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# PREECLAMPSIA DURING PREGNANCY AS A PRESSING PROBLEM IN OBSTETRICS: CAUSES, DIAGNOSIS AND TREATMENT

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**Abstract**
Preeclampsia remains one of the most pressing and challenging issues in modern obstetrics, being a leading cause of maternal and perinatal morbidity and mortality. This pregnancy complication is characterized by a multifactorial etiology, complex pathogenetic mechanisms, and a variety of clinical manifestations, which complicates early diagnosis and timely treatment. This article examines current understanding of the causes of preeclampsia, its main pathogenetic components, clinical presentation, and diagnostic criteria. Particular attention is paid to current approaches to the management of pregnant women with preeclampsia, principles of drug therapy, and the prevention of severe complications. A summary of current data highlights the importance of early identification of risk factors and a comprehensive, interdisciplinary approach to preeclampsia treatment to improve pregnancy outcomes for both mother and fetus.

**Keywords**: Preeclampsia; pregnancy; obstetrics; arterial hypertension; pregnancy complications; diagnosis; treatment; maternal and perinatal morbidity.

## Introduction

Preeclampsia is one of the most severe and socially significant complications of pregnancy, posing a serious threat to the health and life of both mother and fetus. Despite significant advances in perinatal medicine and obstetrics, this condition remains a leading cause of maternal and perinatal morbidity and mortality in many countries worldwide. The relevance of preeclampsia is due to its high prevalence, unpredictable course, and the risk of developing severe complications, including eclampsia, acute renal failure, pulmonary edema, cerebrovascular accidents, and intrauterine growth retardation.

Current understanding of preeclampsia considers it a multifactorial disease, rooted in complex disturbances of placentation, endothelial dysfunction, and a systemic inflammatory response. Genetic, immunological, and vascular factors, as well as concomitant extragenital diseases of the pregnant woman, play a significant role in its development. The diversity of pathogenic mechanisms results in polymorphic clinical manifestations and variability in disease severity, often complicating early diagnosis and the selection of optimal pregnancy management strategies.

Therefore, studying the causes of preeclampsia, improving diagnostic criteria, and implementing modern approaches to treatment and prevention of complications is of particular importance. A comprehensive analysis of modern scientific literature and clinical practice data not only allows for a deeper understanding of this pathological condition but also improves the effectiveness of obstetric care aimed at reducing maternal and perinatal risks.



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## Main part

Preeclampsia is a multisystem pathological condition that develops after the 20th week of gestation and is characterized by new-onset hypertension combined with proteinuria or end-organ damage [1]. This pregnancy complication is associated with high rates of maternal and perinatal morbidity and mortality [2]. The overall prevalence of preeclampsia is approximately 2–8% of pregnancies; rates may be higher in resource-limited settings, and the risk of adverse outcomes is increased by limited access to prenatal care [3].

The dominant pathogenesis model links the disease to placentation abnormalities , an imbalance of angiogenic and antiangiogenic factors (e.g., VEGF, PlGF , and sFlt-1), endothelial dysfunction, and systemic inflammation [45]. Molecular studies are identifying biomarkers associated with trophoblast hypoxia and immune reactivity, including genetic and microRNA profiles, which may facilitate the development of new targeted therapies [6].

## Risk factors

Risk factors include genetic and reproductive factors (first pregnancy, family history), as well as maternal comorbidities (chronic hypertension, kidney disease, metabolic disorders, obesity) [7]. Increased maternal age and the use of assisted reproductive technologies are also associated with an increased risk [8]. Systemic inflammatory conditions, such as chronic periodontitis, may be an additional risk factor [9].

## Clinical presentation and diagnostics

Classical diagnosis is based on elevated blood pressure (≥140/90 mmHg) and urinary protein (≥0.3 g/24 h) after the 20th week of pregnancy [10]. Clinical manifestations range from asymptomatic to severe forms with organ damage [11]. Symptoms include headaches, visual disturbances, upper abdominal pain, edema, and liver and kidney dysfunction. Severe forms can lead to eclampsia, HELLP syndrome, and multiple organ failure.

