

## CLINICAL CASE OF PREECLAMPSIA: DIAGNOSIS, TREATMENT AND OUTCOME

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### Annotation

Preeclampsia is a complex hypertensive disorder of pregnancy, characterized by the onset of hypertension and proteinuria after 20 weeks of gestation. Despite advances in maternal healthcare, preeclampsia remains a leading cause of maternal and perinatal morbidity and mortality worldwide. This review synthesizes recent findings from the literature, focusing on pathophysiology, risk factors, biomarkers, prevention, and management strategies.

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**Introduction.** Preeclampsia is a systemic disease that affects about 2–8% of pregnant women. Despite significant progress in obstetrics, this pathology remains one of the main causes of maternal and perinatal mortality. This paper discusses a clinical case of a patient with severe preeclampsia. The pathogenesis of preeclampsia is primarily linked to abnormal placentation. In early pregnancy, the failure of trophoblasts to invade the spiral arteries results in incomplete vascular remodeling. This leads to placental hypoxia and oxidative stress, triggering systemic inflammation and endothelial dysfunction. Recent studies highlight the role of angiogenic and anti-angiogenic factors such as soluble fms-like tyrosine kinase-1 (sFlt-1) and placental growth factor (PlGF) in disease progression.

Risk factors for preeclampsia include both maternal and pregnancy-specific variables. Maternal factors include a history of preeclampsia, chronic hypertension, obesity, diabetes, and advanced maternal age. Pregnancy-specific factors include multiple gestation, assisted reproductive technology, and molar pregnancy. Genetic predisposition and immunological factors also play a role in susceptibility.

Recent advancements in biomarker research offer promise for early diagnosis and risk stratification. The sFlt-1/PlGF ratio has shown high predictive value for preeclampsia, particularly in differentiating between early- and late-onset forms. Other emerging biomarkers include endothelial microparticles, inflammatory cytokines, and oxidative stress markers.

Aspirin at low doses has demonstrated efficacy in reducing the risk of preeclampsia in high-risk individuals when initiated before 16 weeks of gestation. Calcium supplementation is also recommended in populations with low dietary calcium intake. Management strategies primarily focus on maternal and fetal monitoring, antihypertensive therapy, and timely delivery. Emerging therapies targeting angiogenic imbalance are under investigation, with potential to revolutionize treatment paradigms.

Preeclampsia disproportionately affects women in low- and middle-income countries, where access to prenatal care and advanced diagnostic tools is limited. Addressing these disparities requires integrated

approaches, including community education, training of healthcare providers, and improving healthcare infrastructure.

Etiologically, preeclampsia is associated with pregnancy and occurs in women with impaired adaptation of vital organ functions. As long as pregnancy continues, preeclampsia persists, and drug therapy is symptomatic and pathogenetic in nature, aimed at stabilizing the functions of the mother's body and preventing the progression of preeclampsia in order to continue the pregnancy to the physiological term of delivery. If it is impossible to control the condition of the pregnant woman, her condition is serious, a decision is made to terminate the pregnancy. According to the Resolution of the Ministry of Health of the Republic of Uzbekistan dated 10.12.2014, the list of contraindications to pregnancy includes "diseases characterized by high blood pressure of grade II or higher", which, according to the international classification, corresponds to a blood pressure level of 160/100 mm Hg and higher. Also, a blood pressure level of  $> 160/110$  mm Hg. and proteinuria  $>3$  g/day are considered criteria for severe preeclampsia, when continuation of pregnancy becomes impossible due to life-threatening complications for the mother and fetus. The transition from moderate to severe preeclampsia can be rapid. The doctor is forced to make a timely choice: to continue treatment in order to prolong the gestation period in the interests of the newborn or to prefer early delivery to minimize organ failure of the mother. Early delivery is a forced measure aimed at reducing maternal and perinatal mortality, but it increases the number of premature births and the number of premature newborns, operative deliveries up to 90%. According to our data obtained by analyzing the course of pregnancy and childbirth, women with hypertensive disorders have an increased risk of early delivery ( $\wedge=4.6$ ; 95% CI 1.8-11.6).

#### Clinical case

Patient: female A.N., 28 years old, first pregnancy.

#### Anamnesis:

- Family history: The mother had hypertension during pregnancy.
- Concomitant diseases: obesity (BMI 32), hypothyroidism on replacement therapy.
- Course of pregnancy: up to the 30th week - no special features.

#### Complaints during hospitalization (31st week):

- Headache, flickering "flies" in front of the eyes.
- Swelling of the lower extremities.
- Increase in blood pressure to 160/100 mm Hg. Art.

#### Survey:

- Blood tests: thrombocytopenia ( $95 \times 10^9/l$ ), increased ALT and AST levels.
- Urine tests: proteinuria 1.5 g/day.
- Fetal ultrasound: intrauterine growth retardation (28th week according to parameters).

Diagnosis: severe preeclampsia.

Treatment. Hospitalization in the intensive care unit. Drug therapy: Antihypertensive drugs: intravenous labetalol. Magnesium preparations for the prevention of seizures: magnesium sulfate.

Obstetric tactics: Steroids to accelerate the maturation of the fetal lungs (betamethasone). Delivery by emergency cesarean section at 32 weeks due to deterioration of the mother's condition.

Exodus. Mother: stabilization of blood pressure, normalization of blood counts 5 days after childbirth. Child: birth weight 1300 g, moderate condition. Transferred to the premature nursing department.

Discussion. The clinical case highlights the importance of early detection of risk factors and timely intervention. The main predictors of adverse outcome were family history and obesity. Preeclampsia requires a multidisciplinary approach and careful monitoring of the condition of the mother and fetus.

**Conclusion.** Preeclampsia remains a challenge for modern medicine. The success of treatment depends on early diagnosis, adequate therapy and timely delivery. The presented case demonstrates the need for an individual approach to each patient to minimize the risk of complications.

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