

**Conclusion** Incidence of chest pain presenting to our ED was 1%. The commonest recorded cause was musculoskeletal. Fewer than 1% had a possible cardiac aetiology for chest pain. ECG is a useful test for children presenting with chest pain. Very few patients with mild ST elevation had cardiac enzyme levels checked.

#### G168(P) ANTENATAL MANAGEMENT OF FETAL CARDIAC DISEASES, A SINGLE CENTRE EXPERIENCE IN EGYPT

H ElMarsafawy, S Rakha, R El Ashry, Y Al Tonbary. *Department of Pediatrics, Faculty of Medicine, Mansoura University, Mansoura, Egypt*

10.1136/archdischild-2015-308599.163

**Aims** The antenatal diagnosis of congenital heart diseases (CHD) is crucial for fetal and perinatal management; however, there is little in literature regarding the pharmacologic intervention for fetal CHD in Egypt. Therefore, we attempted to detect fetal cardiac structural or functional abnormalities using fetal echocardiography and plan fetal pharmacologic intervention without endangering the mother's life.

**Methods** Cases fulfilled inclusion criteria were diagnosed using detailed fetal Echocardiographic examinations and antenatal treatment was described if indicated after a written consent. Cardiovascular profile score (CVPS) was used to assess the response to treatment. Postnatal transthoracic Echo was done to confirm diagnosis with follow up till the end of neonatal period to determine outcome.

**Results** Fetuses fulfilled inclusion criteria were 143 with a mean gestational age at diagnosis  $27.59 \pm 5.41$  weeks, mean maternal age at diagnosis was  $26.64 \pm 5.428$  years, the most frequent cause of referral was family history of CHD (34.1%). Twenty fetuses (14%) received antenatal therapy. Fetuses with heart failure due to structural cardiac defects ( $n = 4$ ) and functional non arrhythmic heart failure ( $n = 8$ ) received digoxin while cases with fetal tachyarrhythmia ( $n = 6$ ) received digoxin and/or sotalol or flecainide and fetuses with immune mediated fetal heart block ( $n = 2$ ) received dexamethazone. Success in tachyarrhythmia was statistically significant regarding CVPS ( $p = 0.038$ ) and heart rate changes ( $p = 0.002$ ) but statistically insignificant regarding CVPS in structural defects ( $p = 0.102$ ) and non-arrhythmic functional heart failure ( $p = 0.343$ ).

**Conclusion** Antenatal cardiac pharmacologic intervention is possible with hydrops fetalis reversal in fetal tachyarrhythmia and resolution of first degree immune mediated atrioventricular block. On the contrary, no response to antenatal digoxin use in fetal structural heart failure and limited response in non-arrhythmic functional heart failure.

#### G169(P) EXPLORING ETHNIC VARIATION IN INFANTS WITH CONGENITAL HEART DEFECTS UNDERGOING PAEDIATRIC CARDIAC SURGERY

<sup>1</sup>RL Knowles, <sup>1</sup>D Ridout, <sup>2</sup>S Crowe, <sup>3</sup>J Tregay, <sup>3</sup>J Wray, <sup>4</sup>D Barron, <sup>5</sup>D Cunningham, <sup>6</sup>R Parslow, <sup>7</sup>R Franklin, <sup>3</sup>C Bull, <sup>3</sup>K Brown. <sup>1</sup>Institute of Child Health, University College London, London, UK; <sup>2</sup>Clinical Operational Research Unit, University College London, London, UK; <sup>3</sup>Great Ormond Street Hospital NHS Foundation Trust, London, UK; <sup>4</sup>Birmingham Children's Hospital NHS Foundation Trust, Birmingham, UK; <sup>5</sup>National Institute for Cardiovascular Outcomes Research, University College London, London, UK; <sup>6</sup>Paediatric Intensive Care Audit Network, University of Leeds, Leeds, UK; <sup>7</sup>Royal Brompton and Harefield Hospitals NHS Foundation Trust, London, UK

10.1136/archdischild-2015-308599.164

**Introduction** North American researchers have reported ethnic differences in the prevalence and short-term outcomes of congenital heart defects (CHDs), which may reflect genetic variation, environmental exposures or healthcare access. It is unclear whether ethnic differences in CHD frequency and outcomes also exist in the UK population and healthcare system.