Current recommendations include combined screening using biomarkers ( PlGF , PAPP-A), uterine blood flow indicators and clinical factors for early detection of the risk of developing preeclampsia [12].

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[1] Steegers E.A.P., von Dadelszen P., Duvekot J.J., Pijnenborg R. *Pre-eclampsia.* The Lancet. 2010; 376(9741): 631–644.
[2] Duley L. *The global impact of pre-eclampsia and eclampsia.* Seminars in Perinatology. 2009; 33(3): 130–137.
[3] World Health Organization (WHO). *WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia.* Geneva: WHO; 2011.
[4] Roberts J.M., Hubel C.A. *The two stage model of preeclampsia: variations on the theme.* Placenta. 2009; 30(Suppl A): S32–S37.
[5] Redman C.W.G., Sargent I.L. *Placental stress and pre-eclampsia: a revised view.* Placenta. 2009; 30(Suppl A): S38–S42.
[6] Levine R.J., Lam C., Qian C., et al. *Soluble endoglin and other circulating antiangiogenic factors in preeclampsia.* N Engl J Med. 2006; 355(10): 992–1005.
[7] Brown M.A., Magee L.A., Kenny L.C., et al. *Hypertensive disorders of pregnancy: ISSHP classification, diagnosis, and management recommendations.* Hypertension. 2018; 72(1): 24–43; Sibai B.M. *Diagnosis and management of gestational hypertension and preeclampsia.* Obstetrics & Gynecology. 2003; 102(1): 181–192.
[8] Steegers E.A.P., et al., 2010 (см. сноску 1).
[9] Duley L. *The global impact of pre-eclampsia and eclampsia.* Seminars in Perinatology. 2009; 33(3): 130–137.
[10] American College of Obstetricians and Gynecologists (ACOG). *Gestational hypertension and preeclampsia. Practice Bulletin No. 222.* Obstetrics & Gynecology. 2020; 135(6): e237–e260.
[11] Brown M.A., Magee L.A., Kenny L.C., et al. *Hypertensive disorders of pregnancy: ISSHP classification, diagnosis, and management recommendations.* Hypertension. 2018; 72(1): 24–43.
[12] Redman C.W.G., Sargent I.L. *Placental stress and pre-eclampsia: a revised view.* Placenta. 2009; 30(Suppl A): S38–S42.



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**Modern approaches to treatment -** The goal of treatment is to prevent disease progression and complications while optimizing the timing of delivery [13]. Drug therapy includes antihypertensive medications to control blood pressure, magnesium sulfate to prevent seizures, and corticosteroids to accelerate fetal lung maturation in cases of risk of preterm labor.

Prevention in high-risk groups includes low-dose aspirin administration before 16 weeks of gestation. This strategy reduces the incidence of the disease and the risk of preterm birth.

**Current research and prospects -** Research is focused on improving early diagnosis methods and prognostic models. New tests based on biomarkers and genetic profiles demonstrate high efficacy in predicting the risk of preeclampsia before the onset of clinical symptoms. However, questions remain about the mechanisms underlying the association between maternal chronic illnesses and the development of preeclampsia and the optimization of individualized treatment approaches.

## Conclusion

Preeclampsia remains one of the most pressing issues in modern obstetrics, posing a serious threat to the health of both mother and fetus. The multifactorial etiology of the disease, including placentation disorders , endothelial dysfunction, and systemic inflammation, leads to polymorphic clinical manifestations and difficulties in early diagnosis. Modern screening methods, including assessment of angiogenic and antiangiogenic factors, uterine blood flow parameters, and the use of biomarkers, allow for more accurate prediction of the risk of developing preeclampsia and timely adjustments to pregnancy management. Effective prevention, including low-dose aspirin in high-risk pregnant women, has proven its clinical value in reducing the incidence of severe forms of the disease and preterm birth.

