TAVI is safe alternative to redo cardiac surgery

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TAVI is a safe alternative to redo cardiac surgery for failing bioprosthetic valves, according to research presented at the ESC Congress today by Dr. Spyridon Katsanos from the Netherlands. The findings suggest that transcatheter aortic valve implantation (TAVI) is a treatment alternative for inoperable elderly patients and high risk patients with failing bioprostheses.

Use of bioprosthetic heart valves has dramatically increased (from 18% in 1991 to 59% in 2003), mainly in older patients with comorbidities. This is due to the increased risk of bleeding complications associated with lifelong use of anticoagulation for mechanical prostheses.

But structural valve deterioration is one the main complications associated with bioprosthetic heart valves. In large registries including more than 300 000 patients undergoing aortic valve replacement the reoperation rate for patients receiving a bioprosthesis was 3.1% at 11-13 years of follow-up compared with 2.3% reoperation rate for recipients of an aortic mechanical prosthesis.[1]

Dr Katsanos said: "Reoperation for failed bioprostheses, also called redo cardiac surgery, is associated with increased rates of mortality and morbidity. Less invasive treatments have emerged such as transcatheter valve-in-valve implantation, a type of TAVI operation which is a safe therapeutic option for patients with failed bioprostheses and contraindications for surgery. But until now there has not been a direct comparison of survival between high risk patients treated with either

reoperation or a TAVI operation."

The current study assessed the prognosis of patients with failed bioprosthetic aortic and mitral valves and high predicted operative risk who underwent transcatheter valve-in-valve intervention with the Edwards Sapien (23 or 26 mm) valve. They were compared with a historical cohort of patients who underwent elective redo cardiac surgery for failing mitral and aortic prostheses and failing mitral valve annuloplasty.

The TAVI group (age 80±2 years, 25% men) included 12 patients with failing aortic bioprostheses, 2 with failing mitral bioprostheses and 2 with failed mitral valve annuloplasty. The redo cardiac surgery group (age 70±1 years, 50% men) had 15 patients with failing aortic bioprostheses and 1 with failing mitral bioprostheses. The reason for valve dysfunction was stenosis in 11 patients, regurgitation in 14 patients and mixed pathology in 7 patients. Patients with endocarditis were excluded. Both groups had similar operative risk, New York Heart Association functional class, and left ventricular ejection fraction.

After a median follow up of 21 (range 7-44) months, 10 (30%) patients died. As shown in the figure, 3-year survival did not differ between patients treated with transcatheter valve-in-valve implantation and those treated with redo cardiac surgery (log-rank p=0.939).

Dr Katsanos said: "We have shown for the first time that the long term survival of high risk patients with failing bioprostheses treated with transcatheter valve-in-valve implantation is comparable to high risk patients treated with redo cardiac surgery."

He concluded: "Transcatheter valve-in-valve implantation is a minimally invasive procedure performed through transfemoral or transapical approach under fluoroscopic guidance and does not require sternotomy

and cardiopulmonary bypass. Elderly patients deemed not operable and also high risk patients with failing bioprostheses may have a treatment alternative to redo cardiac surgery."

More information: 1. Schelbert EB, Vaughan-Sarrazin MS, Welke KF, Rosenthal GE. Valve type and long-term outcomes after aortic valve replacement in older patients. Heart. 2008;94(9):1181-1188.

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