Clinical Summary:

Treatment Patterns, Disparities, and Management Strategies Impact Clinical Outcomes in Patients with Symptomatic Severe Aortic Regurgitation

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Objective

This study aimed to evaluate the practice patterns and drivers of symptomatic severe aortic regurgitation (ssAR) patients receiving SAVR treatment, as well as assess the association between individual cardiologist surgical treatment rates and their impact on 1-year survival.

Key Points

- Despite a class I indication for SAVR in the most recent ACC/AHA guidelines, only 26% of ssAR patients in this cohort underwent treatment within a year of diagnosis
- Patients who failed to undergo surgery had a 2.7-fold increased risk of mortality compared to those who did receive SAVR (P <0.0001)
- The patient's primary cardiologist was a strong determinant of receiving SAVR, particularly for patients with reduced LVEF, even after controlling for potential confounders

Methods

- This study included patients with newly diagnosed ssAR between 2008 and 2016 within Optum's integrated delivery network
  - Newly diagnosed ssAR patients had either no documented history of severe AR within the year prior to their diagnosis or had severe AR, but no mention of symptoms in the 6 months prior to their diagnosis
  - 4,608 ssAR patients were identified and evaluated in this analysis
- Managing cardiologists for each ssAR patient were identified using unique provider identification numbers and the reported physician specialty
  - Primary cardiologists were also placed into ranked tertiles based on the propensity of their patients to be treated with SAVR within 1 year of ssAR diagnosis
- The primary outcome of interest in this study was the utilization of SAVR in the year following ssAR diagnosis
  - The secondary outcome of interest was all-cause mortality through 1 year after ssAR diagnosis

Results

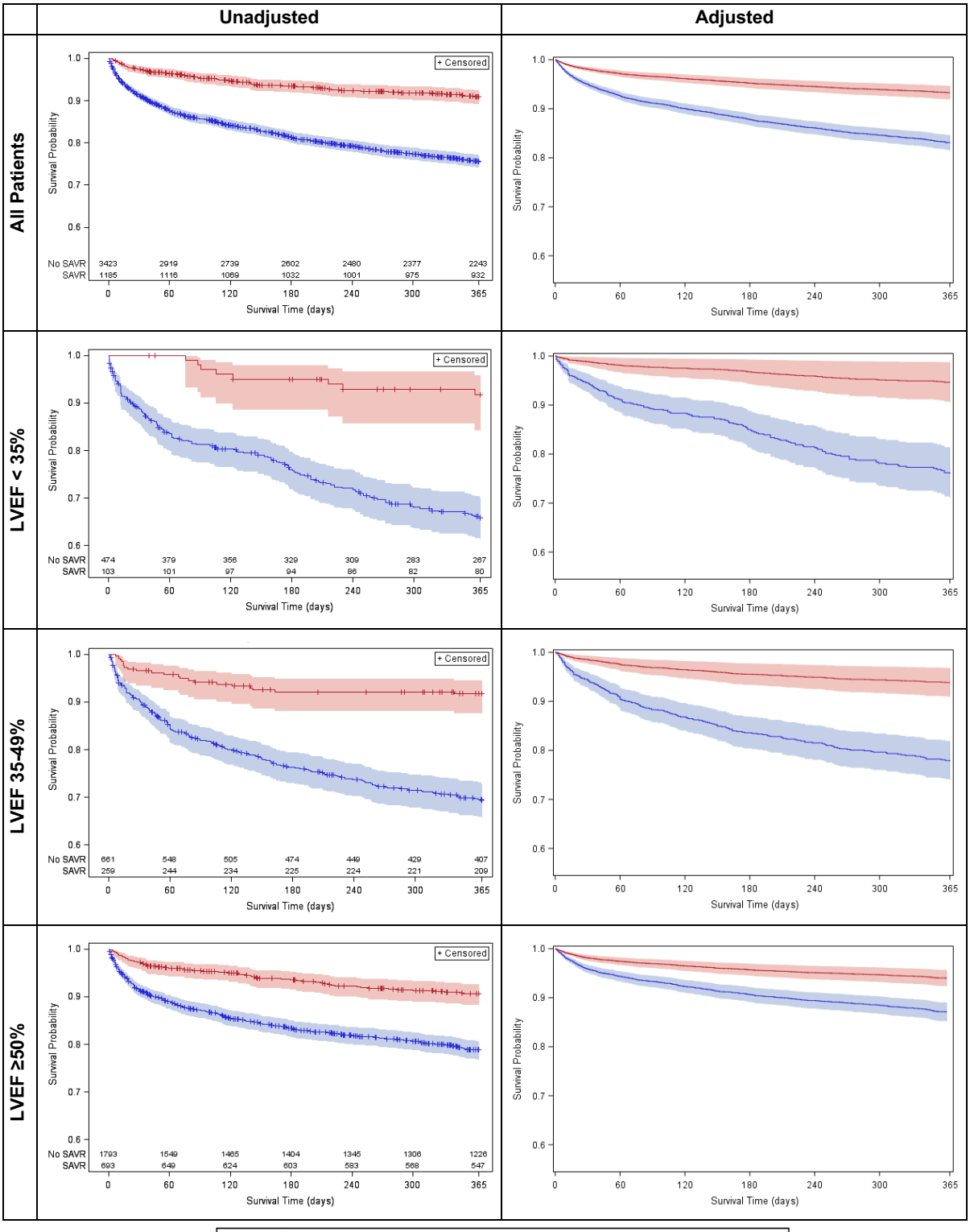
- In the full cohort, 1,185 (25.7%) received SAVR by 1 year after diagnosis
  - Unadjusted 1-year survival for patients undergoing SAVR was 91.3% vs. 76.5% of patients who did not undergo SAVR
  - After adjustment, patients who underwent SAVR had a 62% reduction in risk of 1-year mortality compared to patients who did not undergo surgery (adjusted HR 0.38, confidence interval [CI] 0.23-0.48, p<0.0001)
  - Trends in survival curves with and without SAVR were seen at 1 year overall and when stratified by LVEF group (Figure 1)
- Using multilevel, multivariable, cause-specific models, women and patients >80 years old were found to be treated significantly less likely [hazard ratios (HR) 0.79 (95% CI: (0.69-0.90) and 0.28 (0.22-0.37), respectively]
- Patients with concomitant moderate/severe aortic stenosis [1.70 (1.43-2.03)], bicuspid aortic valve disease [1.33 (1.13-1.56)], and endocarditis [2.70 (1.04-3.57)] were more likely to be treated
- Comparing observed to expected SAVR rates, patients managed by the cardiologists in the lowest SAVR-referring tertile were treated at a lower rate than would be expected given the patients' risk characteristics (4.7% observed vs. 22.3% expected)
  - Multi-level, multivariable modeling also found the receipt of SAVR to be strongly influenced by the patient's primary cardiologist
  - Relative influence of the primary cardiologist in receipt of SAVR was most variable for LVEF <35% vs. 35-50% vs. >50%

Conclusions

- Significant disparities in the treatment of ssAR patients were identified, specifically women, older patients, and patients managed by cardiologists with a lower SAVR treatment rate. These gaps should be addressed to level the quality of care delivered to all ssAR patients.

Edwards

Figure 1. Unadjusted and adjusted Kaplan-Meier survival curves with and without SAVR at 1 year overall and stratified by LVEF group



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