



Rhythm Control in Atrial Fibrillation

Restoration of normal sinus rhythm is a commonly pursued goal in atrial fibrillation. Potential benefits of this strategy versus leaving the patient in atrial fibrillation and simply controlling the heart rate response include:

- Improved cardiac output
- Reduced symptoms: fatigue, palpitation and shortness of breath
- Reduced thromboembolic risk
- Prevention of tachycardia induced cardiomyopathy

Whether to pursue a course of repeated cardioversions and administration of anti-arrhythmic therapy to maintain sinus rhythm has been recently studied in several clinical trials. No differences in clinical outcomes between rate and rhythm control strategies were identified in these trials. In all cases, anti-coagulant therapy to minimize thromboembolic risk is indicated throughout the period when rhythm restoration is being attempted as well as chronically as per the patient's thromboembolic risk indications.

AFFIRM Trial¹

- 4060 patients with atrial fibrillation of less than 6 months duration
- Rate control with digoxin, beta blocker or calcium channel blocker and anticoagulation with warfarin or
- Rhythm control with the most effective anti-arrhythmic drug and anticoagulation with warfarin
 - Amiodarone 39% (60% at 3 years), sotalol 33%, other Rx 1-10%
- Follow-up 3.5 years
- Results:
 - No difference in all cause mortality (1° endpoint)
 - Trend towards better survival with rate control
 - No difference in death, ischaemic stroke, anoxic encephalopathy, major bleeding or cardiac arrest (2° endpoints)
 - No difference in quality of life or functional status including cardiovascular death, CHF, thromboembolism severe bleeding, pacemaker implantation or side effects of anti-arrhythmic therapy between the two strategies:

RACE Trial²

- 522 patients with persistent atrial fibrillation or atrial flutter (24 hours-1 year)
- 2 cardioversions within 1 year
- Rate control to HR < 100 bpm and no symptoms
- Rhythm control: Sotalol followed by Flecainide or Propafenone followed by Amiodarone
- Primary endpoint: cardiovascular death, admission or CHF, Thromboembolic events, severe bleeding, pacemaker implantation or severe anti-arrhythmic side effects
- Results: non-significant trend to higher incidence of primary endpoint with rhythm control (22.6 versus 17.2%
- In patients with hypertension, rhythm control had a higher incidence of the primary endpoint 30.8 versus 12.5 % for rate control)

Two smaller trials PIAF³ (252 patients) and STAF⁴ showed similar results. A trial of maintenance of sinus rhythm in CHF patients the AFIB-CHF trial is still ongoing.

1. Results from late-breaking clinical trial sessions at the American College of Cardiology 51st Annual Scientific Session. Williams ES; Miller JM. J Am Coll Cardiol 2002 Jul 3;40(1):1-18.

2. Williams, ES, Miller, JM. Results from late-breaking clinical trial sessions at the American College of Cardiology 51st Annual Scientific Session. J Am Coll Cardiol 2002; 40:1.

3. Hohnloser, SH, Kuck, KH, Lillenthal, J. Rhythm or rate control in atrial fibrillation—Pharmacological Intervention in Atrial Fibrillation (PIAF): a randomised trial. Lancet 2000; 356:1789.

4. Data presented at the American College of Cardiology Annual Scientific Sessions, Orlando, Florida, 2001.

