Long-Term Clinical and Echocardiographic Follow-Up of the Freestyle Stentless Aortic Bioprosthesis – the Tel Medical Center Experience

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Disclosure

- None

Background: Stentless aortic Bioprosthesis were designed to provide improved hemodynamic performance and potentially better survival.

Aims: Outcomes of patients after aortic valve replacement with the Freestyle stentless bioprosthesis in the Tel Aviv Medical Center followed for ≤15 years

Between **1997 and 2011** - **268** patients underwent primary aortic valve replacement with a Freestyle Medtronics stentless bioprosthesis.

Age (years)	71.0±9.3
Sex Male	58%
Renal failure (Creatinine>1.7%)	11%
Diabetes Mellitus (%)	27%
LV ejection fraction (<35%)	6%
Logistic EuroScore‡	11±10.2
Charlson Score‡	4.2±1.5
Ejection fraction (%)	51.9±12.1
Peak trans-aortic gradient (mmHg)	75.0±29
Mean trans-aortic gradient (mmHg)	43.4±17
Aortic valve area (cm^2)	0.78±0.3
Systolic pulmonary pressure (mmHg)	37.1±14.7
≥Moderate Mitral regurgitation (%)	10

211 pts. (79%) - subcoronary position

146 pts. (54%) - concomitant CABG

38 pts. (14%) - bicuspid valve

13 pts. (5%) - previous AVR

- Mean follow-up of 4.9±3.1 years.

- At 3 months follow up (p <0.0001)
  Peak gradient - 22.8±9.6mmHg
  Mean gradient - 12.1±5.4mmHg

- Early mortality - 4.1% (n=11) p-0.009
  - Before 2006 – the first 100 patients

    Mortality of 8 patients (8.0%)
  - After Jan. 2006 - the last 168 patients

    Mortality of 3 patients (1.8%)

- 5-year survival rates
  - Overall rates - 85±2.5%; p = 0.0009

    Before 2006 - 76.0±4.4%

    After January 2006 - 92.3±2.3%

- All 21 octogenarians operated after January 2006 survived surgery, with excellent 5-year survival (85.1±7.9%)

- Six patients required reoperation during follow-up: 5 due to structural valve deterioration and endocarditis in one.

- Discussion:
  - AVR with the Freestyle bioprosthesis provides good long-term hemodynamic and clinical outcomes, even in octogenarians.
  - Valve calcification is the major (and rare) mode of valve deterioration leading to reoperation in these patients.

- Strengths:

  The acquisition of wide clinical, as well as echocardiographic data with up to 15 years of follow up after surgery is a significant strength of our study.