MODERN LABORATORY DIAGNOSIS OF PREGNANT WOMEN WITH ATHEROSCLEROSIS

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Relevance*. Atherosclerosis is a chronic condition characterized by the accumulation of lipids and other substances on arterial walls, leading to their thickening and loss of elasticity. This condition is particularly dangerous for pregnant women, as it can affect uteroplacental blood flow, increasing risks for both the mother and the fetus. The relevance of laboratory diagnostics in this patient group lies in the need for timely detection and management of atherosclerotic changes to prevent pregnancy and delivery complications.*

Keywords:*Atherosclerosis, Pregnancy, laboratory diagnostics, lipid profile uteroplacental blood flow, complication prevention*

Research Methods: Modern methods of laboratory diagnostics for pregnant women with atherosclerosis involve a comprehensive approach consisting of several key directions:

Lipid Profile: Assessment of total cholesterol, high-density lipoproteins (HDL), low-density lipoproteins (LDL), and triglycerides. This helps to evaluate the extent of atherosclerosis and the risk of cardiovascular complications.

Coagulogram: Evaluation of the blood coagulation system to detect tendencies towards thrombosis, which is crucial for preventing blood clots during pregnancy.

Inflammatory Markers: Measurement of C-reactive protein (CRP) and other inflammatory markers to assess the presence of systemic inflammation associated with atherosclerosis.

Homocysteine: Measurement of homocysteine levels, as elevated levels are associated with increased risk of atherosclerosis and thrombosis.

Doppler Ultrasound: Assessment of uteroplacental blood flow using Doppler ultrasound. This method helps to detect circulatory disturbances that could threaten fetal well-being.

Results: The application of these diagnostic methods allows: Timely detection of atherosclerotic changes in pregnant women and determination of their severity.

Risk assessment for both mother and fetus, related to lipid metabolism disorders and thrombosis, which is crucial for complication prevention.

Development of individualized pregnancy management plans, including dietary adjustments, medication therapy, and monitoring of the mother and fetus.

Prevention of serious pregnancy complications, such as preeclampsia, fetal growth restriction, and preterm birth, through early detection and correction of abnormalities.

Modern laboratory diagnostics of atherosclerosis in pregnant women is an essential tool in obstetric practice, contributing to improved pregnancy outcomes and reducing health risks for both mother and child.

Modern approaches to diagnosing and treating atherosclerosis in pregnant women significantly improve pregnancy outcomes. However, there are certain challenges and promising areas for further research and development.

Hormonal Changes: Pregnancy is accompanied by significant hormonal changes that can affect the lipid profile and other biochemical parameters. This complicates the interpretation of results and necessitates the development of specific reference values for pregnant women.

Safety of Medication Therapy: Not all medications used to treat atherosclerosis are safe for pregnant women. This limits therapeutic options and requires the search for new, safer drugs.

Individual Differences: Each pregnancy is unique, and diagnostic and treatment approaches must take into account the individual characteristics of patients, including genetic factors and comorbidities.

Prospects:Genetic Research: Development of genetic tests that can help predict the risk of developing atherosclerosis and related complications in pregnant women. This will allow for more precise identification of at-risk groups and the development of individualized pregnancy management plans.

New Biomarkers: Search for and implementation of new biomarkers that can more accurately reflect the condition of the vascular system and the degree of atherosclerotic changes. This will improve diagnosis and monitoring of patients' conditions.

Telemedicine and Remote Monitoring: Implementation of telemedicine technologies for remote monitoring of pregnant women with atherosclerosis. This will allow for more prompt response to changes in condition and adjustment of therapy.

Multimodal Approach: Combination of various diagnostic methods (laboratory tests, ultrasound diagnostics, genetic research) to obtain a more

comprehensive picture of the patient's condition and develop optimal treatment strategies.

Conclusion: Modern laboratory diagnostics play a crucial role in managing pregnancy in women with atherosclerosis. A comprehensive approach to diagnostics, including lipid profile assessment, coagulogram, inflammatory markers, homocysteine levels, and Doppler ultrasound, allows for timely risk identification and the development of individualized pregnancy management plans. The implementation of new technologies and research methods in the future will further enhance the ability to monitor pregnant women effectively and prevent complications, ensuring the safe progression of pregnancy and the well-being of both mother and child.

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