

10-year's experience of aortic valve replacement with the Mitroflow bioprosthesis

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Objective : Recent reports raised concerns on the durability of the Mitroflow aortic bioprosthesis, especially for the LXA-model without anticalcification treatment. This study reflects a single-center experience with the Mitroflow for aortic valve replacement (AVR)

Method : From June 2003 to December 2014, 634 patients underwent AVR with the Mitroflow prosthesis. The study focused on 510 consecutive patients that received the LXA-prosthesis (2003-2012), by addressing the end-points survival and prosthesis durability, with structural valve degeneration (SVD) defined by a mean transprosthetic gradient > 30 mmHg at echocardiography and/or need for reoperation.

Results : The mean patient age was 76 ± 6 years, with 14% < 70 y and 23% > 80 y. Valve sizes 23 and 25 were used in 70%, and 19 and 21 in only 18%, avoiding patient-prosthesis mismatch (PPM) in 91%. The mean follow-up time was 5.0 ± 3.2 years, cumulating a total of 2152 patient-years (max 11.6 y). The 1-, 5-, and 8-year patient survival was $86 \pm 2\%$, $67 \pm 3\%$, and $47 \pm 3\%$ respectively. Freedom from SVD was $99 \pm 1\%$ and $88 \pm 3\%$ at 5 and 8 years. Reoperation for SVD was performed in 3.3%, including redo-AVR (9) or TAVI (6) for cusp rupture (6) and stenotic calcified degeneration (9). Prosthetic explantation for endocarditis was done in 3 patients. No specific patient- nor prosthesis-related factors significantly affected valve durability. SVD was not observed with the more recent Mitroflow model-DLA with phospholipid reduction therapy (used since May 2012), within a maximal follow-up time of 2.8 y.

Conclusion : Despite lacking anticalcification treatment, the LXA-generation Mitroflow bioprosthesis offered a reliable aortic valve substitute in patients older than 70 years. The low occurrence of PPM, enhanced by its specific design and a consistent supra-annular implantation technique, might have improved the valve durability. Further results with the Mitroflow model-DLA have to be awaited.