**Aim** To examine national paediatric cardiac surgical audit data for ethnic differences in the frequency of different CHD subtypes, associated comorbidities and short-term outcomes for infants operated in the first year of life.

**Methods** Individual records from the national congenital cardiac surgical audit (NICOR) of UK infants aged under 12 months who had a cardiac surgery or intervention between 01/01/2005 and 31/12/2010, were matched with intensive care admission records in the Paediatric Intensive Care Audit Network (PICANET) and linked records were obtained for 8481 (86%) of operated infants. Census-derived categories for ethnic classification were used.

**Results** Children who were operated within the first year of life for major CHD represented 2.2 (95% Confidence Intervals [CI] 2.2, 2.3) per 1000 live births. Compared with children of white ethnicity, children of Asian ethnicity were more likely to have cardiac surgery (2.3 [2.3, 2.4] and 3.2 [3.0, 3.5] per 1000 live births respectively) in the first year of life. CHD subtypes that were significantly over-represented within the Asian ethnic group included single ventricle (SV), transposition of the great arteries, pulmonary atresia, tetralogy of Fallot (TOF) and septal defects; in the Black ethnic group, atrioventricular septal defect and SV were over-represented, while TOF and aortic stenosis were under-represented. Preterm birth occurred in 14% of babies, almost twice the general population rate, and associated non-cardiac anomalies were reported in 21% of affected infants, however no significant ethnic variation was observed. There were 246 deaths during the first year after hospital discharge following surgery but no significant ethnic differences in short-term mortality were identified.

**Conclusion** The risk of CHD intervention in infants aged under one year varied by ethnic group, and children of Asian ethnicity were at greater risk. No ethnic differences in short-term post-discharge mortality were identified, however longer-term outcomes should be explored.

#### G170(P) IMPROVING ANTENATAL DETECTION RATES OF SIGNIFICANT CONGENITAL CARDIAC LESIONS IN A DISTRICT GENERAL HOSPITAL

H Aughey, L Guilder, Y Kumar. *Paediatric Department, Royal Cornwall Hospital Trust, Truro, UK*

10.1136/archdischild-2015-308599.165

**Introduction** Congenital heart disease (CHD) affects around 1% of pregnancies in the UK each year. Around half of these are major cardiac lesions requiring surgery or intervention within the 1<sup>st</sup> year of life. Studies show that if CHD is detected before birth, there are significant benefits for babies, their families and for medical services around the time of birth and in the first year of life. Prenatal diagnosis and appropriate treatment may prevent the devastating consequences of early circulatory collapse, such as death and ischaemic brain damage.

**Background** An audit previously conducted in our district general hospital found that the antenatal detection rate of significant cardiac lesions in Jan 1998–Dec 1999 was 17.6%. Following

this, new ultrasound machines were purchased and ultrasonographers received training to perform outlet views of the fetal heart as well as 4 chamber views.

**Aims** The aims of this audit were 1) to establish whether this intervention has led to improved antenatal detection of significant CHD and 2) to compare these detection rates with national figures.

**Methods** Antenatal detection rates of CHD were again audited for all babies who received an anomaly scan in Jan 2009–Dec 2010. Children with significant CHD were identified through their attendance at cardiac clinic. We then looked retrospectively at each child's anomaly scan (18+0 – 20+6 weeks gestation) and recorded whether or not a cardiac lesion had been detected antenatally. We also reviewed data from the South West Congenital Anomaly Register (SWCAR) and local electronic and paper records by which method we were able to include antenatally detected significant CHD in fetuses who did not survive.

**Results** Following the intervention antenatal detection of significant CHD rose to 72%. This compares with national detection rates of around 30% over the same period.

**Conclusion** Our findings confirm the necessity of cardiac outlet views along side 4-chamber views as part of antenatal anomaly scanning with good supervision and support from local and regional Fetal Medicine Specialists.

