

Effect of Concomitant Surgical Atrial Fibrillation Ablation in Patients with Reduced Left Ventricle Ejection Fraction: A Propensity-Score Matching Analysis

Goran Rimac¹, Nicolas Lauzon¹, Mario Sénéchal¹, François Dagenais¹, Frederic Jacques¹, François Philippon¹, and Pierre Voisine¹

¹Institut universitaire de cardiologie et de pneumologie de Quebec

April 4, 2022

Abstract

Background: Atrial fibrillation (AF) is common in patients with reduced left ventricle ejection fraction (RLVEF). The impact of concomitant surgical atrial fibrillation ablation (SAFA) in patients with RLVEF is uncertain. The purpose of this study was to assess the outcomes of concomitant SAFA in patients with RLVEF undergoing heart surgery on heart failure (HF) rehospitalization and mortality. Methods: Using a local registry and electronic health records linked with provincial civil register survival data from July 2002 to April 2019, we analyzed treatment and outcomes in a cohort of patients with AF and HF defined by left ventricle ejection fraction (LVEF) [?] 40%. Health records were used to collect treatment and International Classification of Diseases (ICD 10) codes to determine outcomes. A negative binomial model was used to compare outcomes such as all-cause mortality and rehospitalization for heart failure. Results: The cohort included 682 patients with RLVEF and AF who underwent coronary artery bypass graft and/or valve surgery. A total of 196 patients (29%) underwent concomitant SAFA. After matching, 132 patients with concomitant SAFA were compared to 159 patients who did not undergo concomitant SAFA. At 6.0±3.7 years of follow-up, concomitant SAFA was not associated with lower all-cause mortality (P=0.9861) and reduction in rehospitalizations for heart failure decompensation (P=0.31) compared to patients who did not have concomitant SAFA performed. Post-operatively, concomitant SAFA might be associated with less vasopressor and mechanical support use (p=0.01). Conclusions: Concomitant SAFA during index cardiac surgery is safe but does not reduce mortality or rehospitalizations for HF. The effects of concomitant SAFA in the context of RLVEF needs to be better studied with prospective trials.

Hosted file

Manuscript unmarked final.docx available at <https://authorea.com/users/473714/articles/563833-effect-of-concomitant-surgical-atrial-fibrillation-ablation-in-patients-with-reduced-left-ventricle-ejection-fraction-a-propensity-score-matching-analysis>

Hosted file

Figures - final.docx available at <https://authorea.com/users/473714/articles/563833-effect-of-concomitant-surgical-atrial-fibrillation-ablation-in-patients-with-reduced-left-ventricle-ejection-fraction-a-propensity-score-matching-analysis>

Hosted file

Tables - final.docx available at <https://authorea.com/users/473714/articles/563833-effect-of-concomitant-surgical-atrial-fibrillation-ablation-in-patients-with-reduced-left-ventricle-ejection-fraction-a-propensity-score-matching-analysis>