

## **Fetal and maternal outcomes in pregnancies complicated by congenital heart defects**

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### **Objective**

To review fetal, neonatal and maternal outcomes of pregnancies associated with CHDs diagnosed by prenatal ultrasound across a 2-year period in a single tertiary Fetal Medicine Centre in UK.

### **Methods**

Retrospective review of fetal, neonatal and maternal outcomes of 85 singleton pregnancies complicated by CHDs during the study period. Fetal outcomes included karyotype, presence of associated abnormalities, intrauterine growth restriction ([IUGR], defined as estimated fetal weight <10<sup>th</sup> percentile and/or crossing centiles and/or abnormal Dopplers) and birth outcomes. Maternal outcomes included hypertensive disorders of pregnancy and preterm births (PTB).

### **Results**

Five cases were excluded due to minor abnormalities, one because the diagnosis was not confirmed postnatally and six for missing outcomes, thus leading to a study population of 73 fetuses. Twenty-seven fetuses (37%) had CHDs associated with extra-cardiac abnormalities and/or genetic defects. Of these, 15 were livebirths, five had intrauterine demise (IUID), four had neonatal deaths (NND) and three had medical termination of pregnancy (MTO). In this group, excluding MTO cases, the incidence of IUGR was 37% (9/24) with aneuploidy accounting for about half of them. Two pregnancies (8.3%) were complicated by hypertensive disorders (one late pre-eclampsia [PET], and one Pregnancy induced hypertension [PIH]). There were four spontaneous PTBs (16%) with three fetuses being aneuploid and one having multiple abnormalities including oesophageal atresia with polyhydramnios. Forty-six (63%) fetuses had isolated CHDs. Of these, 42 were livebirths, one had IUID, one had NND and two had MTO. In this group, excluding MTO cases, the incidence of IUGR was 20% (9/44). Cardiac diagnosis in the IUGR group included two Tetralogy of Fallot, two aortic coarctation, one common arterial trunk, one tricuspid atresia, two ventricular septal defects and one right aortic arch. Three pregnancies (6.8%) were complicated by hypertensive disorders (two late PET and one PIH). There were three spontaneous PTBs (6.8%).

### **Conclusion**

Our study confirms a significant association between CHDs and IUGR both in pregnancies with isolated CHDs and particularly in CHDs associated with extra-cardiac and/or genetic anomalies. The rate of hypertensive disorders in pregnancies and spontaneous PTB in both our study populations was also high. If these results are confirmed by larger case-control studies, prenatal specialists should consider closer maternal surveillance for PET and PTB in pregnancies complicated by CHDs as well as in subsequent pregnancies.