#### G171(P) PROVIDING PSYCHOLOGY SUPPORT IN A DISTRICT PAEDIATRIC CARDIOLOGY SERVICE

<sup>1</sup>C Illingworth, <sup>2</sup>Y Singh, <sup>2</sup>W Kelsall. <sup>1</sup>Department of Clinical Psychology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK; <sup>2</sup>Department of Neonatology and Paediatric Cardiology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK

10.1136/archdischild-2015-308599.166

**Introduction** Advances in medical and surgical care have improved mortality and morbidity rates in children with congenital heart disease (CHD). It has been recognised that children with CHD and their families benefit from psychology input. In 2010 the National Reference Group for Psychologists working in Paediatric Cardiology drafted minimum standards for services to meet the psychosocial needs of these children. These were approved by the British Psychological Society, the Congenital Heart Service Standards Group and the Clinical Implementation Advisory group in 2013.

**Aims** The study reviewed the impact of newly introduced clinical psychology service for Paediatric Cardiology patients in Cambridge.

**Methods** Patients were identified from local paediatric and psychology databases. Children and families were referred to a Clinical Psychologist working in general paediatrics. Access to the service was initially limited the children referred were deemed to be the most complex in the Service.

**Results** Between March 2012 and March 2014 twenty five referrals were made and 18 patients/families were seen, 2 declined input and 5 are pending. Of those seen, 10 were male and 8 female aged between 4 months and 16 years. There were 116 contacts with the psychologist. Most were offered 6 appointments, ranging from 2 to 20. The reasons for referral were for: parental anxiety/trauma (4), attachment issues (1),

adjustment to a new diagnosis (4), management of neurodevelopmental concerns and school difficulties (1), behavioural difficulties (2) and emotional difficulties (6). So far, eleven Service satisfaction questionnaires have been sent to 11 families and six have been returned. All respondents valued accessing a psychologist locally rather than travelling to a specialist centre.

**Conclusions** This study supports national and local drivers to provide high quality medical and psychological care close to child's home from birth through to transition to adult services. There is anecdotal evidence that direct family contact with the psychologist has freed up Consultant time and improved shared care. This data together with the standards documents have been used to establish a dedicated cardiology psychology service.

#### G172(P) CASE REPORT: CYTOMEGALOVIRUS AND KAWASAKI DISEASE – IS THERE A LINK?

KL Kok, TD Jones. Paediatrics, Peterborough City Hospital, Peterborough, UK

10.1136/archdischild-2015-308599.167

**Aims** Kawasaki disease is an uncommon cause of fever in a young infant (less than 6 months) and is associated with life-threatening complications. Cytomegalovirus has been linked with atherosclerosis of coronary arteries in some adult studies. Acute Cytomegalovirus infection has been detected in a few reported cases of Kawasaki disease in infants.

**Methods** A retrospective case review was done of a 3 month old Asian infant, who presented to a district general hospital, with a 3 day history of fever and irritability. She was treated with intravenous antibiotics for presumed sepsis. The fever persisted after 5 days and she was transferred to a tertiary hospital for further investigations into the cause of fever.

**Results** Cytomegalovirus DNA was detected by polymerase chain reaction (PCR) in the infant's blood. Cytomegalovirus IgM was not detected. ECG and echocardiogram were not performed due to lack of clinical evidence of underlying cardiac cause at the time. The fever was settling and infection markers were improving. The infant looked to be improving, according to the parents. The infant became acutely unwell, arrested and passed away on day 13 of illness.

At post-mortem, multiple thrombosed giant aneurysms (up to 17mm) of the coronary arteries were found. There were multiple saccular coronary artery aneurysms affecting the right coronary (11 × 17mm), left descending coronary artery, left diagonal artery, left circumflex and the right posterior descending artery. The pericardial cavity contained 70mls of blood. There was moderate to severe coronary artery arteritis. The cause of death was cardiac tamponade secondary to rupture of a coronary artery aneurysm, caused by Kawasaki disease. Cytomegalovirus DNA was detected in liver and lung tissue.

**Conclusion** Kawasaki disease is an uncommon but important differential in a young infant with fever and requires prompt treatment with immunoglobulins and Aspirin. If echocardiography is not available, an ECG may provide useful information such as ST segment changes and Q waves. The presence of Cytomegalovirus DNA on blood PCR raises the possibility of Kawasaki disease and a positive result may be helpful additional information in the diagnosis of Kawasaki disease.