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Long-term thromboembolic risk in patients with postoperative atrial fibrillation after left-sided heart valve surgery

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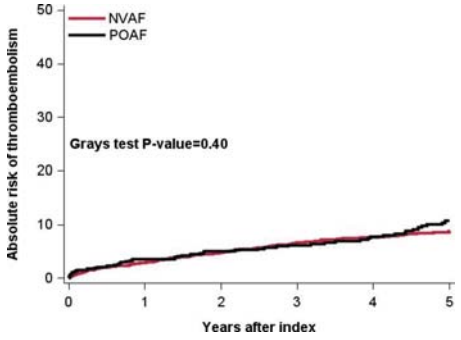
Background: New-onset postoperative atrial fibrillation (POAF) is a common complication of cardiac surgery. However, data on the long-term risk of thromboembolism in patients who develop POAF after heart valve surgery are sparse. In addition, data on stroke prophylaxis in this setting are lacking.

Objective: To assess the long-term risk of thromboembolism in patients developing new-onset POAF following isolated left-sided heart valve surgery relative to patients with nonsurgical, nonvalvular atrial fibrillation (NVAF).

Methods: Using data from the Eastern Danish Heart Surgery Database and Danish nationwide registries, we identified patients who developed POAF following isolated left-sided heart valve surgery (i.e. biologic aortic/mitral valve replacement or aortic/mitral valve repair) from 2000 through 2015. These patients were matched with patients with nonsurgical NVAF in a 1:4 ratio by age, sex, heart failure, hypertension, diabetes, a history of thromboembolism, ischemic heart disease, and year of diagnosis. Long-term risk of thromboembolism was examined by the Aalen-Johansen estimator and cause-specific Cox regression models adjusted for comorbidities, concomitant pharmacotherapy, and oral anticoagulation therapy as a time-dependent covariate.

Results: A total of 1,539 patients undergoing isolated left-sided heart valve surgery were identified. Of these, 716 (46.5%) patients developed POAF after surgery. A total of 630 patients with POAF were matched with 2,520 patients with NVAF. In the matched study population, the median age was 71 years (25th-75th percentile 66–77 years) and 59.5% were men. Oral anticoagulation therapy was initiated within 30 days post-discharge in 62.7% and 51.4% of these patients, respectively. Compared with NVAF, POAF was not associated with a significantly different 5-year absolute risk of thromboembolism (10.7% [95% confidence interval [CI], 8.0%-13.9%] versus 8.9% [95% CI, 7.6%-10.2%] in the POAF and NVAF group, respectively) (Figure). In the adjusted analysis, the long-term risk of thromboembolism was similar in patients with POAF and NVAF (hazard ratio [HR] 1.01 [95% CI, 0.71–1.44]). Anticoagulation therapy during follow-up was associated with a lower risk of thromboembolic events in patients with POAF (HR 0.45 [95% CI, 0.18–0.99]) as well as NVAF (HR 0.58 [95% CI, 0.42–0.80]) compared with no anticoagulation therapy.

Conclusions: New-onset POAF following isolated left-sided heart valve surgery was associated with a similar long-term risk of thromboembolism compared with NVAF. Future studies addressing the role of oral anticoagulation therapy in POAF after heart valve surgery are warranted to examine the efficacy and safety as well as the timing and duration of anticoagulation therapy.



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