

Statin treatment after surgical aortic valve replacement due to aortic stenosis is associated with better long-term outcome



Background / Study Objective

Previous reports have shown that statin use is associated with better survival after transcatheter aortic valve intervention (TAVI).^{1,2} However, little is known about statin use after surgical aortic valve replacement (SAVR).

We aim to utilize a large, population-based data to study

1. The association between **time-updated statin use and primary MACE** (all-cause mortality, stroke or myocardial infarction (MI) and **secondary endpoints** (each component of MACE, cardiovascular mortality, peripheral artery disease, heart failure, new aortic valve intervention)
2. Potential associations between statin use and MACE in **predefined subgroups** based on age, sex, type of surgery and comorbidities
3. Potential associations between **statin treatment intensity and MACE**

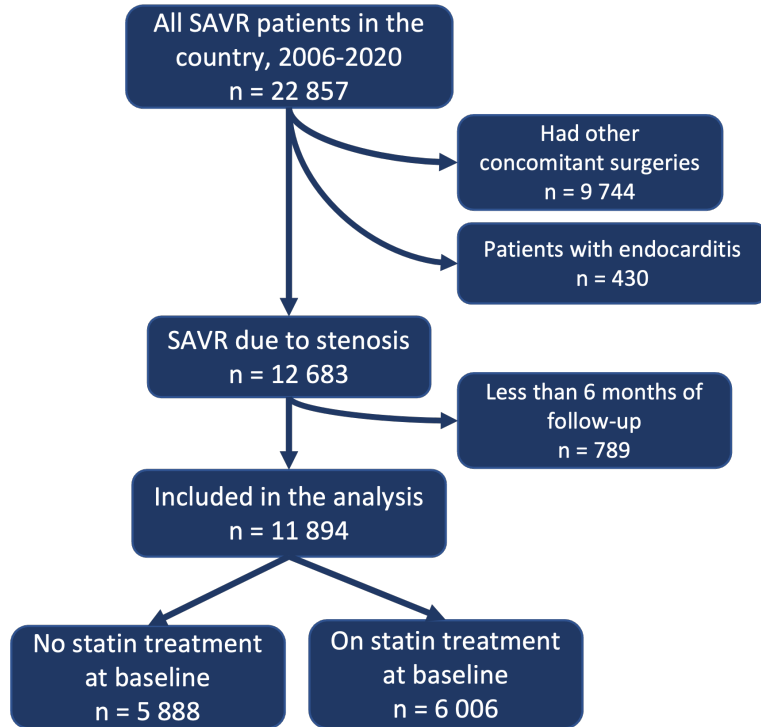
¹ Peri-Okonny PA et al. J Am Heart Assoc. 2019 Apr 16;8(8):e011529.

² Cubeddu RJ et al Am Heart J. 2023 Apr;258:27-37.



Patients

A flowchart of patient selection process.



- 11 893 patients were included 2006-2020
- 50.5% were dispensed with statins at baseline
 - 26.6% with high intensity
 - 68.4% intermediate intensity
 - 3.5% low intensity
- Median follow-up time was 5.4 (IQR 2.7-8.5, range 0-13.5) years
- Patients with statins at baseline were significantly older, more often male, had higher BMI and more comorbidities



