



13,4042 pg/ml) comparing to normal pregnancies (14,60 pg/ml, 95% confidence interval for mean 9,58 – 23,79 pg/ml,  $P=0,00101$ ). No significant difference in daytime of delivery was found between the groups.

The concentration of melatonin in umbilical blood at labor is significantly lowered in case of IUGR, comparing to normal pregnancies. This fact, as we consider, is caused by altered production of melatonin by placenta. Therefore, the protective action of melatonin for the fetus at labor is decreased in case of IUGR.

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**FEATURES OF THE VASCULAR COMPONENT AT THE STAGE OF THE PLACENTAL  
COMPLEX FORMATION AGAINST A BACKGROUND OF INFLAMMATORY  
DISEASES OF THE FEMALE GENITAL ORGANS**

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One of the main complications during early embryogenesis and placentation is placental dysfunction. Under the influence of various factors, namely infectious, which, depending on the biological peculiarity, badly affect the germ cells of the parents, embryo development, trophoblast and placenta formation, which, in its turn, leads to placental dysfunction and gestational complications during pregnancy

According to this goal, an ultrasound examination was performed on 67 women at 6-7 and 12-14 weeks of gestation. The main group consisted of 37 women with signs of inflammatory diseases of the female genital organs, and 30 practically healthy women constituted the control group.

To identify the patterns of the vascular component formation against a background of inflammatory diseases of the female genital organs and at physiological pregnancy, the volume of chorionic tissue was determined at the stage of the placental complex formation. It has been determined that gradual increase from 5,5 to 15,8 cm<sup>3</sup> till the 13<sup>th</sup> week of gestation occurred in chorionic tissue in women of the control group in the first trimester of pregnancy, in addition to that a villi wave-like growth almost twice till 34,6 cm<sup>3</sup> occurs during 2 weeks in the period of completion of the chorionic volume formation. Nevertheless, it has been established that chorionic tissue area was within 2.3 till 7.4 cm<sup>3</sup> till the 13<sup>th</sup> week of gestation in the vast majority of women of the main group-32 (86.5%), but during the period of chorion volume formation the villi wavy growth was not recorded and volume indices reached till 17.8 cm<sup>3</sup>.

The following parameters were used in the study of the blood flow in the intervillous space: VI - vascularization index, which reflects the percentage of vascular elements of the placental tissue volume under study; FI - blood flow index, which reflects the number of blood cells transported at the time of the study.

In the study of the blood flow in different parts of the chorion in women of the control group it was diagnosed that during pregnancy up to 11 weeks of gestation, hermophroditism of the blood circulation in the peripheral and central areas was not detected. Thus, the blood flow indices in the central zone VI reached 15.1, FI -36.1, and in the peripheral zone VI-12.8, FI -30.0. However, in women of the main group VI in the central area it was 8.9, and in the peripheral zone VI - 14.6, FI - 33. After 12 weeks of pregnancy in women of the control group vascular hermophroditism was expressed - the index of vascularization in the central area significantly exceeded blood flow VI - 20.8, FI-55.6 in comparison with the peripheral regions of the chorion VI-7.7, FI -33.6. Vascularization index in the central zone VI-9.7, FI-35.1 almost did not exceeded the indices of the peripheral area of chorion VI-6.9, FI -31.4 in women of the main group.

Impaired blood flow in the first trimester of gestation against a background of infectious factor, that penetrates into various vascular parts of the mother-placenta-fetus system, with calculation of indices of blood flow volume demonstrates the regularity formation of the impaired hemodynamics at the stage of placental complex formation. These indicators can serve as a criterion for the selection of women at risk for the formation of primary placental dysfunction.