

## MP2-6

### **Surgical Valvuloplasty in Neonates and Infants with Congenital Aortic Valve Stenosis**

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**OBJECTIVES:** In terms of new surgical techniques, congenital aortic valve stenosis treatment is under controversy. This study sought to retrospectively analyze surgical valvuloplasty effectiveness in neonates and infants.

**METHODS:** From July 2012 to February 2018, 84 consecutive neonates (27 patients  $\leq 30$  days) and infants (57 patients at age  $\geq 31$  days and  $< 1$  year) were included. 9 patients (10.7%) underwent a preceding balloon valvuloplasty. The indications for the procedure were stenotic disease. Endocardial fibroelastosis was present in 4 patients (4.8%). The procedures performed were subaortic stenosis repair (n = 5; 6%), commissurotomy (n = 74; 88%), leaflet shaving (n = 64; 76%), raphe shaving (n = 15; 18%), raphe resection (n = 17; 20%), and leaflet replacement (n = 3; 3.5%). Post-repair geometry was tricuspid in 28 (32%) patients.

**RESULTS:** The survival rate was 100%. Freedom from re-repair and Ross operation at 5 years was, respectively, 96.4% (95% confidence interval) and 94% (95% confidence interval). In multivariate analysis, previous balloon dilatation before 6 months of age, the absence of a developed commissure, cusp retraction, a non-tricuspid post-repair geometry and cross-clamp duration were predictors for redo operations. After a mean follow-up period of  $2.9 \pm 1.6$  years, 76 (90.5%) patients had a preserved native valve, with undisturbed valve function (peak gradient  $< 40$  mmHg, regurgitation  $< \text{mild}$ ) in 45 (53.6%), whereas 20 had moderate regurgitation and 19 had moderate stenosis.

**CONCLUSIONS:** Surgical valvuloplasty is safe and durable allowing the patient to grow to infancy and, ideally, into adulthood when aortic root stabilization is available and re-repair or Ross operation can be performed with excellent results or to prevent replacement. Avoidance of early balloon dilatation and aiming for a tricuspid post-repair arrangement, appropriate definitive solution regarding cusp retraction may improve outcomes.