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PRENATAL ECHOGRAPHY

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✓ ***Resume***

The somatic type determines the structure, topography of organs and systems, as well as the level of health and functional features of the body, including reproductive function. In the available literature, there are no systematic studies to identify the relationship between the anthropometric parameters of pregnant women and the fetometric parameters of the developing fetus.

Keywords: echography, fetometry, ultrasound, biparietal head size, doppler examination, cardiotocography.

ПРЕНАТАЛЬНАЯ ЭХОГРАФИЯ

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✓ ***Резюме***

Обзорная статья посвящена пренатальному эхографию. Соматический тип определяет строение, топографию органов и систем, а также уровень здоровья и функциональные особенности организма, в том числе репродуктивную функцию. В доступной литературе отсутствуют систематические исследования по выявлению взаимосвязи антропометрических параметров беременных и фетометрическими показателями развивающегося плода.

Ключевые слова: эхография, фетометрия, ультразвук, бипариетальный размер головки, допплерометрическое исследование, кардиотокография.

PRENATAL ECHOGRAPHY

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✓ ***Rezume***

Tadqiqot maqolasi prenatal echografiyaga bag'ishlangan. Somatik turi organlar va tizimlarning tuzilishi, topografiyasi, shuningdek, reproduktiv funktsiyani o'z ichiga olgan tananing salomatligi va funktsional xususiyatlarini belgilaydi. Mavjud adabiyotda homilador ayollarning antropometrik parametrlari va rivojlanayotgan xomilaning fetometrik ko'rsatkichlari o'rtasidagi munosabatlarni aniqlash bo'yicha tizimli tadqiqotlar mavjud emas.

Kalit so'zlar: echografiya, fetometriya, ultratovush, boshning biparietik hajmi, dopplerometrik tadqiqotlar, kardiotokografiya.

Relevance

The most important task of the obstetric and gynecological service is to improve the quality and effectiveness of prenatal diagnostics of growth and development.

Fetal development a modern component of this process is screening ultrasound fetometry [3,5]. To correctly assess the indicators of ultrasound data and reduce diagnostic errors, it is necessary to use the standards of fetometric indicators developed for a specific region. The development of personalized medicine, the formation of individual approaches to assessing the physical condition of the mother and fetus and their adaptive potential forces us to pay attention to the constitutional features of mothers, which undoubtedly have an impact on the process of fetal development [8,10].

The mother-fetus system is a combination of two independent organisms united by a common goal, a common end result-ensuring the normal development of the fetus. The main link between the mother and the fetus is the placenta. The placenta plays the role of a specific executive

organ of the mother and fetus, the reflexogenic zone of their organisms, providing an adequate response of the relationship between mother and fetus [5,9]. Therefore, to predict and diagnose the features of intrauterine fetal development and possible complications, it is important to study the effects of placental and maternal factors.

Providing long-term prognosis in the form in which there is an urgent need for perinatal obstetrics is possible only if an individual approach is taken to each pregnant woman. This approach is provided by modern clinical anthropology [5,7,10].

The anthropomorphological classification of the types of women's figures was developed by the Central Experimental and Technical Sewing Laboratory according to the degree of muscle development and fat deposition, the nature of their distribution over the body in the frontal and profile projections in the chest and thighs [1,3].

In total, according to the combination of types of figures in the front and profile projections, there are nine types of figures: three main and six combined.In the study of the physical development of women, in addition to BMI, other mass - growth indices are widely used: Penye, Broca, Rohrer [1,5,8].

Of course, the scheme of constitutional diagnosis of pregnant women and women in labor, proposed by H. T. Kaarma et al., deserves attention (2011). Studies have shown that women born with a low body mass index have an increased risk of severe preeclampsia at the onset of pregnancy and subsequently they maintained arterial hypertension. These patients had a high risk of placental insufficiency and premature detachment of the normally located placenta during pregnancy [2,5].

In addition, studies have been conducted in which women with low growth decreased the size of the pelvis, which had an impact on the method of delivery and the health of the newborn [3,7]. Currently, it can be considered proven that the somatic type determines the structure, topography of organs and systems, as well as the level of health and functional features of the body, including reproductive function [4].

The presence of constitutional features of the rate of intrauterine development of the fetus was first indicated by [5,9]. In the future, G. M. Savelyeva et al. (2014), it is proved that for the correct determination of gestational age and fetal weight according to the BPR of the head, it is necessary to take into account the growth of the mother. Women with small stature have lower rates of fetal glans BPR. The differences in the BPR of the head between the study groups (pregnant women with a height below and above 160 cm) are mainly 2-3 mm, which corresponds to its increase in 1-1. 5 weeks [6]. According to J. C. Das (2012), the relationship between the anthropometric measurements of mothers and their newborns is noted.

Foreign authors note that in women of the pycnitic type, chronic fetoplacental insufficiency is diagnosed significantly more often than in women of the asthenic and normosthenic somatotype [7].

According to the Russian authors, the indicators of resistance and systolic-diastolic ratio in the umbilical cord arteries and in the uterine arteries were higher in women of the macrosomic body type. At the same time, in the same work, it was noted that the lowest studied indicators were observed in patients of the mesosomatic body type. Hemodynamic disorders in the umbilical cord and uterine arteries in mesosomatic pregnant women were 3.2 and 1.2 times less common than in macrosomatic women [8].

