

Impact Of Gender On Outcomes Of Congenital Heart Disease In Childhood: a 21 year experience of a prenatally diagnosed cohort

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Background: Variations in the presentation and outcome of heart disease according to sex are well-described. Our objective was to report the impact of gender on outcome of congenital heart disease in a cohort of prenatally diagnosed lesions.

Methods: Cases with a prenatal diagnosis of either: classical hypoplastic left heart syndrome (HLHS), tetralogy of Fallot (TOF), isolated transposition of the great arteries (TGA), coarctation of the aorta, balanced atrioventricular septal defect (AVSD) or heterotaxy born between 1995 to 2016 were identified from the fetal cardiac database. Postnatal medical records were reviewed; information sought on associated anomalies, genetic associations, cardiac surgeries, complications and survival assessed according to sex.

Results: There were 990 babies fulfilling the inclusion criteria of which 397 (40.1%) were female. Coarctation of the aorta, TGA and HLHS were more common in males. The overall actuarial survival was 74% (732/990) with the majority of deaths occurring in the early surgical period. In survivors the median time of follow-up was 102 months (range: 0.2 - 281 months). Four patients were underwent cardiac transplantation. There was no significant difference in mortality ($p=0.9$), cause of death ($p=0.2$), and complications ($p=0.8$) according to sex.

Re-intervention of the primary cardiac procedure were as follows: re-coarctation: 10/182 (5.5%; 5 female), AVSD: 14/138 (10.1%; 7 female), TGA: 10/147 (6.8%; 4 female) and TOF: 30/210 (14.3%; 16 female). There were 12/210 (5.7%) pulmonary valve replacements (4 female) in patients with repaired TOF. Secondary operations on patients with HLHS were performed in 55/232 (23.7%): tricuspid valve repair: 21 (9%; 8 female), branch pulmonary artery 17 (7.3%; 7 female) and re-coarctation 17 (7.3%; 6 female). There was no significant difference in the frequency of re-intervention according to sex ($p=0.4$).

Conclusions: Medium term outcome and survival into early adulthood does not vary between males and females in the current era. Although congenital heart disease has been associated with significant morbidity and mortality in adulthood it is hoped that improvements in the paediatric journey will translate into better survival and quality of survival in adulthood and services will be able to support the distinct issues faced by both female and male adults.