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IMMUNOHISTOCHEMICAL QUANTITATIVE EVALUATION OF 11 β -HYDROXYSTEROID-DEHYDROGENASE IN SYNCYTIOTROPHOBLAST OF GRAVIDAS WITH IRON-DEFICIENCY ANEMIA AND PRETERM MATURING OF CHORIAL PLACENTAL TREE

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Preterm maturation of the chorial tree is found in the materials after abortions and during preterm labour. In case of terminal delivery - 37-40 weeks of gestation, the chorial tree possesses the signs of much more maturation than in case of physiological pregnancy, and this condition is not called preterm maturation but chorial tree hypermaturity. The labour is considered to be preterm beginning from the full-time 22nd till full-time 36th week of gestation.

Evaluation of the immunohistochemical concentration of the enzyme 11 β -hydroxysteroid-dehydrogenase (11 β -HSD-2) is necessary to specify the mechanisms of preterm maturation of the chorial placental tree and preterm labour. It was first performed in gravidas with iron-deficiency anemia.

The objective is to determine the immunohistochemical concentration of 11 β -HSD-2 in syncytiotrophoblast in the observations of preterm maturation of the placental chorial tree in gravidas with iron-deficiency anemia in two different periods of gestation – 29-32 and 33-36 weeks of gestation. 63 placentas were examined. The research design was provided for the allocation of two major groups of the above mentioned gestation periods and comparison group respectively. The immunohistochemical concentration of 11 β -HSD-2 was analyzed on the basis of the value of optical density, which was measured by means of computed microdensitometry.

Immunohistochemical staining for 11 β -HSD-2 was observed in the cytoplasm of the syncytiotrophoblast in placentas of all groups studied. Immunohistochemical concentration of 11 β -HSD-2 in preterm maturation of the placental chorial tree without anemia in both gestation periods exceeds the concentration of the enzyme in physiological gravidity. Immunohistochemical concentration of 11 β -HSD-2 in preterm labor against the background of iron-deficiency anemia in both gestation periods studied is similar to concentrations in physiological gravidity. In groups with iron-deficiency anemia the indices of immunohistochemical concentration of the enzyme 11 β -HSD-2 are always lower in comparison with those observations without anemia.

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PLACENTAL ALKALINE PHOSPHATASE IN TROPHOBLAST OF THE PLACENTA IN GRAVIDAS WITH IRON DEFICIENCY ANEMIA IN TERMS OF THE PRETERM MATURING OF CHORIAL PLACENTAL TREE IN GESTATIONAL ASPECT

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At present the influence of iron-deficiency anemia of the gravidas (IDAG) upon the morphology of preterm maturation of the chorial tree is not studied, but only there are observations of an opposite condition available – chorial tree immaturity in case of IDAG. At the same time, the combination of preterm maturation of the chorial tree and IDAG is highly probable, as the frequency of anemia of pregnancy is rather high; it varies from 28% to 84% according to the data of the world statistics. In Chernivtsi region, in particular, the frequency of anemia of pregnancy according to the official statistical data was within the range of 30,8-31,4%.

The objective was to determine the immunohistochemical concentration and activity of placental alkaline phosphatase in syncytiotrophoblast in the observations of preterm maturation of the placental chorial tree in gravidas with iron-deficiency anemia in different periods of gestation.

Placental alkaline phosphatase was studied by means of immunohistochemistry (which gives an idea of the enzyme concentration) and by azocoupling (which gives an idea of the enzyme activity) in histological sections of various placental gestational periods. 58 placentas were examined. The research design was provided for the allocation of one major group of the above mentioned gestation periods and comparison group respectively.

The following may be concluded: the concentration of placental alkaline phosphatase and its activity in preterm labor regardless of the maturation degree in the chorial placental tree and of the blood state of gravidas is significantly lower as compared to that of the physiological gravidity. Thus, the same pattern is observed in segments under study (gestational periods of 29-30, 31-32, 33-34, 35-36 weeks) in terms of the concentrations of placental alkaline phosphatase in the chorial villi trophoblast.

The concentration of placental alkaline phosphatase, in particular, is always lower in anemia of gravidas as compared to the observations without anemia, and the fact of the chorial placental tree prematuration does not have significant importance. There is a difference in average indicators between different segments of gestation concerning the placental alkaline phosphatase activity in trophoblast of the chorial villi. The gestational periods of 33-34 and 35-36 weeks are characterised by the accordance of change patterns of the placental alkaline phosphatase activity to the patterns of immunohistochemical concentration and namely there is a decrease in the enzyme activity in the gravidas with iron deficiency anemia. However, in the gestational period of 29-30 and 31-32 weeks placental alkaline phosphatase activity in trophoblast of the chorial villi does not depend on the blood state of gravidas.