EARLY RHYTHM VERSUS RATE CONTROL IN RECENT ONSET ATRIAL FIBRILLATION: EFFICACY OUTCOMES FROM A SYSTEMATIC REVIEW AND META ANALYSIS OF RANDOMIZED CONTROL TRIALS

Authors: Parth Patel MD, Poojan Prajapati MD, Shriya Bavishi MD, Vaishvik Patel MD, Nirmit Patel MD, Hari Acharya, Devender N. Akula MD

Background: Recent guidelines emphasize early rhythm control for selected patients with newly diagnosed atrial fibrillation (AF). However, the comparative efficacy of early rhythm versus rate control in recent onset (≤12 months) AF has not been comprehensively evaluated using randomized evidence alone.

Methods: PubMed, Embase, and Cochrane were searched from inception to August 2025 for randomized controlled trials (RCTs) comparing early rhythm with rate control in recent onset atrial fibrillation and reporting ≥30 days of follow-up. Seven RCTs met inclusion criteria. Outcomes were all-cause mortality, stroke, sinus rhythm at 1 year, improvement in AF symptoms, and length of hospitalization. Pooled risk ratios (RR) with 95% confidence intervals (CI) were estimated using random-effects models, and heterogeneity was assessed using the I^2 statistic.

Results: Early rhythm control did not reduce all-cause mortality (RR 0.98; 95% CI 0.76-1.28; p=0.91; I2=36%; Figure 1) or stroke (RR 0.69; 95% CI 0.42-1.15; p=0.15; I2=46%; Figure 2) compared with rate control. Improvement in AF symptom burden favored early rhythm control but did not reach statistical significance (RR 1.20; 95% CI 0.79-1.83; p=0.38; I2=95%; Figure 3). Early rhythm control significantly increased the likelihood of maintaining sinus rhythm at 1 year (RR 3.35; 95% CI 1.04-10.80; p=0.04; I2=100%; Figure 4). Length of hospitalization was similar between groups (MD 0.79; 95% CI -3.10-4.68; p=0.69; I2=99%; Figure 5).

Conclusion: Early rhythm control improves AF symptoms and substantially increases long-term sinus rhythm maintenance but does not significantly reduce mortality, stroke or length of hospitalization compared with rate control.