

Cardiac Valve Prosthesis Choice for Left Sided Infective Endocarditis in Medicare Patients

Objective: To compare the outcomes between bioprosthetic and mechanical cardiac valve choice for aortic and mitral valve infective endocarditis using Medicare data.

Methods: Medicare MedPar data from 2009 to 2019 was queried for patients with de novo aortic or mitral native valve endocarditis who underwent isolated surgical aortic valve replacement (AVR) or mitral valve replacement (MVR). Bioprosthetic valves were compared to mechanical valves and analyses were conducted separately for the aortic and mitral position: bioprosthetic AVR (bAVR) versus mechanical AVR (mAVR) and bioprosthetic MVR (bMVR) versus mechanical MVR (mMVR). Propensity score matching was used to account for measured confounders. The primary outcome was 5-year overall survival analyzed using restricted mean survival time (RMST); secondary outcomes were the 5-year cumulative incidences of valve reoperation, CHF readmission, recurrent infective endocarditis, cerebral hemorrhage, gastrointestinal bleeding, other major bleeding, and ischemic stroke analyzed using subhazards regression with death as a competing risk.

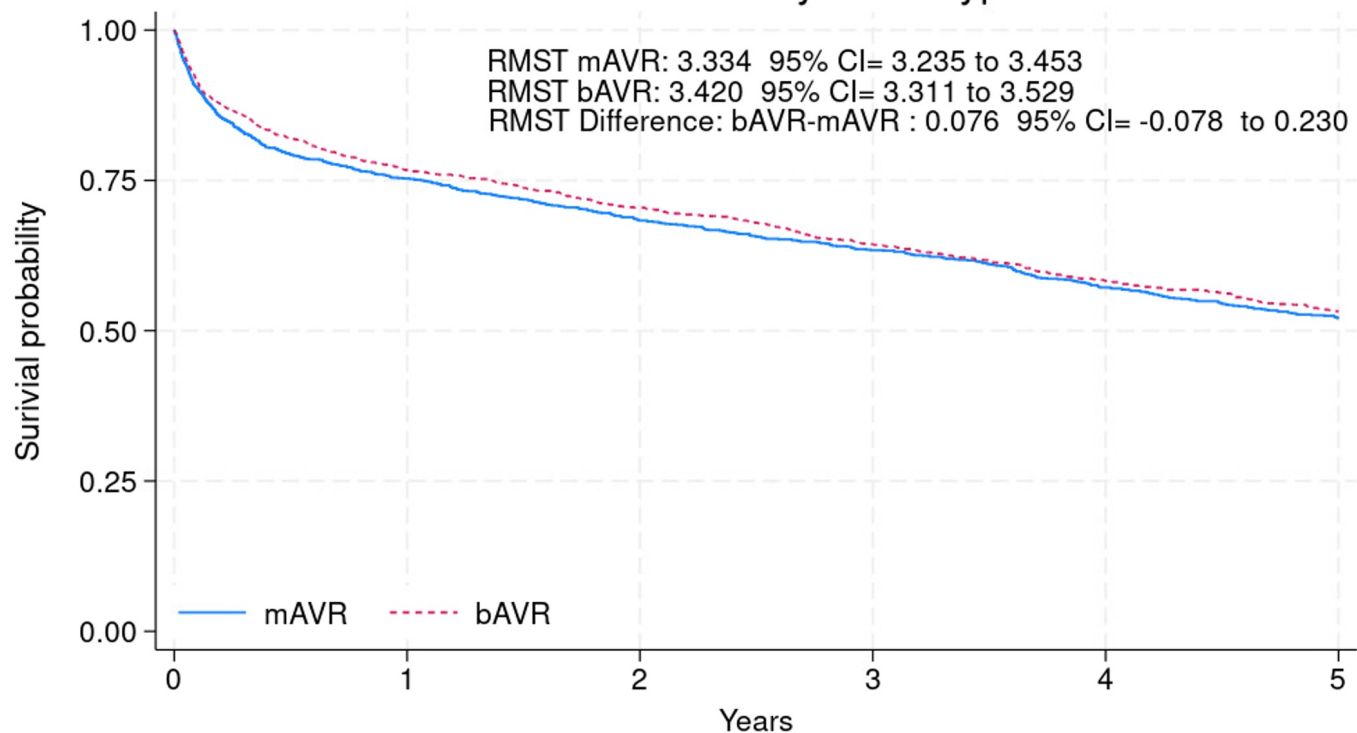
Results: 9,207 patients met inclusion criteria: 1,414 underwent mAVR versus 3,966 who underwent bAVR and 1,186 underwent mMVR versus 2,641 who underwent bMVR. The mean age was 66 years old and 65% of patients were male. Propensity score matching yielded 1,387 patients in each AVR group and 1,139 in each MVR group. Comparing mAVR to bAVR, there was no difference in overall survival with 5-year RMSTs of ~3.3 years (Figure A); rates of GI bleeding were higher for mAVR (14% vs 10%) while there was no significant difference in CHF readmission, recurrent endocarditis, cerebral hemorrhage, other bleeding, ischemic stroke, or valve reoperation (~4.5%). Comparing mMVR to bMVR similarly there was no difference in overall survival (RMST ~2.8 years) (Figure B); with regards to secondary outcomes there was no difference in recurrent endocarditis, ischemic stroke, or cerebral hemorrhage, however mMVR had a slightly lower rate of valve reoperation (1.5% vs 1%), and higher rate of CHF readmission (15% vs. 10%), GI bleeding (24% vs 19%), and other bleeding (30% vs 25%).

Conclusion: Among Medicare patients with isolated left sided infective endocarditis, valve prosthesis choice did not affect overall survival or reinfection rates, while rates of reoperation were low and not clinically different by prosthesis type. Bleeding complications were higher among mechanical valves.

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A

Overall Survival by Valve Type

**B**

Overall Survival by Valve Type

