

## **Associations between new-onset postoperative atrial fibrillation, anticoagulation and long-term outcome in patients undergoing surgical aortic valve replacement**

Mary Rezk<sup>1,2</sup>, Amar Taha<sup>1,3</sup>, Susanne Nielsen<sup>1,2</sup>, Lennart Bergfeldt<sup>1,3</sup>, Tomas Gudbjartsson<sup>4,5</sup>, Anders Jeppsson<sup>1,2</sup>

<sup>1</sup> Department of Molecular and Clinical Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

<sup>2</sup> Region Västra Götaland, Department of Cardiothoracic Surgery, Sahlgrenska University Hospital, Gothenburg, Sweden

<sup>3</sup> Region Västra Götaland, Department of Cardiology, Sahlgrenska University Hospital, Gothenburg, Sweden

<sup>4</sup> Department of Cardiothoracic Surgery, Landspítali University Hospital, Reykjavik, Iceland

<sup>5</sup> Faculty of Medicine, University of Iceland, Reykjavik, Iceland

### Background

New-onset postoperative atrial fibrillation (POAF) is the most prevalent arrhythmia after cardiac surgery. However, data on prognostic implications of POAF after surgical aortic valve replacement (SAVR) is limited. The aim of this study was to explore potential associations between POAF, early-initiated oral anticoagulation (OAC) and long-term outcome after SAVR.

### Material and methods

This is a retrospective, population-based study including all isolated SAVR (n=7038) and combined SAVR and CABG patients (n=3854) without a history of preoperative atrial fibrillation in Sweden from 2007 to 2017. Individual patient data about comorbidities, medications, and long-term complications was collected from four nationwide mandatory registries (SWEDEHEART, National Patient Registry, Cause of Death Registry, and Dispensed Drug Registry). Inverse Probability of Treatment Weighting (IPTW) adjusted Cox regression models were utilized to compare groups. Median follow-up time was 4.7 years (range 0-11 years).

### Results

POAF occurred in 44.5% and 50.7% of SAVR and SAVR+CABG patients, respectively. In SAVR patients, POAF was associated with increased long-term risk of death [adjusted hazard ratio (aHR) 1.21 (95% confidence interval 1.06-1.37)], ischemic stroke [aHR 1.32 (1.08-1.59)], any thromboembolism, heart failure hospitalization, and recurrent atrial fibrillation. In SAVR+CABG, POAF was associated with death (aHR 1.31 (1.14-1.51)), recurrent atrial fibrillation, and heart failure, but not with ischemic stroke or thromboembolism. OAC was dispensed within 30 days after surgery to 67.3% and 65.8% respectively of SAVR and SAVR+CABG patients with POAF. No associations between early initiated OAC and the incidence of death, ischemic stroke, any thromboembolism or major bleeding were observed in any group of patients.

### Conclusion

POAF after SAVR is associated with an increased risk of long-term mortality and morbidity, which is not reduced by early initiated OAC treatment. Patients with POAF after SAVR and SAVR+CABG need to be followed cautiously to reduce the risk.