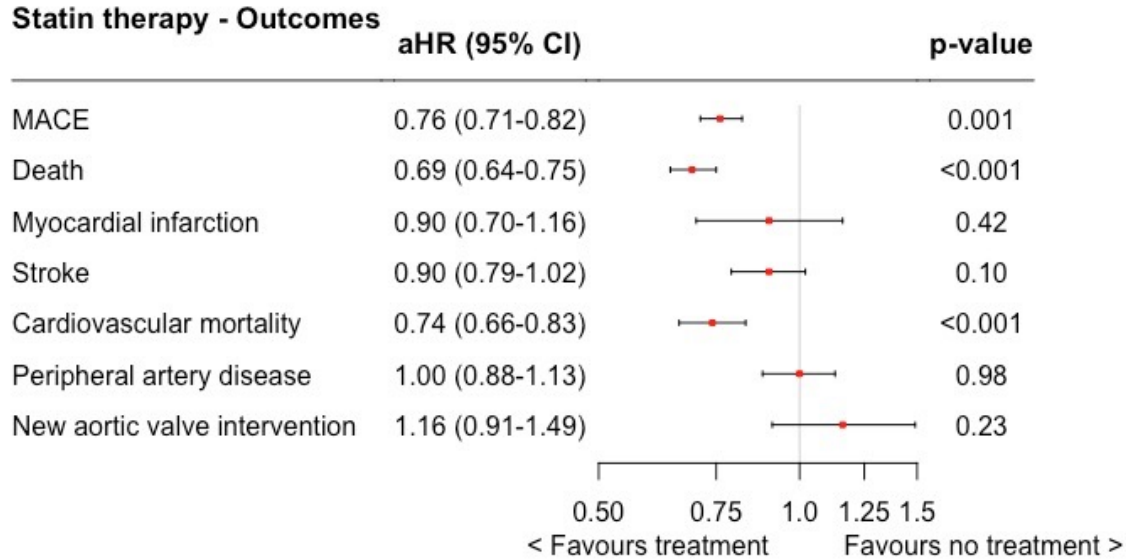
Methods

- Five mandatory national registries were integrated
 - Information on comorbidities, emigrations, time-updated secondary prevention medications, mortality, and other complications
- Baseline was set as 6 months after discharge
- Dispensed medication was updated every third month
 - two consecutive 3-month period without dispense of medication was considered off-treatment
- Predefined subgroups
 - age ($</\geq$ 75 years), sex, type of prosthesis, hypertension, diabetes, hyperlipidemia, PAD, LVEF ($</\geq$ 50%), prior MI, prior stroke and eGFR $<$ 60ml/min
- Cox regression model adjusted for
 - age, sex, type of prosthesis, year of surgery, comorbidities and other time-updated secondary prevention medications (beta-blockers, RAS-inhibitors and platelet inhibitors)

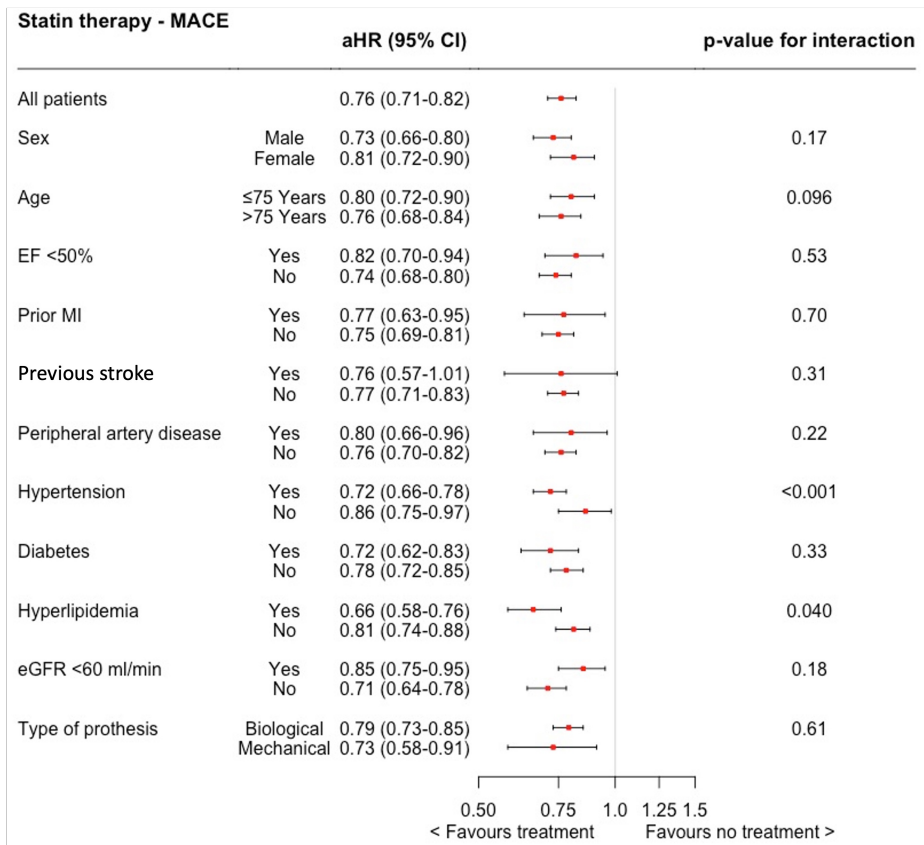


Results 1

Statin use after SAVR in patients with aortic stenosis is associated with significantly lower risk for MACE, all-cause mortality and cardiovascular mortality



Results 2



Statin therapy - MACE

Vs. no statin use	aHR (95% CI)
Low intensity	0.83 (0.65-1.05) p=0.12
Intermediate intensity	0.74 (0.68-0.80) p<0.001
High intensity	0.86 (0.77-0.97) p=0.011

- **Ongoing statin therapy was associated with significantly lower risk for MACE in all predefined subgroups**
- **Patients with hypertension and hyperlipidemia had even stronger associations between statin treatment and lower risk for MACE**
- **Intermediate and high intensity statins were associated with reduced risk for MACE**

Conclusion

1. Ongoing statin treatment after isolated SAVR due to stenosis is associated with **a reduced risk for MACE, all-cause mortality and cardiovascular mortality**
2. Statin treatment is associated with **a reduced risk for MACE in all investigated subgroups of patients**
3. Intermediate and high intensity statins were associated with **a reduced risk for MACE and all-cause mortality**

Ongoing statin treatment may be beneficial for patients after isolated SAVR

