

P-wave duration and dispersion in intrahepatic cholestasis of pregnancy

Kirbas O, Kirbas A, Biberoglu E, Daglar HK, Uygur D, Danisman N
Zekai Tahir Burak Women's Health Education and Research Hospital, Ankara, Turkey

Objective

Intrahepatic cholestasis of pregnancy (ICP) is a pregnancy specific liver disease. It is characterized by abnormal maternal liver functions and elevated bile acids. Raised maternal bile acid levels have been associated with fetal distress and arrhythmia in fetus. The bile acids have been demonstrated to cause arrhythmia and abnormal calcium dynamics in vitro cultured neonatal rat cardiomyocytes. Bile acids may alter maternal cardiomyocyte function like fetus. P-wave dispersion (PWD) is an appealing marker for predicting the risk of developing atrial arrhythmias defined as the difference between the maximum and the minimum P-wave durations measured on a 12-lead surface electrocardiogram (ECG). Increased P-wave duration and PWD have been reported in various clinical settings, including atrial flutter, coronary artery disease, hypertension, rheumatic mitral stenosis, mitral annular calcification, obstructive sleep apnea, and obesity. The aim of this study is to investigate maternal P-wave duration and dispersion changes in pregnant women with ICP.

Methods

Age, gestational week, body mass index (BMI), resting heart rate and blood pressure of the participants were recorded. Fasting and postprandial TBA, NLR, and aminotransferase (AST/ALT) levels were measured and women with pre-known systemic disease (endocrinological, cardiovascular, gastrointestinal, immunological or oncological) were excluded. The blood samples of 65 pregnant women with intrahepatic cholestasis were examined. The 12-lead ECG was recorded at a paper speed of 50 mm/s and 1-mV/cm standardization. Onset of the P-wave was defined as the first atrial deflection from the isoelectric line and the offset was the return of the atrial signal to baseline. Maximum P-wave duration (P-max) was defined as the longest measurable P-wave duration in any lead. Minimum P-wave duration (P-min) was defined as the shortest measurable P-wave duration in any lead. P-wave dispersion (Pdis) was calculated as the maximum-minimum P-wave duration ($Pdis = P \text{ maximum} - P \text{ minimum}$).

Results

This study is not completed yet.

Conclusion

The bile acids may alter maternal and fetal cardiomyocyte function. The investigators hypothesized that PWD and p wave duration may affect in pregnancy with ICP.