

## Standardization of bicuspid valve repair with aortic annuloplasty provides similar results to tricuspid aortic valve repair

C. Le Breton, E. Lansac, N. Amabile, N. Khelil, A. Berrebi, L. Mankoubi, M. Noghin, M. Debauchez, J.L. Monin

MONTsouris MUTUALIST INSTITUTE, Paris, France

**Funding Acknowledgement:** Type of funding source: None

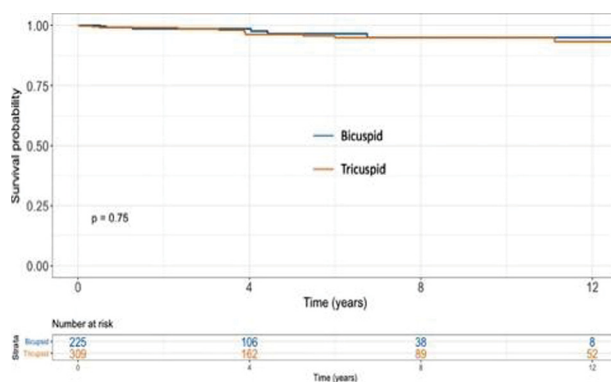
**Background:** Bicuspid aortic valves (BAV) represent the main cause of severe dystrophic aortic insufficiency in young patients and are mostly replaced with high rates of valve-related events and altered quality of life in case of mechanical prosthesis. Valve repair is now recommended for root aneurysm and tricuspid aortic valves (TAV) when feasible. However, concerns remain regarding the long-term durability of BAV repair, compared to TAV.

**Purpose:** Our objective is to compare the long-term results of repair between TAV and BAV, in consecutive patients operated on with a standardized approach according to each phenotype of the dystrophic ascending aorta.

**Methods:** Data were prospectively collected into the multicenter international AVIATOR registry (AorticValve repair InternATIOnal Registry). Between 2003 and 2019, according to ascending aorta phenotypes, 226 patients with BAV and 309 patients with TAV underwent either isolated valve repair with external ring annuloplasty (26,2%), or root remodeling with external ring (59,4%), or a supra-coronary graft with external ring (14,4%).

**Results:** Cusp repair was performed in 95,1% patients in the BAV group and in 63,8% in the TAV group. The 30-day operative mortality was 0,93% (n=5). Mean follow-up was  $5,5 \pm 4,4$  years. The actuarial survival rate at 12 years was 93,2% in the BAV group and 87,8% in the TAV group ( $p=0,14$ ). Freedom from reoperation at 12 years was similar between groups being 94,9% for bicuspid and 93,2% for tricuspid ( $p=0,75$ ). Freedom from major adverse valve-related events at 12 years was 82,8% and 82,9% in BAV and TAV groups respectively ( $p=0,17$ ). At 12 years, freedom from AI  $\geq$  Grade 2 or  $\geq$  Grade 3 was 68,7% and 94,3% for BAV and 76,5% and 94,7% for TAV group, with no significant difference (respectively  $p=0,16$  and  $p=0,92$ ).

**Conclusion:** Aortic valve repair with a standardized approach adapted to the aorta phenotype provides excellent long-term results with a low rate of valve-related events. Similar results were achieved between BAV and TAV patients.



freedom from reoperation for BAV and TAV