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-analyses[1-4] 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)[3];
  -had significantly reduced death, cardioembolic stroke, and intracranial hemorrhage (16.3% vs 18.6%, *P* = .03, NNT = 43)[2]—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 RCT[5] (N = 614, mean age 68 years, 66% men, 61% with $CHADS_2$ 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.
- 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 control[9] 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, $CHADS_2$ or CHA_2DS_2-VASc, which might be a better indicator of risk, particularly in those with *intermediate* $CHADS_2$ scores).[10]

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