

The AFFIRM study: Approaches to control rate in atrial fibrillation

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REFERENCES

1. Olshansky B, Rosenfeld LE, Warner AL, et al, for the AFFIRM investigators. The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) study: approaches to control rate in atrial fibrillation. *J Am Coll Cardiol* 2004;43:1201-8.
2. Wyse DG, Waldo AL, DiMarco JP, et al. A comparison of rate control and rhythm control in patients with atrial fibrillation. *N Engl J Med* 2002;347:1825-33.
3. Van Gelder IC, Hagens VE, Bosker HA, et al. A comparison of rate control and rhythm control in patients with recurrent persistent atrial fibrillation. *N Engl J Med* 2002;347:1834-40.
4. Fuster V, Ryden LE, Asinger RW, et al. ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation: executive summary. *Circulation* 2001;104:2118-50.
5. Khand AU, Rankin AC, Martin W, Taylor J, Gemmell I, Cleland JG. Carvedilol alone or in combination with digoxin for the management of atrial fibrillation in patients with heart failure? *J Am Coll Cardiol* 2003;42:1944-51.

The AFFIRM Study: Approaches to Control Rate in Atrial Fibrillation

The optimal heart rate for patients with atrial fibrillation (AF) remains unclear; current guidelines are primarily based on clinical experience (1). Recent randomized studies suggest combining beta-blockers or calcium channel blockers with digoxin to achieve better rate control at rest and during exercise (2-4). However, I believe clarification of the "approach to control rate in AF" by the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) investigators (4) is justified.

A total of 2,027 patients were randomized to the rate control arm of the AFFIRM trial between 1995 and 1999. Of these, 248 crossed over to the rhythm-control group due to "uncontrolled symptoms" and 108 underwent AV nodal ablation due to failure of pharmacologic therapy. Rate-control data at rest are available in only 740 (36.5%) patients, which deteriorates further to 361 (17.8%) if data regarding heart-rate control during exercise are desired.

This relative lack of data may be explained by the fact that 1,055 (52%) patients were in sinus rhythm at the time of randomization. The proportion of those in the rate-control group who maintained sinus rhythm during follow-up is unclear. Published data for the entire trial population suggest a similar number (49%) remaining in sinus rhythm at study end.

Therefore, the majority of data on rate control of AF comes from a minority of patients randomized to a rate-control strategy. Because of the nature of data collection (only patients with AF at the time of assessment were selected for analysis), care should be taken in interpreting these results. The data predominantly represent patients with persistent and permanent AF and significantly underrepresent those with paroxysmal AF.

It is difficult to make conclusions on the control of ventricular rate during paroxysms of AF from this study, the occurrence of which greatly depends on variations of the autonomic tone (5).

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REFERENCES

1. Fuster V, Ryden LE, Asinger RW, et al. ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation: executive summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and Policy Conferences (Committee to Develop Guidelines for the Management of Patients With Atrial Fibrillation) developed in collaboration with the North American Society of Pacing and Electrophysiology. *Circulation* 2001;104:2118-50.
2. Farshi R, Kistner D, Sarma JS, Longmate JA, Singh BN. Ventricular rate control in chronic atrial fibrillation during daily activity and programmed exercise: a crossover open-label study of five drug regimens. *J Am Coll Cardiol* 1999;33:304-10.
3. Khand AU, Rankin AC, Martin W, Taylor J, Gemmell I, Cleland JG. Carvedilol alone or in combination with digoxin for the management of atrial fibrillation in patients with heart failure? *J Am Coll Cardiol* 2003;42:1944-51.
4. Olshansky B, Rosenfeld LE, Warner AL, et al, for the AFFIRM investigators. The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) study: approaches to control rate in atrial fibrillation. *J Am Coll Cardiol* 2004;43:1201-8.
5. Bettoni M, Zimmermann M. Autonomic tone variations before the onset of paroxysmal atrial fibrillation. *Circulation* 2002;105:2753-9.

REPLY

We thank Dr. Van Gelder and colleagues and Dr. Shelton for their interest in our study (1). We agree with Dr. Van Gelder and colleagues that the optimal heart rate in atrial fibrillation (AF) during rest and exercise is unknown. Perhaps minimal effort to achieve rate control during AF is sufficient. However, absence of adequate rate control can lead to adverse consequences such as tachycardia-induced cardiomyopathy. Our Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) substudy was not designed to evaluate the mortality and morbidity of inadequate rate control; thus, we cannot comment on these end points.

Both ablation of the atrioventricular junction and pacemaker insertion were allowed "innovative" therapies in the AFFIRM study, and they may have contributed to the relatively frequent use of this approach. Furthermore, attempting to achieve more "stringent" rate control may have led to more symptomatic drug-induced bradycardia and subsequent pacemaker insertion in the AFFIRM study, compared to the more "lenient" criteria used in the RAte Control versus Electrical cardioversion (RACE) study. However, the patient population in the AFFIRM study was not directly comparable to that in RACE, and pacemaker implantation per capita in the U.S. is higher than in Europe. These factors may have influenced the differences between these two studies.

We agree that a long-term, prospective, randomized trial would be useful. We applaud Dr. Van Gelder and colleagues for pursuing answers to some of these difficult issues in the RAte Control Efficacy in permanent atrial fibrillation (RACE II) study.

Dr. Shelton concurs that the optimal approach to rate control remains primarily based on clinical experience. He notes that 248 patients in the AFFIRM study crossed over to the rhythm-control group, and 108 patients underwent ablation of the atrioventricular junction (1). Many patients (approximately one-half) in the

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