OP15.05. Risk of spontaneous and iatrogenic preterm birth in pregnancies with prenatal diagnosis of major congenital heart disease

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OBJECTIVES

Preterm birth (PTB) can significantly worse the prognosis of fetuses affected by congenital heart diseases (CHD). This study evaluated the prevalence of PTB in pregnancies affected by CHD and investigated the aetiology of PTB, differentiating spontaneous (SPTB) and iatrogenic (IPTB) components.

METHODS

From the registry of a tertiary Fetal Echocardiography Laboratory, we retrospectively selected singleton pregnancies beyond 23 weeks with prenatal diagnosis of major CHD between 2003 and 2018. Intrauterine deaths, aneuploidies and minor CHD were excluded. The following outcomes were assessed: PTB <37 weeks, PTB <34 weeks, PTB <32 weeks, IPTB and SPTB. Univariate analysis, multiple comparison and logistic regression analysis with the adjustment for maternal characteristics were applied.

RESULTS

480 pregnancies with major CHD were compared with 456 normal pregnancies. PTB < 37 weeks occurred in 65/477 (13.6%) cases with CHD and in 39/447 (8.7%) cases without CHD (aOR 2.1, 95% CI: 1.24-3.81, p=0.007). However, PTB < 34 weeks did not show any significant difference between the two groups.

The incidence of PTB < 37 weeks was greater in cardiomyopathy (4/12, 33.3%, p=0.02), aortic stenosis (5/19, 26.3%, p=0.03), truncus arteriosus (4/7, 57.1%, p=0.002) and univentricular heart (5/18, 27.8%, p=0.02) compared to the control group.

In addition, both SPTB and IPTB did not have any significant difference comparing the two groups. The former accounted for 39/477 (8.2%) in pregnancies complicated by CHD and 23/447 (5.1%) in normal pregnancies (p=0.06), whereas the latter occurred in 23/477 (4.8%) cases with CHD and in 16/447 (3.5%) controls (p=0.35). Looking at specific CHD subgroups, SPTB was significantly higher in pregnancies with truncus arteriosus (4/7, 57.1%, p=0.003) and cardiomyopathy (3/12, 25%, p=0.03), while IPTB was greater in pregnancies affected by Ebstein’s anomaly (4/23, 17.4%, p=0.01).

CONCLUSION: This study highlights an overall positive association between PTB and CHD with a predominance of SPTB. These findings should be carefully considered in the obstetrical management as neonatal morbidity and mortality in CHD decrease with advancing gestation.