

Treatment of valvular aortic stenosis in children; a 20-year experience in a single institution

*Kjellberg Olofsson C. (1,2), Berggren H. (2), Sunnegårdh J. (2)
Department of Paediatrics, Sundsvall Hospital, Sweden (1); The Queen Silvia Children's Hospital,
Sahlgrenska University Hospital, Gothenburg, Sweden (2)*

Objective: The mode of treatment of valvular aortic stenosis, especially in the neonatal period, is still controversial. Valvotomy is the treatment of choice in our institution. We reviewed our experience regarding mortality, long-term outcome and need for re-intervention.

Methods: All patients <18 years who underwent relief of congenital valvular aortic stenosis with first intervention from January 1994 to December 2013 were identified in local catheter and surgical registries. Our referring area covers approximately 50% of the Swedish population concerning paediatric cardiac surgery. Medical charts of all patients were reviewed and followed until 18 years of age. Survival was cross-checked against the Swedish Population Registry as of Oct 1st 2015. No drop out occurred, except for three patients moving abroad. Patients with aortic regurgitation, subvalvular or supra-valvular stenosis as main indication for surgery or other significant heart defects were excluded.

Results: 114 patients were identified (25 girls, 189 boys). Mean age at diagnosis was 2 days (0-13.3 years). Mean age at initial intervention was 2.9 months (0-17.9 years) with 43 <1 month, 33 1-12 months and 38 patients >1 year. 93 had surgical valvotomy, 11 balloon dilatation, 4 Ross procedure, 5 prosthetic valve replacement, 2 Hegar dilatation as first procedure. In total 207 interventions were performed (surgical valvotomy 101, balloon dilatation 32, Ross procedure 17, mechanical prosthesis 18, biological prosthesis 7, Hegar dilatation 2, homograft 5, conversion to univentricular heart 3, heart transplant 2 and 20 interventions not related to the aortic valve). There was no 30-day mortality. One late death occurred at 10 months of age due heart-failure and concomitant pulmonary infection. Mean follow-up regarding mortality was 11.6 years (2-21.8 years). Re-intervention was required in 50 patients at mean 3.5 years (0-16.7, median 1.2 years). Freedom from re-intervention was 80, 69, 60, 57% at 1, 5, 10 and 15 years respectively.

Conclusion: Long-term survival was excellent. Many patients needed several interventions with valve replacement, including Ross surgery, in 33%. Our data do not allow comparison of catheter and surgical treatment, but based on these results we find no reason to change our current policy of surgery as first intervention.