

VA hospitals favor mitral valve repair vs. replacement

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Over the last decade, repair of the mitral valve (MV) has become widely favored over its replacement. Data available from such sources as the Society of Thoracic Surgeons Adult Cardiac Surgery Database (STS ACSD) have documented this trend at non-governmental hospitals, but there is little known about mitral surgery practice in the largest federal health system in the US - the Veterans Affairs (VA) Health System. In a presentation at the 96th AATS Annual Meeting, Faisal G. Bakaeen, MD, presents data from more than 4,100 mitral valve surgeries showing that mitral valve operations are performed with low mortality in the VA and that the percentage of repair vs. replacement surgeries has increased significantly since 2001. However, despite the survival advantage for mitral repair in primary mitral regurgitation, the rate of valve repair was quite variable among the VA centers and offers an opportunity for system-wide quality improvement.

Little is known about [mitral valve](#) (MV) surgical outcomes within the largest US federal [health system](#) - the Veterans Administration (VA) Health System. At the 96th AATS Annual Meeting, data presented from 40 VA cardiac surgery centers reveal that although MV repair rates increased from 48% in 2001 to 63% in 2013, a wide variability exists in repair rates among medical centers. This is especially important because MV repair mortality rates were significantly lower in patients with primary degenerative disease.

"This large multi-center study adds further evidence to support the use of MV repair over replacement in patients with degenerative MV

disease. Despite the benefits associated with MV repair, the rate of valve repair utilization varied widely among centers and presents an opportunity for education and quality improvement", explained lead author Faisal G. Bakaeen, MD, Department of Surgery, Baylor College of Medicine, The Michael E. DeBakey VA Medical Center (Houston, TX), and the Department of Thoracic and Cardiovascular Surgery, Cleveland Clinic (Cleveland OH).

The investigators found that between 2001 and 2013, 4,165 mitral valve surgeries were performed, including 2,408 MV repairs and 1,757 MV replacements at 40 VA centers. The overall MV repair rate increased from 48% of the total number of MV surgeries to 63% in 2013. "The increased rate of MV repairs in VA hospitals mirrors the trend revealed by analyses of the STS ACSD," commented Dr. Bakaeen. "These findings indicate that the introduction and adoption of novel surgical procedures occur in tandem at VA and non-VA facilities. This is expected because all VA cardiac programs are affiliated with academic centers and some share faculty and educational programs with their university affiliates."

The study highlighted other advantages of MV repair compared to MV replacement, including fewer complications around the time of surgery and shorter hospital stays. MV repair also showed some survival advantage. While some differences between surgical groups were sometimes not statistically significant (e.g. unadjusted and adjusted 30-day operative mortality rates), mortality rates for MV repair were significantly lower at both 180 days (2.5% vs. 5.0%) and 365 days (3.0% vs. 5.7%) in patients with primary degenerative disease. After 10 years, mortality was marginally lower for MV repair.

When the investigators examined annual MV procedural volume per medical center, they found it varied widely: from 0 to 29, with a median of 7. The median number of annual MV repairs ranged from 0 to 21,

with a median of 4 per center.

Other studies have suggested that MV surgery volume is a significant predictor of greater MV repair use and better mitral surgery outcomes. In fact, some reports have specified that 40 MV repairs per year should be the minimum number performed annually to maintain a high level of care. This report, however, found that none of the VA centers met this 40 case per year threshold and, in fact, center volume accounted for only 19% of the total variation in facility-level MV repair.

Dr. Bakaeen noted that the 40 case per year threshold may not be applicable to the VA system. "VA hospitals are not typical low-volume community hospitals. The shared-faculty model and educational collaboration that exists between some VAs and their academic affiliates may help mitigate these hospitals' low-volume status, which would explain their good MV outcomes." Nevertheless, he suggests that determining why MV repair rates are very low in some VA hospitals presents an opportunity for quality improvement.

More information: "Mitral Valve Surgery in the US Veterans Administration Health System: 10-Year Outcomes and Trends," by Faisal G. Bakaeen, A. Laurie Shroyer, Marco A. Zenati, Vinay Badhwar, Vinod H. Thourani, James S. Gammie, Rakesh M. Suri, A. Marc Gillinov, Joseph F. Sabik III, Danny Chu, Laura A. Graham, Mary T. Hawn, G. Hossein Almassi, Lorraine D. Cornwell, Frederick L. Grover, Todd K. Rosengart, Shuab Omer. Presentation at the 96th AATS Annual Meeting, May 14-18, 2016, Baltimore, MD, during the Plenary Scientific Session on May 17, 2016. aats.org/annualmeeting

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