacological therapies remains only an hypothesis that must be tested in appropriately-designed randomized trials before it can be accepted.

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