A comprehensive, multidisciplinary approach to managing preeclampsia in pregnant women, including timely drug therapy, maternal and fetal monitoring, and optimal timing of delivery, remains key to reducing maternal and perinatal morbidity. Promising research areas include developing more accurate prognostic models, identifying new biomarkers, and refining individualized treatment strategies.

Thus, further deepening of knowledge about the pathogenesis, risk factors and modern approaches to the treatment of preeclampsia is important for improving the quality of obstetric care and improving pregnancy outcomes.

## References

1. Adizova SR Features of the placenta in pregnant women with preeclampsia. Bulletin of Fundamental and Clinical Medicine. 2023; No. 1 (5): 21–29.
2. Babajanova G . S ., Gaipova N . M . Features of risk factors in pregnant women with preeclampsia. EMS Journal (Uzbekistan). 2025; pages are being specified .
3. Brown MA, Magee LA, Kenny LC, et al. Hypertensive disorders of pregnancy: ISSHP classification, diagnosis, and management recommendations. Hypertension. 2018; 72(1): 24–43.

[13] World Health Organization (WHO). *WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia.* Geneva: WHO; 2011.



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4. Duley L. The global impact of pre-eclampsia and eclampsia. Seminars in Perinatology. 2009; 33(3): 130–137.
5. Frolova O.G., Pavlovich S.V., Grebennik T.K. Statistics of preeclampsia and eclampsia with contemporary parameters of registration of births. RUDN Journal of Medicine. 2014; No 2: 70–74.
6. Khodzhaeva Z.S., Oshkhunova M.S., Muminova K.T., Gorina K.A., Kholin A.M. Prediction and early diagnosis of preeclampsia: scientific perspectives and clinical opportunities. Obstetrics and Gynecology (Eco-Vector Journals). 2022; № 12: 57–65.
7. Kurbanov B . B . Study of A / G polymorphism in the AGTR 2 gene in the development of preeclampsia and gestational hypertension. Doctor axborotnomasi . 2022; No. 2.1 (103): 99–102.
8. Levine RJ, Lam C, Qian C, et al. Soluble endoglin and other circulating antiangiogenic factors in preeclampsia. New England Journal of Medicine. 2006; 355(10): 992–1005.
9. Makhmudova SE Clicquot -anamnestic and molecular genetic factors of preeclampsia and their relationship with the course and outcomes of pregnancy. Journal of Reproductive Health and Uro -Nephrology Research. 2020; 1(1): pages are being specified .
10. Redman CWG, Sargent IL Placental stress and pre-eclampsia: a revised view. Placenta. 2009; 30(Suppl A): S38–S42.
11. Rolnik D.L., Wright D., Poon L.C., et al. Aspirin versus placebo in pregnancies at high risk for preterm preeclampsia. New England Journal of Medicine. 2017; 377(7): 613–622.
12. Sidorova I.S., Nikitina N.A., Unanyan A.L. Preeclampsia and lower maternal mortality in Russia. Obstetrics and Gynecology (Eco-Vector Journals). 2018; № 1: 107–112.
13. Sibai B.M. Diagnosis and management of gestational hypertension and preeclampsia. Obstetrics & Gynecology. 2003; 102(1): 181–192.
14. Steegers E.A.P., von Dadelszen P., Duvekot J.J., Pijnenborg R. Pre-eclampsia. The Lancet. 2010; 376(9741): 631–644.
15. World Health Organization (WHO). WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia. Geneva: WHO; 2011.
16. Zaripova L.R., Galina T.V., Golikova T.P., Gondarenko A.S. Prediction and early diagnosis of preeclampsia. RUDN Journal of Medicine. 2012; No S6: 15–22.
17. Akhmedov F.K., Negmatullaeva M.N., Tuksanova D.I. Features of the course of pregnancy and the risk of adverse outcomes depending on the severity of preeclampsia. Doctor axborotnomasi . 2022; No. 2.1 (103): 40–43.
18. Rasul -Zade Yu.G., Klimashkin A.A., Usmanov S.K., Atabaeva D.S. Towards the evolution of preeclampsia screening: recent advances. Doctor axborotnomasi . 2022; No. 2.2 (104): 145–150.



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