

Congenital aortic stenosis – Treatment outcomes in a nationwide survey

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Objective: To evaluate the treatment outcomes of pediatric valvar aortic stenosis in a nationwide follow-up.

Background: Balloon aortic valvuloplasty (BAV) has been a preferred choice of treatment for congenital aortic stenosis (AS) in Finland since year 2000.

Methods: A retrospective review of all children who underwent treatment for valvar AS in Finland from 2000 to 2014. The clinical records were reviewed for demographic and anatomical characteristics, surgical history, re-interventions and status at the latest follow-up.

Results: Sixty-four pediatric patients underwent either BAV (n=54) or surgical treatment (n=10) for valvar AS at a median age of 24 days (range 0.2 days to 16.9 years). Four patients in the surgical group were concurrently treated for aortic coarctation (CoA) and one patient in the BAV group had previously undergone CoA repair. Early mortality (before hospital discharge) was 6.3% and it was associated with critical AS in neonates. There was no late mortality during the follow-up (median 6.9 years, range 0.9 - 15.1 years). Adequate gradient reduction (residual gradient < 35 mmHg) without significant regurgitation (AR) was achieved in 80% of cases in both treatment groups. Freedom from re-intervention was 72%, 64% and 38% at 1, 5 and 10 years after BAV, respectively. Reason for the first re-intervention was restenosis in 43%, AR in 30% and combined aortic valve disease in 13% of cases. At the latest follow-up, AS mean gradient was 22 ± 12 mmHg and 45% of the patients had moderate or severe AR.

Conclusions: Majority of congenital AS patients require more than one intervention during childhood, both restenosis and AR causing the burden. In our center, BAV has provided good long-term outcome that is equal to our surgical results.