Rate versus rhythm in atrial fibrillation

And how slow do you go?

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Clinical question
For patients with persistent atrial fibrillation (AF), how does attempting to control sinus rhythm compare with rate control, and what should the target heart rate be?

Evidence
• Rate versus rhythm: Four meta-analyses1-4 with up to 5 trials compared rate and rhythm (N = 5239, mean age 69 years, 38% women, mean follow-up 3.1 years).1,3 Compared with those in the rhythm-control group, patients in the rate-control group had significantly fewer hospitalizations (54.7% vs 67.3%, P < .01, number needed to treat [NNT] = 8); had significantly reduced death, cardioembolic stroke, and intracranial hemorrhage (16.3% vs 18.6%, P = .03, NNT = 43)—although individual end points did not reach statistical significance; and were less likely to be in sinus rhythm (eg, 35% vs 63% in the largest trial).1
• Strict versus lenient rate: An RCT5 (N = 614, mean age 68 years, 66% men, 61% with CHADS2 scores between 0 and 1, followed for up to 3 years) compared strict rate control (resting heart rate target < 80 beats/min) and lenient rate control (resting heart rate target < 110 beats/min). Lenient rate control was not inferior to strict rate control in terms of a composite outcome (cardiovascular death, heart failure, hospitalization, stroke, systemic embolism, bleeds, life-threatening arrhythmia): 12.9% vs 14.9%, hazard ratio 0.84, 90% CI 0.58 to 1.21.

Context
• Although historically it was thought that attempting to restore sinus rhythm was advantageous, medications used to establish and maintain sinus rhythm have risks.3,4 Even in patients with coexistent congestive heart failure and AF, mortality and morbidity outcomes did not differ between rate and rhythm groups.6
• Recent guidelines recommend rate control, particularly for elderly patients with minimal symptoms,7 and rhythm control for select patients.7 Strict rate control is not beneficial in those with stable ventricular function and no or acceptable symptoms.8
• Regardless of the treatment strategy, antithrombotic therapy is a central part of AF management.7

Bottom line
Patients with persistent AF are more likely to benefit from rate control than rhythm control. Targeting resting heart rate to below 80 beats/min does not appear to be necessary. Regardless of the treatment strategy, antithrombotic therapy is central to AF management.

Implementation
Rate and rhythm control produce similar overall quality of life,3 but a recent observational study reported improved quality of life in patients with strict rate or rhythm control5 compared with those with uncontrolled rate or rhythm. A reasonable approach is to determine whether patients are symptomatic with AF. For most asymptomatic patients, rate control with a resting heart rate target below 110 beats/min is sufficient. For symptomatic patients, titrate the heart rate until symptoms improve, or consider rhythm control in appropriate candidates. Thrombotic risk should be calculated using a validated risk calculator (eg, CHADS2, or CHA2DS2-VASc, which might be a better indicator of risk, particularly in those with intermediate CHADS2 scores).10

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References

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