

Systematic Review Protocol: surgical ablation for atrial fibrillation during mitral valve surgery

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Objectives

The purpose of this meta-analysis is to assess the safety and efficacy of concomitant surgical ablation and mitral valve surgery for the treatment of atrial fibrillation.

Methods

Participants

Atrial fibrillation patients who are undergoing mitral valve surgery.

Interventions

Surgical ablation for atrial fibrillation treatment, including Cox-Maze cut-and-sew, radiofrequency ablation, cryoablation, microwave ablation, and pulmonary vein isolation.

Outcome measures

The primary outcome measures of interest include prevalence of sinus rhythm and mortality. Secondary outcome measures include neurological events, permanent pacemaker implantations, pericardial effusions, reoperative bleeding, myocardial infarctions, and anti-arrhythmics at one year follow-up.

Search strategy

Randomized controlled trials comparing atrial fibrillation patients who underwent concomitant mitral valve surgery and surgical ablation, versus mitral valve surgery alone, will be included.

Six electronic databases including MEDLINE, EMBASE,

PubMed, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Database of Abstracts of Reviews of Effectiveness will be searched for original published studies. The reference lists of all retrieved articles will be reviewed to further identify potentially relevant randomized controlled studies. Experimental or observational studies will be included in the present review. Only studies in English will be included. Case reports, series with less than ten patients, abstracts, editorials, and expert opinions will be excluded.

Two reviewers will independently appraise the studies using a standard form, and extract data based on methodology, quality criteria, and outcome measures. All data will be extracted and tabulated from the relevant articles' texts, tables, and figures and checked by an additional reviewer. The studies will be assessed qualitatively using tools designed to measure the risk of bias, as recommended by the Cochrane Collaboration (Oxford, United Kingdom).

Statistical analysis

The odds ratios or weighted mean differences will be used as a summary statistic. Random effects models will be used to account for potential clinical diversity and methodological variation between studies where the selection criteria and risk profiles of patients differ. I^2 statistic will be used to estimate the percentage of total variation across studies owing to heterogeneity, rather than chance. I^2 values greater than 50% will be considered as substantial heterogeneity, and the possible clinical and methodological reasons for this will be explored qualitatively. Statistical significance will be considered at $P < 0.05$. All P values will be 2-sided.