It should be noted that the human somatotype has long attracted the attention of representatives of theoretical and practical medicine, which results today in the formation of personalized medicine. Somatotyping is performed according to various criteria, and there are a significant number of classifications. Modern visualization techniques allow us to obtain a sufficient amount of information about the anatomometric features of the fetus.

The basis of normal growth and development of the fetus is adequate blood circulation in the fetoplacental system. Currently, one of the most informative methods for assessing blood flow in the fetus and in the placenta is a Doppler study. Doppler study of blood flow in the utero-placental and placental regions.

It is extremely important because it detects disorders at the preclinical level, which allows for timely prevention of fetal disorders. In a qualitative study of blood flow, the main value is not the absolute value of the speed of blood movement, but the ratio between the speed of blood flow in different phases of the cardiac cycle. The most commonly used systolic-diastolic ratio, pulsation index, and resistance index. Doppler blood flow assessment in the umbilical artery is a highly informative method for assessing fetal-placental blood flow, fetal functional status, diagnosis of placental insufficiency, and prediction of perinatal outcomes.

Currently, many researchers have proven a directly proportional relationship between the severity of preeclampsia and the frequency of severity of blood flow disorders in the uterine arteries. Disorders of the utero-placental blood flow can be considered as an objective indicator of

the severity of preeclampsia, regardless of its clinical manifestations [9]. According to Dodkhoeva M. D. and co-authors (2011) the highest indicators of body weight, mass-growth index were in newborn mothers of mesosomatic body type, the lowest in children born to mothers of microsomatic type. The smallest number of children of mesosomatic mothers were born in the state of asphyxia. Shatrova O. A. (2014) notes that in a comparative analysis of the anthropometric indicators of children, the mass of children in there are significantly more women of the normosthenic body type than in other comparison groups. It was noted that the newborns of mothers of the normosthenic type had significantly longer body length, in contrast to the newborns of women of the picnetic type. Significant difficulties arise in the differential diagnosis of the symmetrical form of intrauterine development delay and the constitutional features of the fetus.

Studies of foreign authors have proved that up to 60% of low-gestational weight newborns do not have signs of fetal development restriction syndrome. To distinguish between the symmetrical form of fetal development restriction syndrome and the constitutional features of the fetus, it is necessary to conduct dynamic echographic observation to assess the growth rate of fetometric indicators. If the growth rate is normal and there are no signs of intrauterine distress according to cardiotocography and dopplerography, this indicates the constitutional features of the fetus [10]. There is an opinion that among the factors predisposing to the birth of a large fetus, a certain place belongs to the constitutional features of the mother [10]. Mothers of large children usually have a high growth and a large mass themselves.

Ultrasound fetometry is considered one of the most reliable sources of prenatal diagnosis in obstetric practice. When studying fetometric indicators, the main attention is paid to the biparietal size of the fetal head, the circumference of the abdomen, and the length of the thigh. Fetometry is a mandatory component of ultrasound in obstetric practice and allows you to establish the correspondence of the size of the fetus to the term of pregnancy and to assess the rate of its growth. Currently, formulas for determining body weight and estimated indices are used. Important information about the condition of the fetus is provided by the analysis of its motor and respiratory activity. The presence of regular repetitive fetal movements in the presence of meconium in the amniotic fluid is a risk factor for the development of aspiration syndrome. Significant importance is given to ultrasound placentography, which allows us to determine its localization, structure, degree of maturity and magnitude.

In the diagnosis of the fetal condition, the characteristics of amniotic fluid also play an important role. The formation of low water content and the appearance of an echogenic suspension may indicate an admixture of meconium in the waters due to severe fetal hypoxia. Changes in the volume and nature of amniotic fluid can be observed in some fetal malformations, ascending intrauterine infection, and postponed pregnancy. Echographic examination of the fetus should be supplemented with methods of functional assessment of the fetoplacental system, so it is necessary to conduct a functional assessment of the state of the mother-placenta-fetus system using cardiotocography, ultrasound dopplerometry.

Cardiotocography (CTG) is one of the most widely used methods of functional assessment of the fetus. The most widely used non-stress test, which evaluates the nature of fetal cardiac activity in vivo. However, due to the timing of the formation of the myocardial reflex after 32 weeks, a visual assessment of the cardiotocogram is possible only in the third trimester of pregnancy. Currently used in clinical practice, the methods of visual and score assessment of CTG can detect the presence or absence of fetal disorders with an accuracy of 68-76%. Analyzing the cardiograms, you can judge the change in the fetal heart activity in response to its movements, excitements of the uterus and other external influences. Currently, computer processing of cardiotocography data with the calculation of the fetal health index is widely used. The use of automatic computer analyzers of cardiotocograms allows to avoid visual subjectivity in the assessment of fetal heart activity curves and to increase the diagnostic value of the method.

Currently, it can be considered proven that the somatic type determines the structure, topography of organs and systems, as well as the level of health and functional features of the body, including reproductive function.

However, there are no systematic studies in the available literature to identify the relationship between the anthropometric parameters of pregnant women and the fetometric parameters of the developing fetus.

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