

Prenatal Detection and Modes of Presentation of Neonatal Congenital Heart Disease in Ireland: a 5-year progress review

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Aims

This audit aimed to assess the incidence of new cases of severe congenital heart disease in infants in Ireland, and to determine changes in prenatal detection rates by comparing findings to a national audit of prenatal diagnosis in 2009. Furthermore, we aimed to evaluate timing and point of presentation of all infants in Ireland diagnosed postnatally with severe CHD.

Methods

This was a single centre retrospective cohort study. All patients born between May 1st 2015 and May 1st 2016 and admitted to the National Children's Heart Centre in Our Lady's Children's Hospital (OLCHC) Crumlin in the first 6 weeks of life with a diagnosis of severe structural CHD were eligible for inclusion. Severe structural congenital heart disease was defined as an abnormality requiring catheter or surgical intervention within the first six months of life.

Results

184 infants satisfied study criteria. The incidence of severe structural CHD in the study period was 2.8/1000 live births. Within this group the prenatal detection rate was 53%. This compares to a prenatal detection rate of 22% in a corresponding period in 2009. 27% of infants with postnatally detected CHD were transferred from maternity hospital in the early neonatal period. The remaining 20% re-presented from home.

When compared to EUROCAT cases over a similar period, we can see that severe lesions are disproportionately represented in the Irish population with a prevalence of 2.4/1000 live births overall. On comparing prenatally and postnatally diagnosed cohorts, it was evident that those subjects not prenatally diagnosed were more likely to be ventilated for transfer (22/86 postnatally diagnosed, 8/98 prenatally diagnosed) and more likely to require admission to ICU on arrival (24/86 postnatally diagnosed, 17/98 prenatally diagnosed).

Conclusion

This study shows a significant improvement in prenatal detection of structural CHD in Ireland. This is likely attributable to dedicated training and education of sonographers in fetal detection of CHD. The introduction of pre-discharge oxygen saturations checks in the majority of neonatal units has also improved postnatal detection, reducing the number of children discharged from hospital with severe structural congenital heart disease.