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MARKERS OF PRIMARY PLACENTAL DYSFUNCTION IN PREGNANT WITH LOW PLACENTATION

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Placental dysfunction (PD) is one of the causes resulting in antenatal fetal lesion including its hypoxia, hypotrophy, ante- and intranatal distress. Chorion and placenta position in the uterine cavity plays an important role in PD formation. Occurrence of abnormal placentation in I trimester is rather high. It is diagnosed in 9-30% of pregnant women. In the period of full-term pregnancy placental presentation is found in 0,3-1,04% of cases, and low placentation iny 9,1% of pregnant women. Low placentation is placenta position in the inferior uterine segment. According to the data of many scientists occurrence of disorders in the mother-placenta-fetus system with abnormal placentation is 60-80%. Disorders of physiological mechanisms of the ovum formation, rudiments of the organs and tissues of the embryo, development of the fetal-placental system occurring in the first trimester of gestation, are the causes of development of obstetrical complications during later terms. They increase the risk of complicated labor and postnatal period. Therefore, the objective of our study was to determine markers of primary placental dysfunction in pregnant women with low placentation.

Materials and methods - 52 pregnant women in 5-6 weeks, 7-9 weeks and 10-12 weeks of pregnancy were examined. The main group included 30 women with low chorion position. The control group consisted of 22 women with physiological course of pregnancy and normal placentation. Ultrasound study in addition to a routine fetal examination investigated echographic parameters of the adnexa (the volume of the yellow body, ovum, umbilical vesicle). Functional state of the extra-embryonic circulation was assessed by means of multi-component Doppler examination of hemodynamics of the yellow body and umbilical vesicle.

The studies conducted demonstrated that the volume of the ovum cavity was reliably smaller in the pregnant women with abnormal chorion position in comparison with the control group (14,6±6,9 against 20,8±12,2; $p<0,05$). An average volume of the yellow body in the pregnant women from the main group was reliably smaller than that of the control (3.3±0,52 cm^3 against 5,6±0,64 cm^3, $p<0,05$). The signs of vascularization disorders of the yellow body found by means of Doppler examination were diagnosed in 93,6±0,9% of pregnant women with abnormal chorion position against 6,7±0,7% in the control ($p<0,05$). In 65,4±0,9% of pregnant women from the main group the vascular network of the yellow body was determined in the form of scattered color peripheral loci and in 26,9±0,7% of the examined women blood flow was registered in the form of single color loci.

Occurrence of sonographic signs of the yellow body defects was reliably higher as well (57,0±1,7% against 6,7±1,9%, $p<0,05$). Thus, in 5 (17,8%) pregnant women from the main group the size of the umbilical vesicle differed reliably from that of the control ($p<0,05$). In particular, 3 (10,7%) patients were diagnosed to have hypertrophy of the umbilical vesicle, that is, its average diameter was 6mm longer. In 2 (7,1%) cases its hypoplasia was found – an average diameter 2 mm shorter. In 4 (14,3%) cases an irregular shape of the umbilical vesicle was diagnosed, and in 2 (7,1%) cases – degenerative changes.

Thus, predictors of placental dysfunction formation with underlying low placentation are lack of the yellow body, decrease of its average diameter, lack of the umbilical vesicle and/or sonographic signs of its "abnormality" available. Doppler-metric signs of disorders in the formation of the "mother-placenta-fetus" complex are decreased vascularization of the yellow body (scattered or single loci found by Doppler) and the umbilical vesicle.