

Transcatheter aortic valve implantation shows promise in patients with severe aortic stenosis

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German researchers report success with transcatheter aortic valve implantation (TAVI) in patients with low-flow, low-gradient aortic stenosis—a special form of aortic stenosis that is difficult to treat. Results published in the April issue of *Catheterization and Cardiovascular Interventions*, the peer-reviewed journal of the Society for Cardiovascular Angiography and Interventions (SCAI), show that while all-cause mortality was high within the first six months, TAVI significantly improved heart function and exercise capacity in surviving patients.

While low-flow, low-gradient aortic stenosis occurs in only 5% of [patients](#) with aortic stenosis, treatment of these patients remains challenging. Previous research shows a more discouraging prognosis for patients receiving conservative therapy and higher mortality following surgical [aortic valve](#) replacement. Over the past few years, TAVI has been used as an alternative treatment for patients with severe aortic stenosis or in those deemed a high surgical risk.

A team led by Dr. Michael Gotzmann, with the University-Hospital Bergmannsheil in Bochum, Germany performed TAVI in 167 consecutive patients with severe aortic stenosis and high operative risk between June 2008 and December 2010. Of those participating, 15 patients had low-flow, low-gradient aortic stenosis and the remaining 152 patients were part of the control group. Interventionists used the Medtronic CoreValve prosthesis 18-F generation for this study.

Within the first 6 months following TAVI, 25 patients died—13% without and 33% with low-flow, low-gradient aortic stenosis. These patients had a higher all-cause mortality following TAVI compared to patients without this severe form of disease.

However, the surviving 10 patients with low-flow, low-gradient aortic stenosis reached the 6-month mark, and after nearly a year post-procedure no additional death, myocardial infarction, or stroke occurred.

Furthermore, the surviving patients displayed a significant improvement in heart function and exercise capacity. "While there is a high mortality rate in this difficult-to-treat patient group, there is symptomatic benefit for patients undergoing TAVI therapy," said Dr. Gotzmann. The authors suggest the high [mortality](#) rate could be due to pre-existing conditions that place patients at greater risk post-procedure. "Further multi-center studies in larger patient populations are needed to understand the potential benefit of TAVI in patients with low-flow, low-gradient aortic stenosis," concludes Dr. Gotzmann.

More information: "Clinical Outcome of Transcatheter Aortic Valve Implantation in Patients with Low-Flow, Low Gradient Aortic Stenosis." Michael Gotzmann, Michael Lindstaedt, Waldemar Bojara, Aydan Ewers and Andreas Mügge. *Catheterization and Cardiovascular Interventions*; Published Online: August 5, 2011 ([DOI: 10.1002/ccd.23240](#)) Print Issue: April 2012.

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