THE IMPORTANCE OF BIOCHEMICAL SCREENING TESTS PERFORMED AT DIFFERENT STAGES OF PREGNANCY

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Pregnancy is a period characterized by significant physiological, endocrine, and biochemical changes in a woman's body. The proper functioning of the fetoplacental system plays a crucial role in normal fetal growth and development. Disorders in this system may lead to congenital anomalies and chromosomal abnormalities. Therefore, biochemical screening tests performed at different stages of pregnancy are considered an essential component of prenatal diagnostics.

Objective.To evaluate the clinical significance of biochemical screening tests conducted during the first and second trimesters of pregnancy and to determine the diagnostic value of key biochemical markers.

Materials and Methods. The study analyzed biochemical screening results obtained from pregnant women. Serum levels of alpha-fetoprotein (AFP), unconjugated estriol (uE3), placental lactogen (hPL), and inhibin A were measured using enzyme-linked immunosorbent assay (ELISA). The

results were assessed using specialized computer software in accordance with prenatal screening criteria.

Results and Discussion.An increase in AFP levels was associated with neural tube defects and multiple pregnancies, while decreased AFP levels indicated an increased risk of Down and of uE3 and hPL were indicative of placental insufficiency and delayed fetal development. Elevated inhibin A levels were found to be associated with an increased risk of chromosomal abnormalities and preeclampsia.

Conclusion. Biochemical screening tests play an important role in assessing maternal and fetal health, early detection of congenital anomalies, and appropriate management of pregnancy. These tests are an integral part of modern prenatal diagnostics.

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