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Commentary: New onset atrial fibrillation: Not just a nuisance

Stacey Chen, MD, and Eugene A. Grossi, MD

Stacey Chen, MD (left), and Eugene A. Grossi, MD (right)

Atrial fibrillation (AF) is a common complication following cardiac surgery.^{1,2} Although often self-limiting, postoperative AF is associated with significant morbidity and mortality.¹⁻³ In this issue of the *Journal*, Björn and colleagues⁴ present a multi-institutional retrospective study evaluating the incidence of new-onset AF (NOAF) and long-term outcomes in 782 patients with no history of AF who underwent isolated surgical aortic valve replacement (SAVR). Both bioprosthetic and mechanical AVRs were included in the overall study, with subset analyses performed for bioprosthetic and mechanical valves. The authors report that 42.6% of patients developed in-hospital NOAF and 32% developed late AF, defined as either AF after hospital discharge or NOAF persisting for at least 3 months. In the overall cohort, mitral valve regurgitation degree $\geq$ III and NOAF were independent predictors of late AF, while left atrial dilatation was an independent risk factor in the overall and bioprosthetic groups. Importantly, this study reflects long-term follow-up in NOAF patients with a median follow-up of 5.4 years. Björn and colleagues demonstrate that although NOAF in SAVR patients was not associated with increased incidence of stroke, it was associated with increased AF recurrence years after patients' index AVR and all-cause mortality in a risk-adjusted model.

In a recent study evaluating preoperative predictors of NOAF in 720 patients undergoing isolated SAVR, Axtell and associates⁵ reported that NOAF persisted for up to 5.5 years in their study cohort. The influence of NOAF in

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Surgical aortic valve replacement complicated by new-onset atrial fibrillation is associated with poor long-term outcomes. Studies of prophylactic left atrial appendage exclusion may be warranted.

long-term outcomes in SAVR patients from these recent studies highlight the importance of adjunctive measures to prevent NOAF.^{4,5} The left atrial appendage (LAA) serves as the nidus of atrial thrombi in 90% of patients.⁶ Although some studies have focused on the concept of LAA exclusion to decrease stroke risk in AF patients, data are lacking on routine LAA exclusion with concomitant cardiac surgery in patients without a known history of AF.^{7,8} As such, further investigation regarding the role of LAA exclusion as a prophylactic strategy to decrease the incidence of NOAF is a growing area of interest. Indeed, the AtriClip LAA Exclusion Concomitant to Structural Heart Procedures trial (ATLAS; [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT02478294) identifier NCT02478294) is the first prospective randomized multicenter trial that will compare patients without pre-existing AF with CHA₂DS₂-VASc (congestive heart failure, hypertension, age $\geq$ 75 years, diabetes mellitus, previous history of stroke or transient ischemic attack, vascular disease, age 65-74 years, female sex) score $\geq$ 2 in two treatment arms: patients who undergo valve or coronary artery bypass graft surgery with and without LAA exclusion. Data from this trial will provide valuable information regarding the potential role for routine prophylactic LAA exclusion.

The long-term clinical sequelae of NOAF in SAVR patients reported by Björn and colleagues demonstrate that we can no longer disregard NOAF. Serious consideration for strategies to prevent NOAF occurrence to improve

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long-term outcomes in this high-risk patient population are warranted.

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Commentary: Postoperative atrial fibrillation: An old foe in a new light

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Postoperative atrial fibrillation (POAF) continues to plague the work of cardiac surgeons as one of the most commonly reported complications. Although often self-limited and partially preventable,¹ the reported incidence after bypass and valve surgery is as high as 40%.²

In this edition of the *Journal*, Björn and colleagues³ report their results on 782 patients undergoing isolated surgical aortic valve replacement (SAVR), the incidence of new-onset atrial fibrillation (NOAF), persistence of atrial fibrillation after hospital discharge, and associated mortality over a median follow-up of 5.4 years. Of note, all patients in their cohort received

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CENTRAL MESSAGE

Postoperative atrial fibrillation (POAF) portends an increased risk of long-term mortality after aortic valve replacement. The extent to which POAF directly causes morbidity and mortality remains to be determined.

perioperative and postoperative beta-blocker medication. In addition, all patients, including those receiving a bioprosthetic valve, were received routine anticoagulation with a vitamin K antagonist for at least 90 days postoperatively.

A documented episode of atrial fibrillation of 10 minutes or longer was used to define NOAF, which had an incidence of 42% during the index hospitalization and 32% in the outpatient setting, with a higher incidence in patients receiving a bioprosthetic valve, who

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