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Early and Mid-term Functional Hemodynamic Evaluation of the St Jude Medical Regent 17-mm Aortic Valve Mechanical Prothesis

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Objective:
The aim of the present study is to report the early and mid-term clinical and hemodynamic results of a prospective trial investigating the clinical performance of the St Jude Medical Regent 17-mm mechanical aortic valve prosthesis (SJMR-17).

Materials and Methods:
Between January 2000 and September 2008, 20 patients with aortic valve stenosis underwent first time AVR with a SJMR-17. There were 18 females and two males. Mean age was 69.2±7.3 years and mean BSA was 1.68±0.2 m2. The mean follow-up was 18.7±9.2 months (range 10-32 months). All patients were monitored with serial echocardiograms; the first study was performed preoperatively, subsequent controls were at 2 months, 6 months, and within 1 year, respectively. All survivors underwent Dobutamine stress test at 1 year after surgery.

Results:
There was one death. At six months follow-up the mean NYHA FC class was 1.3±0.6 significantly lower than preoperatively 2.75±0.86 ($p<0.0001$). The peak and mean transprosthesis gradients were 29±6.8 and 17.5±4.5 mmHg respectively, significantly lower than preoperatively. Left ventricular mass (gm) and indexed left ventricular mass (gm/m2) were 191±23.8gm/m^2 and 114.5±10.6gm/m^2 significantly lower than preoperative values 258±43gm ($p<0.0001$) and 157±27.7gm ($p=0.00003$).The M-TPG correlated well with the LVM reduction ($p=0.033$). During DSE the P-TPG and M-TPG increased significantly to 73.8±17.7mmHg and 37±10.7mmHg respectively, significantly higher than at basal state. Differently, the EOA, EOA and DVI increased during DSE but not significantly versus the values measured at rest. During the same period of time 37 patients underwent aortic valve replacement with annulus enlargmenet by employing a St Jude Regent Nr. 19. There were non-differences compared to St Jude Nr. 17 at follow up.

Conclusions:
The SJMR-17 prosthesis might be employed with satisfactory clinical and hemodynamic outcome in patients with small aortic annulus, especially in elderly patients, as an alternative to other valves' choice or alternative surgical strategies such as annulus enlargement.