PREDICTING THE RISK OF PREECLAMPSIA IN THE EARLY STAGES OF PREGNANCY

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Objective: Preeclampsia remains a significant medical and social problem worldwide, occurring in 2-8% of pregnant women. Moderate preeclampsia is noted in 3-8% of pregnant women, severe - in 1-2%. According to WHO, in 2014, hypertensive diseases during pregnancy ranked 2nd in the structure of maternal mortality in the world, accounting for 14%. In 2014, it accounted for 15.7% of maternal losses. Preeclampsia is complicated by eclampsia in 0.03-0.1% of cases and HELLP syndrome in 0.17-0.8% of cases, increasing the risk of retinal detachment and cerebrovascular accidents, placental abruption and obstetric hemorrhage. The consequences of severe preeclampsia and eclampsia reduce the quality of life of a woman in the future (high rates of atherosclerosis, diabetes, cardiovascular diseases). The frequency of physical and psychosomatic developmental disorders in children born prematurely to mothers with preeclampsia, as well as the risk of developing somatic diseases in them in the future, is very high.

Materials and methods of research: A well-known method for predicting the development of severe preeclampsia using a blood test is to calculate the leukocyte intoxication index in a pregnant woman in the second trimester and predict the development of severe preeclampsia if its value is higher than 1.6. The disadvantage of this method is the late detection of the predictor (only in the second trimester of pregnancy) and the prediction of the development of severe preeclampsia only. In addition, there is no information on the sensitivity and specificity of this method for predicting severe preeclampsia. There is a known method for predicting the risk of developing preeclampsia based on a combination of cytokine genes, described in the RF patent of the same name No. 2568891 by class. G01N 33/52, C12Q 1/68, h. 28.08.14, publ. 20.11.15.

Research results: DNA isolation, analysis of cytokine gene polymorphisms and prediction of the minimal risk of developing preeclampsia based on cytokine genes for three combinations of

genetic variants of four genetic polymorphisms: G I- TAC (rs4512021) and +36 GG TNFR1; +250 A Lt a , G I- TAC (rs4512021) and +36 GG TNFR1; +250 G Lt a (rs909253), +36 A TNFR1 (rs767455), -403 G/A RANTES (rs2107538).

The disadvantage of this known method is that its operational capabilities are somewhat limited, as it is intended only for Russian women from the Central Black Earth region and is difficult to implement due to the need to isolate DNA.

In RF patent No. 2304783 (20.08.2007), the content of angiogenic factors sFlt-1 and PIGF in the blood of pregnant women with clinical and laboratory diagnosis of placental insufficiency is determined, then the angiogenic coefficient Ka is calculated using the formula: Ka = sFlt-1/(PIGF ×10) and if Ka is 250 or more, the pregnant woman Placental insufficiency predicts the development of preeclampsia.

The disadvantages of this method are the inability to predict the development of preeclampsia in advance, the limited number of patients to whom this prognostic model can be applied, and the limited range of preventive measures.

The essence of the method is that the concentration of neurospecific enolase and gliofibrillary acidic protein in the blood serum is determined starting from the 22nd week of pregnancy. The development of gestosis in pregnant women is predicted if the value of neurospecific enolase is above 12.4 ng / ml and gliofibrillary acidic protein is above 4 ng / ml. In this case, severe gestosis is predicted if the value of neurospecific enolase is 19 ng / ml and above and gliofibrillary acidic protein is 10 ng / ml and above.

Conclusion : Immunological study: in the first trimester of pregnancy, the ELI-P-Complex-12-test was performed, the essence of which is the semi-quantitative determination of the content in the serum of 12 regulatory autoantibodies by enzyme-linked immunosorbent assay (human chorionic gonadotropin, double-stranded DNA, beta-2-glycoprotein, Fc fragment of immunoglobulins, auto-Abs of the IgG class interacting with collagen; sperm antigen SPR-06, protein 100, platelet antigen TrM-03, vascular endothelial antigen ANCA, insulin, thyroglobulin and kidney antigen KiM-05), the average individual level of immunoreactivity, as well as the degree of deviation in the content of auto. -AB from the norm (weak or strong), the vector of deviation from the norm (“decrease” or “increase”) in the content of auto-AT, as well as the “imbalance” with a multidirectional deviation of autAT. Auto AT values from -20 to +10 are normal, from -30 to -20 and from +10 to +20 are slight deviations from the norm, and below -30 and above +20 are clear deviations from the norm.

In the process of immunological examination, the serum level of the hormone erythropoietin is determined by calculating the coefficient of adequacy of its production and assessing the degree of adequacy of erythropoietin production, taking into account the possible involvement of erythropoietin in the pathogenesis. The development of this pregnancy complication, since this hormone activates angiogenesis, has mitogenic and antiapoptotic effects, including in the placenta, which allows it to be used as an early predictor of preeclampsia.

When conducting Doppler measurements of the uterine arteries at 11-14 weeks, the use of grouping indicators of the systolic-diastolic ratio according to the maximum and minimum numerical values of the "angle-independent" indices allows, without focusing on the localization of the amniotic sac, an accurate and very simple assessment of the blood flow velocity in them.

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