

Comparing Complication Rates of Transcatheter Aortic Valve Replacement to Surgical Aortic Valve Replacement

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Background/Objective: Transcatheter aortic valve replacement (TAVR) and surgical aortic valve replacement (SAVR) are the two procedures used to treat severe symptomatic aortic stenosis. One of the most feared outcomes of both procedures is stroke. Conduction abnormalities and arrhythmias after TAVR are relatively common, but few studies have been done comparing the rate of these events between TAVR and SAVR. The objective of our study is to find if there are any differences between the rates of stroke, conduction abnormalities, and arrhythmias between patients that have undergone TAVR and patients that have undergone SAVR.

Methods: The CRC/Sidus Real World Evidence Cardiology Dataset was used to obtain samples for this project. Patients who underwent TAVR and SAVR were identified using CPT codes. These two cohorts of patients were tracked for complications between 0 to 30 days after the procedure and between 0 days to 1 year after the procedure using ICD-10 codes.

Results: Patients who underwent TAVR (n=3621) were much more likely to have conduction disorders and arrhythmias both in the 0-30 day range and 0 days-1 year range after the procedure compared to patients who underwent SAVR (n=2137). Cerebral infarction and transient cerebral ischemic attack rates were also higher in the TAVR group. Mortality rates for TAVR were lower than mortality rates for SAVR, both 30 days and 1 year after the procedure.

Conclusion/Impact: TAVR has revolutionized aortic valve replacement and allowed many patients with aortic stenosis (many of whom are at high surgical risk) a minimally invasive option to improve their quality of life. Finding ways to reduce the rates of stroke, arrhythmias, and conduction abnormalities; for example, through improved devices and techniques, and improved anti-thrombotic therapy, is extremely important as TAVR becomes more and more widely utilized.