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POSTER PRESENTATION

ATRIAL FIBRILLATION

Vernakalant Versus Other Antiarrhythmic Agents for Emergency Pharmacological Cardioversion of Recent-Onset Atrial Fibrillation: A Systematic Review and Meta-Analysis

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Background

Vernakalant is an atrial-selective antiarrhythmic agent approved for rapid conversion of recent-onset atrial fibrillation (AF). Its comparative effectiveness versus other antiarrhythmic agents remains incompletely characterized. We aimed to systematically evaluate the efficacy and safety of intravenous vernakalant compared with other antiarrhythmic agents for pharmacological cardioversion of recent-onset AF.

Methods

We searched PubMed, Embase, Scopus, and Web of Science through March 2026 for studies comparing intravenous vernakalant with any active antiarrhythmic comparator for AF cardioversion. The primary outcome was conversion to sinus rhythm. Dichotomous data were pooled as odds ratios (OR) with 95% confidence intervals (CI) using random-effects models. Trial sequential analysis (TSA) was performed to assess the sufficiency of cumulative evidence.

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Safety and evidence sufficiency

Adverse events occurred less frequently with vernakalant (OR = 0.76, 95% CI [0.54, 1.05], P = 0.098). Results were robust across all subgroups and sensitivity analyses.

TSA confirmed conclusive evidence (accrued 129.5% of required information size).

Results

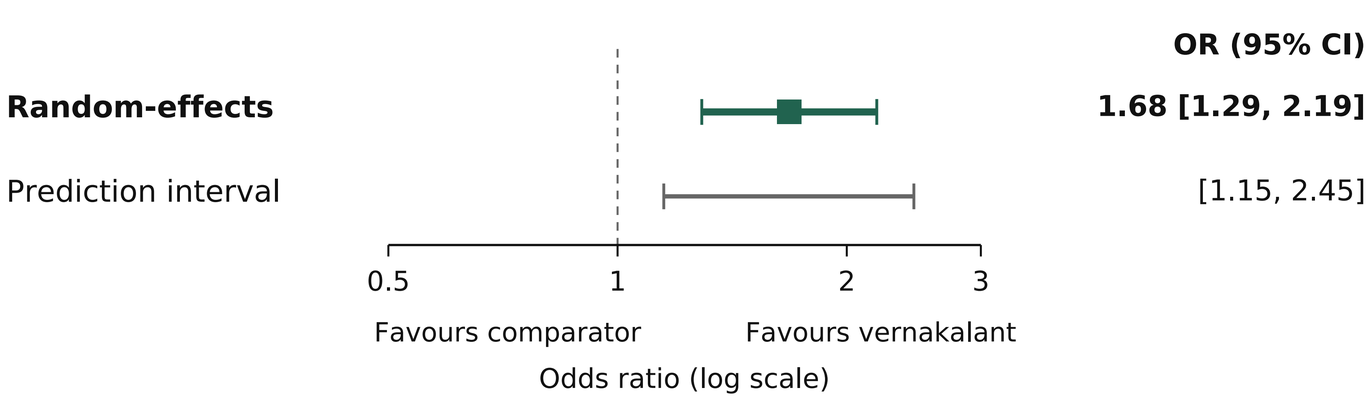
Five studies (n = 1,005 patients) were included. Comparators were procainamide, flecainide, ibutilide, and amiodarone.

Vernakalant was significantly superior for conversion to sinus rhythm under both random-effects (OR = 1.68, 95% CI [1.29, 2.19], P < 0.001) and common-effect models (OR = 1.68, 95% CI [1.29, 2.19], P < 0.001), with negligible heterogeneity (I^2 = 1.5%; Q = 4.06, P = 0.40; τ^2 = 0.0002) (Figure 1).

The prediction interval [1.15, 2.45] was entirely above the null, indicating that the benefit of vernakalant is expected to be maintained consistently across future clinical settings.

Figure 1. Conversion to sinus rhythm

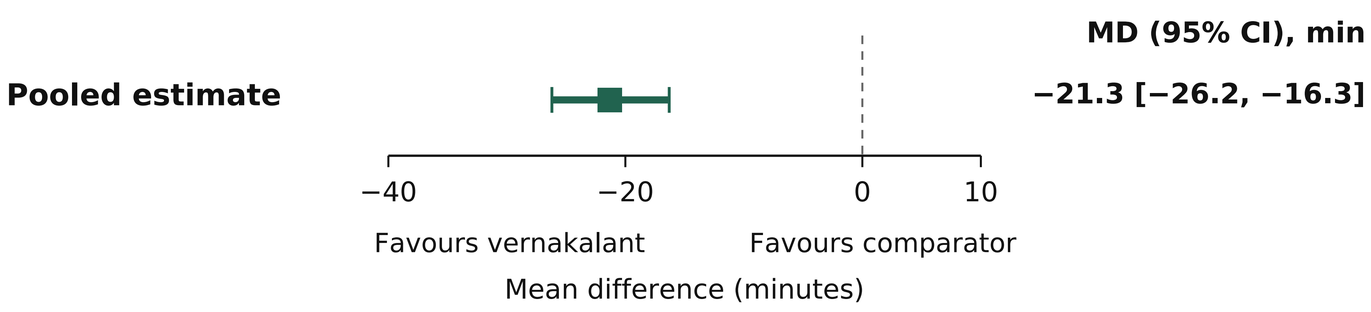
Pooled effect and prediction interval



Time to conversion was significantly shorter with vernakalant (pooled MD = −21.3 minutes [95% CI −26.2, −16.3]; I^2 = 0%; three studies) (Figure 2).

Figure 2. Time to conversion

Pooled mean difference with 95% CI



Conclusion

Vernakalant demonstrates superior efficacy and a favorable safety profile versus other antiarrhythmic agents for acute AF cardioversion. The evidence base is confirmed sufficient by trial sequential analysis.

AF, atrial fibrillation; OR, odds ratio; CI, confidence interval; MD, mean difference; TSA, trial sequential analysis.