Fetal Congenital Heart Disease Associated With Maternal Gestational Diabetes

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Introduction
It is estimated that maternal type 1 diabetes mellitus infers an increased risk of congenital cardiac disease (CHD). The association with gestational diabetes (GDM) is more controversial. Metanalyses have suggested a slightly higher incidence in women with GDM compared to normal cohorts, though the risk is lower than women with pregestational (type1/2) diabetes.

Methods
This retrospective study was undertaken to analyse the demographics and outcomes of woman with GDM referred for detailed fetal echocardiography to our tertiary centre between 1st January 2009 and 31st December 2011. Women with Type 1 or pre-existing Type 2 diabetes were excluded from the study.

Study population
195 women with GDM were assessed in the 3 year period and form the study population.

Results
The median age of women referred with GDM was 34 years (Range 21-44 years, Mean 33.2 years). Of the 195 women, 86 (44.1%) were controlled by diet; 30 (15.4%) by oral medication; 73 (37.4%) by insulin and 6 (3.1%) by a combination of insulin and oral medication.

Of the 195 referrals, a diagnosis of definite CHD was made in 6 cases (3%). These were: atrioventricular septal defect; tricuspid atresia/VSD; double inlet left ventricle/TAPVD/Pulmonary atresia; double outlet right ventricle/TAPVD; transposition of the great arteries; ventricular septal defect. The referral reasons in the 6 cases were abnormal views of the heart (3), increased nuchal translucency (1), inadequate views (1) and fetal arrhythmia (1).

149 women had the presence/absence of extracardiac anomalies (ECA) documented in their notes. Of these documented, 11 (7.4%) had an ECA noted on the fetal anomaly scan. Of the 141 women in which the nuchal translucency (NT) was documented only 1 (0.7%) was noted to be raised in early pregnancy.

Conclusion
Our data shows that there is an increased risk of fetal congenital heart disease in women with GDM. Detailed fetal echocardiography should be considered in this group.