

Cardiac Rhythm and Conduction Disturbances in Pregnant Women

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Abstract: Cardiovascular diseases (CVDs) are the leading cause of death in all countries. Heart rhythm disturbances lead to the most severe complications in the development of cardiovascular pathology - sudden death, systemic and cerebral thromboembolism. Arrhythmia - complex pathological syndrome that occurs as a result of a violation dynamic work organization of cardiovascular system. Pathogenesis arrhythmia is complex and cannot be obtained no exhaustive explanations sides disorders of nervous regulation of work heart and its conduction system, nor in areas of membrane potential changes myocytes. It is obvious that disorganization rhythm in some cases cannot be explained structural changes in the heart (for example, "isolated atrial fibrillation").

The proposed hypothesis of the pathogenesis of arrhythmias, suggests that rhythm disorganization may be due to reasons not changing physical properties only the heart, but also large vessels, the entire circulatory system. Pathological dynamic system formed atherosclerotic changes arteries, valves and chambers of the heart, becomes sensitive to mechanical influences of a pulse wave capable of formation of leading resonant frequencies that suppress physiological rhythms.

Keywords: arrhythmia, conduction disorder, pregnancy.

Goals/objectives:

The purpose of the study is to analyze the nature and causes of heart rhythm disturbances in pregnant women.

Material and methods:

The study included 117 women (mean age 25.9 ± 3.6 years) in II-III trimester of pregnancy, sent for consultation to the 4-family clinic in the city of Bukhara. All subjects underwent standard studies, including electrolytes (potassium, sodium) in the blood serum and thyroid hormones (thyroid-stimulating hormone, triiodothyronine, thyroxine), Doppler echocardiography (Logic-5, Germany), 24-hour ECG monitoring (Cardiosens ", KHAI MEDIKA, Ukraine). Statistical processing of the obtained data was carried out using the methods of variation statistics using the statistical software package "STATISTICA 6.0". Significance of differences was considered at $p < 0.05$

Results:

Various heart rhythm disturbances were registered in 97 patients, of which 55 were due to cardiovascular pathology (group 1) and 42 were idiopathic arrhythmias (group 2). The control group consisted of 20 women with normal sinus rhythm. It was found that 40 women (34.1%) smoked at the time of the examination. A family history of cardiovascular diseases was noted in 65 (55.6%) women. It should be noted that before pregnancy there were no complaints of interruptions in the heart function or palpitations in the examined patients. Patients with heart rhythm disturbances in the second trimester of pregnancy developed weakness, increased fatigue, periodic interruptions in heart function, and palpitations, which was the reason for additional examination. An additional examination in group 1 revealed mitral valve prolapse in 38 women, with grade I mitral regurgitation detected in grade 6 and grade II in 32 people;

Mitral valve insufficiency of rheumatic origin was noted in 5 patients, post-myocardial cardiosclerosis - in 11 people and open foramen ovale - in 1 case. According to daily ECG monitoring in group 1, the number of ventricular extrasystoles was 26% ($p < 0.001$) more than in group 2 and 7.6 times more than in the control group; supraventricular extrasystoles - 2.8 and 7 times more than in the 2nd and control groups (all $p < 0.001$), respectively. It was found that supraventricular and ventricular extrasystoles were recorded in both groups of patients with cardiac arrhythmias. Moreover, patients with mitral valve prolapse had fewer supraventricular extrasystoles ($p < 0.001$) and more ventricular extrasystoles ($p < 0.05$) compared to individuals with other cardiovascular diseases. When compared with patients with idiopathic arrhythmias, women with mitral valve prolapse had significantly less supraventricular extrasystoles ($p < 0.05$), and the number of ventricular extrasystoles did not differ significantly from patients in the second group.

Conclusion:

Thus, heart rhythm disturbances in pregnant women were noted both against the background of cardiovascular pathology (congenital and acquired heart defects, post-myocardial cardiosclerosis, mitral valve prolapse with minor mitral regurgitation), and without it and metabolic disorders. Such patients require careful dynamic monitoring, and with the development of life-threatening arrhythmias and hemodynamic instability, timely adequate therapy.

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