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IMPROVED ANTENATAL DETECTION OF CRITICAL CONGENITAL HEART DISEASE RESULTS IN IMPROVED OUTCOME

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Introduction Isolated reports from selected populations suggest early diagnosis of critical congenital heart disease (cCHD) may result in improved outcome, especially in conditions where the surgical outcome is excellent; however, there are few population-based data to support this hypothesis. Furthermore, interpretation is frequently complicated by failure to account for noncardiac comorbidity that may drive outcome.

Methods We undertook a population-based review of newborns with cCHD born between 2006 and 2014. Cases were acquired from the National Fetal Cardiology and Cardiac Surgical databases and from the statutory reporting body for perinatal deaths. All diagnoses from 20 weeks gestation and diagnoses made at post-mortem were included. The timing of diagnosis, survival to cardiac surgery and 30 day mortality were reviewed in all livebirths where there was potential for a two-ventricle circulation. Those with syndromes, additional major noncardiac anomalies were excluded from the analysis as were those born prematurely (i.e. <35 weeks gestation).

Results Of the 436 infants born with cCHD and a potential 2 ventricle circulation, 371 did not have a syndrome or a major non-cardiac abnormality.

The rate of antenatal diagnosis increased during the study period while the rate of postnatal diagnosis before and after hospital discharge declined ($p=0.006$).

The 30 day mortality rate declined from 7.0% to 0.9% during the study period ($p=0.049$) and was largely confined to those who died prior to cardiac surgery.

Termination of pregnancy was uncommon and did not vary over the study period.

Conclusions There has been a significant increase in the rate of antenatal diagnosis in infants with a potential two ventricle circulation. This has been an associated decrease in 30 day mortality.

It is likely there are a number of factors responsible for these findings including earlier diagnosis allowing delivery at the cardiac surgical centre, and enhanced intensive care treatment before surgery.

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A MORE EFFICIENT REGIONAL CARDIAC NETWORK: YES, WECCAN!

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Background and aims Outpatient paediatric cardiology services in the West Midlands Children's Cardiac Network (WeCCaN) consist of cardiology clinics in the tertiary centre and clinics in District General Hospitals (DGHs) run by either Consultant Paediatric Cardiologists (joint cardiology clinics) or by Paediatricians with Expertise in Cardiology (PECs). We aimed to assess the

communication between tertiary cardiology, local Paediatricians and PECs and establish whether the cardiac network runs efficiently.

Methods We collected data from all patients seen in tertiary cardiology clinics over a period of one month (November 2016).

Results In total 1023 patients were seen between 01/11/2016 and 30/11/2016 in 108 Cardiology clinics and 12 specialist cardiac clinics. Age range was 3 weeks-19 years and M:F ratio was 1.3:1. Diagnosis was divided in: simple structural defects (35%), complex structural defects (28%), non-structural heart disease (21%) and acquired/inherited disease (16%). 195 patients were new (12%) and 828 were follow-up (81%). There was no cardiac pathology identified in 66% of new referrals. 369 patients (36%) had underlying non-cardiac comorbidities.

Communication to PECs took place in 26% of new referrals and 34% of follow-up patients (postcode in a region with PEC service). Letters to General/Community Paediatrician were sent in 45% of new referrals and 53% of follow-up patients. Looking into disease severity and reasons for referral/follow-up, we concluded that 77% of new and 30% of follow-up patients could have seen a PEC instead of a Consultant Paediatric Cardiologist.

Conclusions

- Communication between tertiary Cardiology and PECs is suboptimal: We are currently working towards an information-sharing network, by providing access to our cardiac database for all West Midlands PECs.
- Communication with Paediatricians is suboptimal: We wish to approach Community Paediatricians and create a working relationship to ensure that all patients with complex heart disease undergo neurodevelopmental surveillance.
- 2/3rd of new patients and 1/3rd of follow-ups could have seen a PEC.
- 1 in 6 patients are under cardiac surveillance for acquired/inherited disease: Re-designing cardiac services to include PEC and/or combined nurse practitioner/physiologist-led clinics in the tertiary centre is being discussed to improve efficiency and enhance workforce development.

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HOW GOOD ARE PAEDIATRIC DOCTORS IN INTERPRETING ECGS

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Aim

- Conduct a survey among Yorkshire paediatric doctors and identify deficiencies in paediatric ECG interpretation skills and knowledge.
- Assess the need for a paediatric ECG e-module.

Methods An online questionnaire was sent out to all Yorkshire Paediatric doctors. The questionnaire dealt with topics ranging from lead placements to common paediatric abnormalities in separate sections. In each subsection, subjective questions relating to confidence in interpretation were followed by objective questions. Participants were also asked about the usefulness of a problem based ECG e-module and were asked to provide suggestions for topics to be included.

Results Total numbers: