

## **Antenatal Risk Factors for the Birth of Little Birth Babies With Pre-Eclampsia**

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**Abstract.** *The review identified the greatest risk factors for preterm birth in preeclampsia and examined adverse neonatal outcomes. A conjugation table was compiled based on the identified risk factors and the odds ratio (OR) was determined.*

**Keywords:** *preeclampsia. preterm birth, risk factors, odds ratio.*

### **Relevance**

Preeclampsia is the most serious complication of pregnancy, posing a danger to the life of the mother and child. Due to a violation of the function of vital organs — the brain, liver, lungs, kidneys — multiple organ failure is formed and progresses. According to WHO, preeclampsia develops in the 2nd half of pregnancy in 2-8% of women. Domestic statistics on the frequency of preeclampsia are extremely variable – from 13 to 28% in high-risk hospitals, which once again indicates an irrational diagnosis and classification of this pregnancy complication. In recent years, there has been an increase in the incidence of severe forms of preeclampsia and eclampsia. The frequency of eclampsia largely depends on the age of the mother, parity, the number of fetuses and gestational age: eclampsia develops 8 times more often in terms of up to 32 weeks compared with gestational terms of 37-42 weeks and after childbirth, convulsive seizures occur 2 times more often in multiple pregnancies compared with single pregnancies. Severe gestosis leads to impaired fetal growth and development, the birth of premature babies, the formation of perinatal hypoxic lesions of the central nervous, cardiovascular, endocrine, immune, respiratory and other systems, which negatively affects the health of children in the following years of life. Perinatal mortality in severe forms of preeclampsia reaches 25-30%. According to various authors, early neonatal mortality averages 7.5 per 1,000 live births. Other adverse outcomes for newborns include critically early premature birth before 28 weeks of pregnancy (odds ratio (OR) 5.6, 95% confidence interval (CI) 4.5–7.0), early premature birth – in 29-33 weeks of pregnancy (OR 4.6, 95% CI 4.1–5.2), respiratory distress syndrome (OR 5.1, 95% CI 4.1–6.3), transfer to the neonatal intensive care unit (OR 2.8, 95% CI 2.4–3.2), low gestational weight of newborns (OR 2.6; 95% CI 2.3–3.0),

sepsis (OR 2.4, 95% CI 1.7–3.4), neonatal seizures (OR 2.2, 95% CI 1.3–3.8) and prolonged hospital stay (2 times higher than newborns from mothers without preeclampsia). In scientific studies, high risk factors for the development of severe preeclampsia and eclampsia have been studied. These include: the age of the mother over 40 and under 18, the first pregnancy (OR 2.3, 95% confidence interval 2.0–2.6), pre-existing heart and vascular diseases (OR 4.8, 95% CI 2.9–7.3), systemic lupus erythematosus (OR 2.9 at 95% CI 1.1–8.0), arterial hypertension (OR 2.3, 95% CI 2.0–2.7), a history of premature placental abruption (OR 2.2, 95% CI 1.6–3.0), diabetes mellitus (OR 1.5, 95% CI 1.2–1.8) and chronic urinary tract infections (OR 1.5, 95% CI 1.1–2.2).

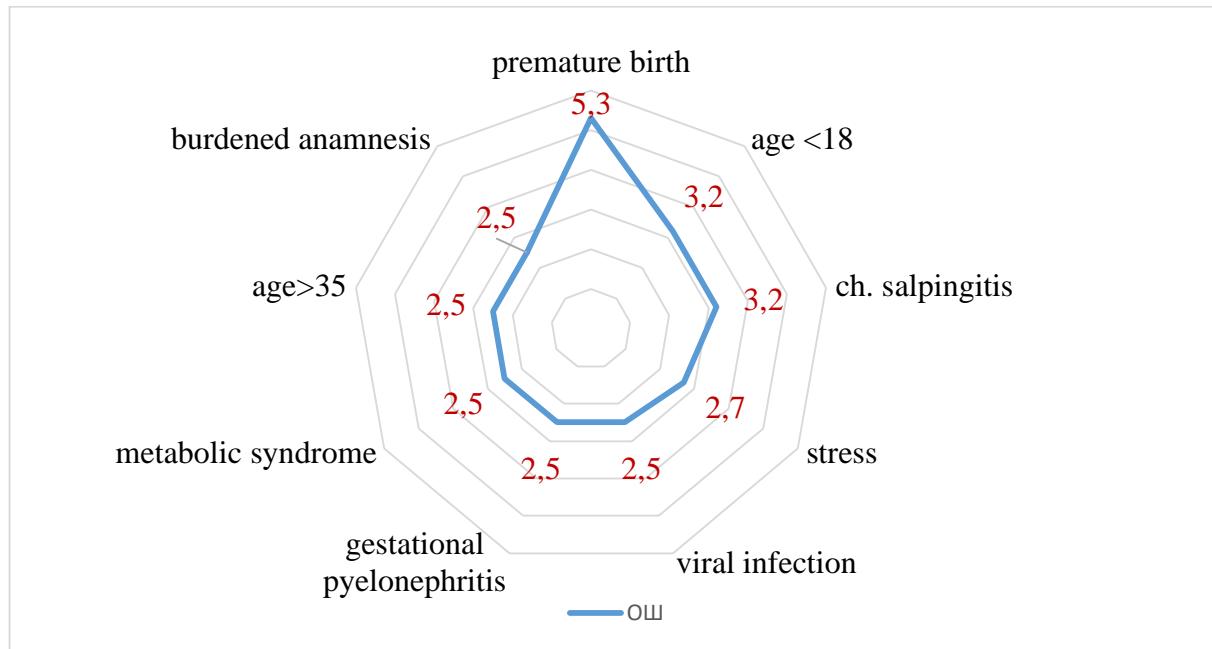
**The purpose of the study:** to establish the greatest risk factors contributing to premature birth in preeclampsia.

**Materials and methods.** For an integral assessment of risk factors, 800 women in labor were studied, which were divided into 4 groups. The first group consisted of 200 women in labor with preeclampsia and timely delivery; the second group consisted of 200 women in labor without preeclampsia with timely delivery. Group 3 consisted of 200 women in labor with preeclampsia and preterm labor; the fourth group consisted of 200 women in labor with preterm labor without preeclampsia.

Inclusion criteria: full-term, premature newborns from women with preeclampsia and uncomplicated pregnancy. Exclusion criteria: children from mothers with other severe extragenital pathology affecting placental function; newborns with congenital malformations and chromosomal diseases; children from multiple pregnancies.

**Results and their discussion.** Studies have shown that premature birth in mothers without preeclampsia occurred at 28-34 weeks of gestation in 31.1%, and 35-37 weeks in 68.9%. All full-term newborns were born at 38-42 weeks. Premature babies born to mothers whose pregnancy was complicated by preeclampsia had a significantly lower gestational age: -61.8% were born at 28-34 weeks, 38.2% at 35-37 weeks.

Risk factors for the development of premature birth have been investigated.. Based on the identified risk factors, a conjugation table was compiled and the odds ratio (OR) was determined. As a result, the greatest risk factors contributing to premature birth were established: a history of premature birth (OR=5.3), age under 18 years (OR=3.2), chronic salpingoophoritis (OR=3.2), emotional stress/depression during pregnancy (OR=2.7).



**Figure 1. The ratio of the chances of detecting risk factors for premature birth and the birth of low-weight newborns**

At the same time, factors with the same degree of risk of premature birth are: ARVI during pregnancy (OR = 2.5), gestational pyelonephritis (OR= 2.5), metabolic syndrome (OR = 2.5), age over 35 years (OR= 2.5) and a burdened maternal history (OR = 2.5). The established data confirm the fact that both maternal and antenatal factors contribute to premature and low-weight births.

In our studies, maternal risk factors for low-weight and premature birth are EGZ, in particular metabolic syndrome, pyelonephritis, anemia, preeclampsia and gestational hypertension in pregnant women. The above-established antenatal risk factors for the birth of low-weight newborns are directly related to the management of delivery. Therefore, taking into account the established risk factors, it is possible to predict premature birth in women with concomitant extragenital diseases. The use of this interface table in practical activities contributes to the improvement of preventive measures already at the stages of pre-gravidar preparation. Preeclampsia is a risk factor for the development of cerebral palsy in children. The birth of a child of small gestational age significantly increases this risk. Preeclampsia and eclampsia can cause further kidney disease.

It was revealed that with a single pregnancy complicated by preeclampsia, the relative risk of developing chronic renal failure is 4.7 (95% CI 3.6—6.1), with repeated complicated pregnancy, the indicator increases to 6.7 (95% CI 4.3—10.6) with the third — to 15.5 (95% CI 7.8—30.8). Children born to mothers with preeclampsia, especially small children who do not meet the gestational age, have an increased risk of developing early atherosclerosis, stroke, coronary heart disease and metabolic syndrome in adulthood.

**Conclusion.** Thus, based on the data obtained, the greatest contributing risk factors for preterm labor in preeclampsia are: a history of premature birth, age under 18, chronic salpingoophoritis, emotional stress/depression during pregnancy.

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