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

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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.

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Figure 1. All-cause mortality

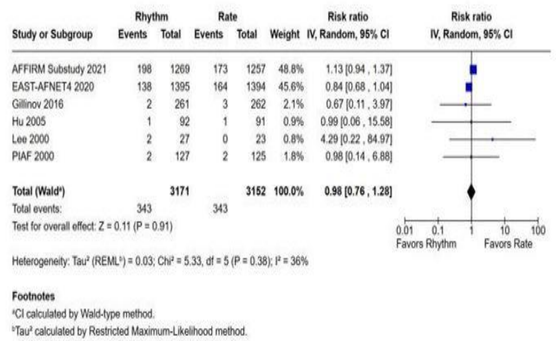


Figure 2. Stroke

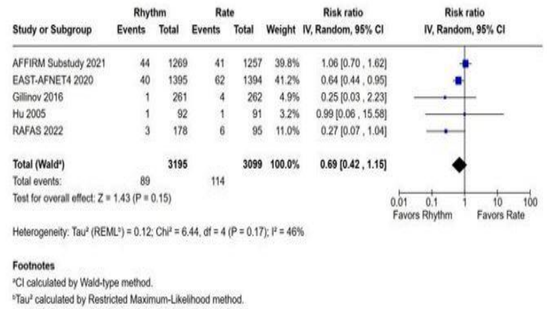


Figure 3. Improvement in AFIB symptoms

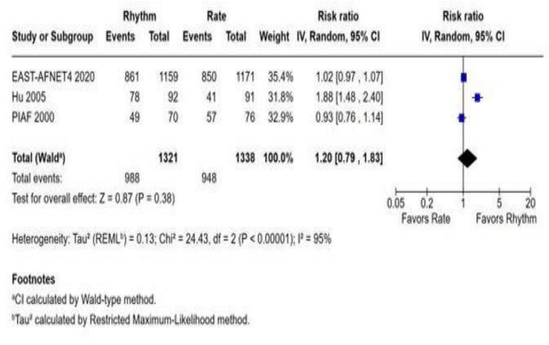


Figure 4. Sinus rhythm at 1 year

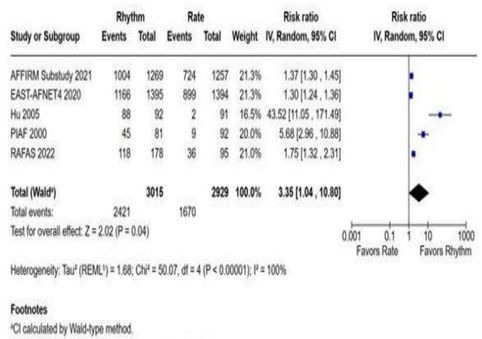
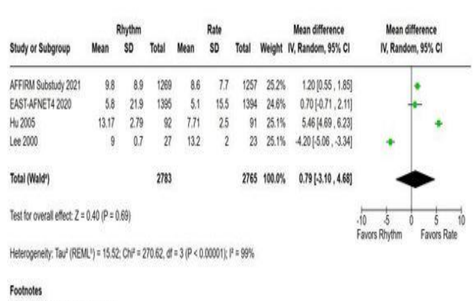


Figure 5. Length of hospitalization



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.

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