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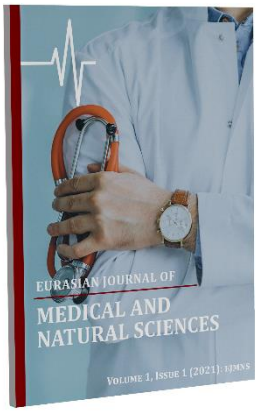

CAUSES AND PREVENTION OF EARLY POST-PREGNANT BLEEDING

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ABSTRACT

Obstetric hemorrhages are among the top three causes of maternal death. At the same time, early postpartum hemorrhage occurring in the first 24 hours after birth accounts for a quarter of all maternal deaths worldwide. Changes in the blood coagulation system during pregnancy consist in a constant decrease in fibrinolytic activity and an increase in blood coagulation. These changes have a pronounced adaptive character and are aimed primarily at reducing the volume of physiological blood loss during childbirth. The article discusses the most common causes and risk factors for postpartum hemorrhage. The possibilities of treatment of postpartum hemorrhage are presented. The prophylactic use of tranexamic acid in patients at risk is recommended. Tranexamic acid is an antifibrinolytic agent. It has a local and systemic hemostatic effect in bleeding associated with an increase in fibrinolysis. The review presents current literature data on the possibilities of using tranexamic acid. It has been shown that the use of tranexamic acid reduces mortality among women with bleeding in the early postpartum period, regardless of the mode of delivery and without increasing the risk of thromboembolic complications. Some authors suggest a possible routine use of the drug in order to prevent increased blood loss in childbirth during caesarean section, which is especially important in risk groups for the development of bleeding.

Relevance. In recent years, there has been a decrease in the level of maternal mortality in developed countries (for the period 2000–2019, maternal mortality in the world decreased by almost 44%). This is probably due to the active implementation of the principles of evidence-based medicine and modern effective protocols for managing patients. Maternal mortality is an important criterion for assessing the quality of obstetric care throughout the world.

Obstetric bleeding continues to be among the top three causes of maternal morbidity and mortality, along with infectious complications and high blood pressure during pregnancy (preeclampsia and eclampsia).

Early postpartum hemorrhage, occurring within the first 24 hours after

birth, accounts for a quarter of all maternal deaths worldwide. In 2020, in Uzbekistan, the maternal mortality rate from bleeding during childbirth and the postpartum period was 6.4%. The frequency of bleeding in the early postpartum period ranges from 3 to 15% of all deliveries. These fluctuations are partly due to the use of different management protocols and diagnostic methods, as well as the lack of a well-defined time interval for the early postpartum period - in some countries, the early postpartum period is considered to be 2 hours after birth, in others - 24 hours.

Approximately in every fifth case, bleeding becomes massive, which threatens the health and life of the mother, increases the need for resuscitation and transfusion of blood components, which, in turn, leads to an increase in financial costs for the treatment and rehabilitation of the patient. The frequency of severe maternal morbidity is 0.5–15% of all births, and its main cause is bleeding in the early postpartum period.

In Uzbekistan, the incidence of bleeding in the afterbirth and postpartum periods was 10.8% of all births in 2021 and 10.9% in 2020.

During pregnancy, physiological changes occur in a woman's body in almost all systems, which contributes to better adaptation of the mother's body to changing conditions as the gestation period increases and the successful course of pregnancy and childbirth.

Features of the blood coagulation system during pregnancy

Changes in the blood coagulation system during pregnancy consist in a constant decrease in fibrinolytic activity and an increase in blood coagulation. These changes have a pronounced adaptive character and are aimed primarily at reducing the volume of physiological blood loss during childbirth. Normally, changes in the hemostasis system are proportional to the gestational age: from 6–8 weeks. the volume of circulating blood increases, reaching a maximum by 30 weeks, there is a slight decrease in the level of platelets, the content of procoagulants increases, while the activity of factors of the fibrinolytic system, on the contrary, decreases. By the time of delivery, the concentrations of fibrinogen, prothrombin, proconvertin, factor VIII, Hageman factor double, with the exception of factors XI and XIII, the level of antithrombin III, protein C decreases, and the level of protein S is reduced during pregnancy and after childbirth. At the end of the third trimester of pregnancy, an increase in prothrombin time is noted, which indicates an increase in thrombin generation and activation of the external pathway of blood coagulation. This process progressively increases with increasing gestational age, remains high during childbirth and decreases during the first few days of the postpartum period. By the end of pregnancy, there is a sharp decrease in fibrinolytic activity.

These mechanisms are compensatory-adaptive in nature and are necessary both for the normal formation of the fetoplacental complex and for limiting blood loss during childbirth. In general, the physiological meaning of hypercoagulation during pregnancy is to ensure the immunological tolerance of the mother's body to the growing fetus and prepare for the birth process, when a quick stop of bleeding is necessary after the separation of the placenta.

Thus, an increase in hemostatic potential during pregnancy provides physiological hemostasis during placental

separation, which, together with smooth muscle contraction, stops bleeding from the vessels of the placental site.

Causes of postpartum hemorrhage and the possibility of reducing blood loss

The most common causes of postpartum hemorrhage are: violation of uterine contraction (hypotension or atony), retention of parts of the placenta or blood clots in the uterine cavity, trauma to the birth canal and rupture of the uterus, disorders of the blood coagulation system. Risk factors for postpartum hemorrhage are: aggravated hemorrhagic history, history of antenatal or postpartum bleeding, initial disorders in the hemostasis system (von Willebrand disease, thrombocytopenia, thrombocytopathy, chronic disseminated intravascular coagulation syndrome, leukemia, etc.), placenta previa, placenta rotation, protracted labor (especially with labor induction), uterine fibroids or myomectomy during caesarean section, multiple pregnancy, large fetus or polyhydramnios, multiparous (multiparous - more than 3 births), obesity II-III degree, the age of the mother over 40 years. However, most women who bleed in the early postpartum period do not have risk factors for bleeding. Given the above, it is especially important to prevent bleeding in the afterbirth and postpartum periods for all women, regardless of the presence of risk factors.

To date, in order to reduce the volume of blood loss after childbirth, active management of the third stage of labor is widely used, including the prophylactic administration of uterotonics immediately after the birth of a child, active traction for the umbilical cord, and uterine massage. The use of oxytocin in the third stage of labor reduces the risk of blood loss over 500 ml by 50% and over 1000 ml by 40%. However, two large randomized controlled trials show that active cord traction, as well as uterine massage, does not significantly affect the incidence of postpartum haemorrhage. Thus, the administration of oxytocin after childbirth is the only effective method for preventing bleeding in the postpartum period.

However, in recent years, data have appeared on the advisability of using prohemostatic drugs to prevent bleeding along with the administration of oxytocin.

Conclusion. So, in recent years, data have appeared that indicate a decrease in blood loss after childbirth and during cesarean section operations while taking tranexamic acid. In this regard, a number of authors suggest a possible routine use of the drug in order to prevent increased blood loss during childbirth and caesarean section. Such a preventive approach is of particular importance in risk groups for the development of bleeding (in women with thrombocytopenia, with uterine myoma, low placental attachment, etc.). The prophylactic use of tranexamic acid to prevent bleeding in the early postpartum period continues to be studied.

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