

Study examines survival following repair of failed bioprosthetic aortic valves

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In an analysis of about 460 patients with failed bioprosthetic aortic valves who underwent transcatheter valve-in-valve implantation, overall survival at one year was 83 percent, with survival associated with surgical valve size and mechanism of failure, according to a study in the July 9 issue of *JAMA*.

Surgical aortic valve replacements increasingly use bioprosthesis (composed of biological tissue) [implants](#) rather than mechanical valves. Owing to a considerable shift toward bioprosthesis implantation, it is expected that there will be an increase in the number of patients with degeneration of these types of valves. Treatment of patients with failed bioprostheses is a clinical challenge; although reoperation is considered the standard of care, these patients are frequently elderly and have other medical conditions, and repeat cardiac surgery can pose significant illness and risk of death. Transcatheter aortic valve-in-valve implantation is a less invasive approach, however a comprehensive evaluation of survival after the procedure has not previously been performed, according to background information in the article.

Danny Dvir, M.D., of St. Paul's Hospital, Vancouver, Canada, and colleagues evaluated survival of 459 patients after [transcatheter](#) valve-in-valve implantation inside failed surgical bioprosthetic valves using a multinational registry. The patients (average age, 78 years) underwent implantation between 2007 and May 2013 at 55 centers.

Reasons for bioprosthesis failure were stenosis (narrowing of the valve opening; 39.4 percent), regurgitation (backflow of blood through the orifice of the valve due to imperfect closing; 30.3 percent), and combined stenosis and regurgitation (30.3 percent). The overall 1-year survival rate was 83.2 percent.

Patients in the stenosis group had worse 1-year survival (76.6 percent) in comparison with the regurgitation group (91.2 percent) and the combined group (83.9 percent). Similarly, [patients](#) with small valves (? 21 mm) had worse 1-year survival (74.8 percent) compared with larger valves.

"Thorough assessment of candidates for valve-in-valve implantation is a key step to obtain optimal results. The current analysis highlights the need for meticulous evaluation of bioprosthesis mechanism of failure before attempting a valve-in-valve procedure," the authors write.

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