



Dynamics of Hemostasiogram Parameters in Pregnant Women with Chronic Placental Insufficiency

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Abstract: In the first multidisciplinary clinic of the Samarkand State Medical University for 2019-2022, a study of hemostasiological parameters of 105 pregnant patients with chronic placental insufficiency was conducted. The patients were divided into two groups depending on the method of treatment - the main group and the comparison group. The study showed positive dynamics of hemostasiogram in patients of the main group after complex treatment with the inclusion of medical ozone and plasmapheresis.

Key words: fetoplacental barrier, ozone therapy, plasmapheresis, placenta, mother-placenta-fetus system, placental insufficiency (PI).

Relevance. A variety of factors (toxic, pharmacological, infectious, etc.) and hormonal, immunological disorders, obstetric and extragenital pathology of the mother can lead to dysfunction of the placenta [9, 11, 14].

Identification of PI includes the diagnosis of both this clinical syndrome and the underlying cause that caused it. Diagnosis of chronic PI should be timely and comprehensive. In recent years, there has been a new direction in the study of the pathogenesis of PI. These are reports on growth factors (GF) - biologically active compounds that stimulate or inhibit the division and differentiation of various cells and are the main carriers of the cell's mitogenic signal. GFs play an important role in embryogenesis, in the process of differentiation of embryonic tissues [12, 17, 21].

The greatest attention of researchers is attracted by vascular endothelial growth factor, which was first described as a vascular permeability factor, since it significantly increases the permeability of microvessels (50,000 times stronger than histamine), which creates conditions for the reproduction and migration of endothelial cells [8, 14, 29]. It can be detected in maternal plasma starting from 6 weeks of gestation, its maximum concentration is reached by the end of the 1st trimester [14, 19, 26]. Hemostasiogram parameters are also important for determining the degree and prevention of complications of PI in patients.

Apparently, there can be no standard treatment regimen for chronic PI due to numerous combinations of etiological factors. In this case, the selection of drugs should be carried out individually in each case, taking into account the severity and duration of the course of PI [1, 5, 8, 16]. In addition, it is necessary to develop new methods of treating these patients with the improvement of existing ones.

Purpose of the study: To study the dynamics of hemostasiogram indicators in pregnant women with chronic placental insufficiency depending on the method of treatment

Materials and methods. All laboratory analyzes were carried out in the laboratory department of multidisciplinary clinic No. 1 of SamSMU. This study analyzed the hemostasiogram parameters in 105 pregnant women in the second trimester with chronic placental insufficiency. The first group included 55 pregnant women with chronic placental insufficiency who received complex treatment with plasmapheresis in combination with medical ozone. 2nd group (comparison) - 50 pregnant women with chronic placental insufficiency, who used conventional methods of drug treatment.

The study used clinical examinations using standard methods (allergological history, heredity, concomitant diseases, menstrual and reproductive function, the presence and nature of complaints, assessment of the course of pregnancy, physical examination (general and obstetric), standard laboratory methods and hemostasiogram parameters.

Results and discussion. There were no statistically significant differences between the groups in terms of complications of the II-III trimester of pregnancy ($p>0.05$). Patients of both the main and comparison groups had acute or recurrences of chronic bacterial and/or viral infections during pregnancy. According to the frequency of anemia in the main group after the treatment, a more distinct positive clinical dynamics was observed: the persistence of anemia was recorded in 7 cases (12.7%) compared to 13 (26%) in the comparison group.

The results of the study showed that in both groups there were signs of activation of intravascular coagulation, which, apparently, is characteristic of patients with chronic placental insufficiency against the background of a complicated course of pregnancy, a high content of fibrinogen was noted, in addition, structural and chronometric hypercoagulation was noted along thromboelastogram data. After the therapy, both in the main group and in group 2, there was a significant decrease in the level of fibrinogen (in the main group by 25% and amounted to 4.2 g/l, in group 2 by 15.8% and amounted to 4.8 g/l). Indicators of platelet aggregation (in the main group by 24.3% and amounted to 44.3%, in group 2 - by 20.8% and amounted to 45.4%) and prothrombin index (in the main group by 18.5% and amounted to 96.4%, in group 2 - by 15.5% and amounted to 99.2%), ($p<0.01-0.001$).

The analysis of thromboelastogram data showed that after the treatment in pregnant women of both groups, the indicators significantly increased (in the main group by 28.3% and amounted to 25.4 mm, in group 2 - by 15.5% and amounted to 26.1 mm), $p<0.001$ compared with the initial data, the thrombodynamic potential index (ITP) decreased by 38.9% in the main group and amounted to 11.3 conventional units, in group 2 - only by 10.7% and amounted to 15, 9 conventional units, $p>0.05$.

Conclusions: Thus, the timely complex therapy of PI, both traditional and with the use of efferent methods and ozone, contributed to the correction of changes in the blood coagulation system and the normalization of the hemostasiological picture of the examined patients, however, in the main group, there is a more significant stabilization of the blood coagulation potential due to both plasma and platelet units.

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