Commentary: Atrial fibrillation after aortic valve replacement: Predict, prevent, protect

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Central Message

Prolonged postoperative atrial fibrillation can be predicted after surgical aortic valve replacement. This can be used to inform patient selection for trials of preventive strategies.

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When atrial fibrillation (AF) occurs after cardiac surgery, surgeons consider the arrhythmia a nuisance rather than a complication. This reflects natural optimism. Although perioperative AF is most often self-limited, it is associated with increased risk of stroke and death, increased hospital length of stay, and increased health care costs.¹ Still, we tend not to worry too much because postoperative AF tends to resolve regardless of treatment strategy.¹

Axtell and colleagues² address a form of postoperative AF that they call “new-onset prolonged atrial fibrillation.” They define this as AF that develops within the first 30 days of surgery and then persists for at least another 30 days. Studying 720 patients with no history of AF who underwent surgical aortic valve replacement (SAVR), they identified prolonged postoperative AF in 25%. Among those who developed prolonged AF, the median duration of persistent arrhythmia was 1.6 years; however, fewer than half of patients had follow-up beyond 1 year, and it is possible that those with AF were disproportionately represented in follow-up because they were more likely to seek medical care and undergo heart rhythm assessment. Although this analysis did not demonstrate a survival difference between those with and without prolonged AF after SAVR, small sample size and limited follow-up may be responsible for this finding. The authors suggest that their data enable the prediction of AF after SAVR, and that this might, in turn, inform strategies to enhance care by preventing AF and protecting patients from complications associated with AF (eg, stroke).

PREDICT AF

The authors’ primary objective was to identify factors that predict the development of prolonged AF after SAVR.² They found that older age and left atrial enlargement were independent predictors of prolonged

postoperative AF. An individual aged 65 years with left atrial enlargement was predicted to have a 40% incidence of developing prolonged AF after SAVR. Previous studies have also identified these characteristics as risk factors for AF after cardiac surgery. The real question is, Can these data help us to improve patient care and outcomes?

PREVENT AF

If we are able to identify those at risk for prolonged AF, the next logical step is to develop strategies to prevent its occurrence. Studies of postoperative AF suggest that perioperative administration of amiodarone and beta-blockers might be useful in this regard.³ Whether such agents reduce the incidence of prolonged postoperative AF is unknown, but certainly a question worth studying. Axtell and colleagues² suggest prophylactic ablation (eg, pulmonary vein isolation or a maze procedure). There are currently no data to support such a strategy. Prophylactic surgical ablation should only be performed in the context of a clinical trial, and the analysis provided by Axtell and colleagues² can be used to guide patient selection for such a trial.

PROTECT FROM AF

Although few surgeons perform prophylactic ablation, many strongly believe in prophylactic management of the left atrial appendage (LAA). Convincing data from the

medical literature confirm that LAA occlusion is not inferior to warfarin in patients with AF.⁴ It seems reasonable to extend these findings to populations requiring surgery. Surgical LAA occlusion can be performed safely and effectively.⁵ In patients with AF, LAA management improves outcomes.⁶ There are fewer data supporting a benefit to LAA management in patients undergoing cardiac surgery with no history of AF. As with prophylactic ablation, prophylactic LAA management requires a clinical trial to determine its proper place.

PREDICT, PREVENT, PROTECT

Axtell and colleagues² have helped us to predict prolonged postoperative AF. Now we must design trials that inform strategies targeting prevention and protection.

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