

Long-Term Outcome of Aortic Valve Replacement (AVR) with Stentless Valves

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Objectives: The presence of stent and sewing ring reduces effective orifice area of bioprosthetic valves. Valves without stents and sewing-ring (stentless valves) were developed in order to overcome this hemodynamic problem.

Methods: From 1996 to 2010, 110 females and 129 males underwent AVR with Freestyle stentless valves. Mean age was 71.6 years. Valve size ranged between 19-29 mm (in only seven patients, 3%, valve size was 19). Thirty patients (12.6%) had aortic aneurysm and 31 (13%) underwent repeat operations. Concomitant Coronary Artery Bypass Grafting (CABG) was performed in 108 (45%). The subcoronary and root replacement techniques were used in 177 (74%) and 62 (26%) patients, respectively.

Results: Early mortality was 6.3%. Mortality in patients 65 years of age or younger was 2.1% (one of 48), between 65-80 it was 6.2% (8 of 153) and in patients older than 80 early mortality was 15.8% (6 of 38). Age over 80 was also the only independent predictor of operative mortality (O.R. 5.71, 95% CI 1.43-22.73). Mean follow-up was 9.7 years and 8 year survival was 70+5%. Survival of patients 65 years or younger, between 65-80 and above 80 were 64+13%, 80+5% and 40+12% respectively, $p < 0.001$. Independent predictors of decreased survival (Cox Model) were: age over 80 (H.R. 4.69, 95% CI 2.41-9.17), repeat operation (H.R. 3.94, 95% CI 1.93-8) and root replacement (H.R. 2.21, 95% CI 1.11-4.41).

Conclusions: Late results of AVR with stentless valves are good, especially in primary AVR operations in patients between 65 and 80 years of age. Better results were achieved with the subcoronary technique.