

**Obstetrical and neonatal outcomes in pregnancies with prenatal diagnosis of fetal congenital heart disease: a multicenter experience.**

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**Introduction.** A fast-increasing number of studies have paved the way for a possible link between an impaired placenta's function and pregnancies affected by congenital heart disease (CHD). Hypertensive pregnancy disorders (HDP) that are most common placenta-related complications put mother and fetus at an increased risk of morbidity and/or mortality. The aim of this retrospective study was to explore the incidence of HDP and preeclampsia (PE) in pregnancies affected by CHD.

**Materials and methods.** Patients included into the study were referred to a tertiary Fetal Cardiology Center from 2003 to May 2018. Out of 1043 pregnant patients with offsprings affected by CHD, after excluding terminations of pregnancy, intrauterine fetal deaths, twin pregnancies and chromosomal abnormalities, 480 cases were studied for HPD and PE. Outcomes of CHD group were compared with those of a control group without CHD (456 cases followed in the Dpt. of Obstetrics). Univariate analysis by Fisher's/Chi-square tests and adjusted binary outcome values by logistic regression were performed. Moreover, inter-group comparisons among different CHD were made by Kruskal Wallis test.

**Results.** CHD pregnancies showed placental-related complications like PE (14/480, 2.9% vs 4/456, 0.9%), HDP (21/480, 4.3% vs 15/456, 3.3%) and placental abnormalities (22/480, 4.5% vs 15/456, 3.3%) more frequently than control group, but statistical significance difference was achieved only for PE ( $p=0.023$ ). The adjusted OR for maternal factor (age, parity, mode of conception and comorbidity) was significantly increased for both conditions (HDP – OR 2.7 [95 CI: 1.0-6.82], PE – OR 4.1 [95CI: 1.1-16.3]). PE and HDP were significantly more frequent in Tetralogy of Fallot /ToF/ (4/50) and 5//50,  $p<0.05$ , hypoplastic left heart /HLHS/ (2/19 and 3/18,  $p<0.05$ ) and heterotaxy syndromes with CHD (PE 2/14  $p< 0.05$ ) than in controls spontaneously conceived (1/239 and 3/239).

**Conclusions:** This study show an increased risk of obstetrical complications such as PE and HDP, in pregnancies affected by CHD, with higher risk in TOF, HLHS and heterotaxy syndromes. Consequently, an accurate screening and monitoring for placental disorders and preterm birth should be carried out in all pregnancies with fetuses with CHD.