

Long-term outcome in fetuses with cardiac arrhythmia prenatally diagnosed by echocardiography

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Objective : The objectives of this retrospective study of 59 fetuses with various fetal cardiac arrhythmias prenatally diagnosed by echocardiography were to estimate the incidence of fetal compromise and to evaluate perinatal mortality and morbidity, and postnatal outcomes.

Methods : We retrospectively reviewed the medical records of 59 fetuses who had irregular fetal heart beats detected while receiving antenatal care in the Department of Obstetrics and Gynecology at Yonsei University Medical Center from 1995 to 2005. Furthermore, we compared the antenatal echocardiographic diagnosis with postnatal diagnosis based on electrocardiography, holter monitoring and echocardiography.

Results : The 59 cases of fetal arrhythmia consisted of 6 cases of sinus tachycardia, 7 cases of bradycardia, 9 cases of atrio-ventricular block, 2 cases of paroxysmal supra-ventricular tachycardia (PSVT), 3 cases of atrial flutter, 23 cases of atrial extrasystoles (PAC), and 9 cases of ventricular extrasystoles (PVC). Of the 59 cases, 1 case expired due to severe combined fetal anomaly, and the remaining 58 cases were delivered at term without any medical treatment and fetal compromise. Of the normally delivered 58 cases, 1 case had cardiac tumor (rhabdomyoma) and 12 cases showed cardiac anomalies. After delivery, only 4 cases (1: atrial flutter, 2: PSVT, 1: AV block) received digitalization and 54 cases turned to normal sinus rhythm spontaneously without any intervention. Of the 58 cases, 1 case had neurologic disorder with seizure and 57 cases lived without any morbidity during the follow up postnatal period. Mean postnatal follow up duration was 14 months (1-72 months) and the survival rate was 98.4%.

Conclusion : In this study, we found that most fetal arrhythmias returned to normal sinus rhythm spontaneously without further intervention but some fetal arrhythmias (atrial flutter, AV block and PSVT) and a case with combined cardiac problem (cardiac tumor) may require prenatal or postnatal treatment. Therefore, the evaluation of fetal arrhythmia by fetal echocardiography may be useful in the differential diagnosis of fetal arrhythmias as well as in the treatment and management of fetal arrhythmias.