

## **Follow-up of Patients with small Aortic Root Receiving St. Jude Medical Regent Mechanical Prosthesis**

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**Background:** The St. Jude Medical Regent mechanical valve is a next generation bileaflet aortic prosthesis with better effective orifice area as compared to other bileaflet/monoleaflet valves of the same size. This study reports the early clinical experience with this prosthesis in patients with small aortic root (aortic annulus  $\leq 21$  mm).

**Methods:** Sixty four patients (30 men, mean age  $33.3 \pm 12.9$  years) with small aortic root undergoing valve replacement with Regent valve were included in this study. Clinical and echocardiographic follow-up was done in all patients.

**Results:** The etiology of aortic valve disease was rheumatic (52), congenital (6) and degenerative (6). The associated procedures included mitral valve replacement (49), tricuspid valve repair (11), coronary artery grafting (2) and VSD closure (1). The prosthesis size used were 19 (35), 21 (21) and 17 (7). The ratio of effective valve area and patient's body surface area was  $1.14 \pm 0.21$ , with no patient having patient prosthesis mismatch (PPM). Two patients died in immediate post operative period due to septicemia and 3 late post operatively, one each due to stroke, intracerebral hemorrhage and mitral valve thrombosis. Follow-up ranged from 6 to 44 (mean 21) months. NYHA class improved from a mean of  $2.7 \pm 0.6$  to  $1.15 \pm 0.36$ . Mean post-operative gradient across aortic prosthesis was  $22.9 \pm 12.1$  mm Hg. Five patients (2 with 17, 2 with 19 and 1 with 21 size valve had gradients of  $> 30$  mmHg. All are in NYHA class 1.

**Conclusions:** St Jude Regent aortic prosthesis gives good clinical and hemodynamic results. This is most suitable in patients with small aortic root, especially in Asians who typically have smaller body surface area.