LONG-TERM FOLLOW UP OF NEONATES WITH COARCTATION AND LEFT HEART HYPOPLASIA

ACC Moderated Poster Contributions
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Background: Neonatal coarctation (CoA) is often associated with hypoplastic left heart structures. Previously, we demonstrated good short and mid-term results after neonatal repair. However, long-term outcome data are lacking. Our purposes were to: 1) assess hypoplastic left heart structure growth, 2) evaluate long-term outcomes and re-intervention rates, and 3) identify echo parameters predicting re-intervention.

Methods: Patients with isolated CoA repaired < 2 months of age between 1993 and 1997, with a mitral or aortic annulus Z-score < -2 were identified. Recent clinical status and any re-interventions were noted. Recent echoes were reviewed for left heart structure sizes which were compared to initial and mid-term values. Statistical analysis included Student t-tests, signed rank tests, and Cox Proportional regression.

Results: 51 of the original 63 pts (81%) had recent follow up: mean duration 15.4 ± 1.5 years, and all were alive and well. 46 (73%) had recent echoes, all with normal left ventricular (LV) size and function. Mitral and aortic Z-scores increased from pre-operative values: -3.3 ± 1.5 to -0.9 ± 0.6, p<0.0001, and -3.3 ± 2.0 to 0.1 ± 1.8, p<0.0001, respectively. They did not, however, change significantly from the time of intermediate follow up (6.1 ± 1.6 years) to latest follow up: -0.6 ± 1.6 to -0.9 ± 0.6, p=0.23, and 0.7 ± 1.6 to 0.1 ± 1.8 p=0.28, respectively. 9 pts (17.6%) developed either LV inflow or outflow obstruction: sub-aortic stenosis in 5, valvar aortic stenosis in 6, mitral stenosis in 3 (some in combination), and recurrent CoA in 9 (17.6%). 12 pts (24%) required re-intervention at 3 ± 4.5 years post-op: all 9 for re-CoA, 4 (7.8%) for sub aortic stenosis, 2 for valvar aortic stenosis (both with sub-AS), and none for mitral stenosis. None of the initial echo parameters were associated with re-intervention.

Conclusions: Long term outcomes following isolated CoA repair with left heart hypoplasia are excellent. Both aortic and mitral valves increase substantially in size by intermediate follow up, and tended to follow normal growth curves afterwards. While 24% required re-intervention, the majority were for re-CoA. Significant LV inflow or outflow obstruction was uncommon.