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Obstetric Outcomes in Preeclamptic Pregnancies by Nice Risk Groups

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Abstract. Preeclampsia is one of the leading causes of maternal and perinatal morbidity and mortality, affecting 3–8% of pregnancies worldwide, including Kazakhstan [1]. According to NICE guidelines, risk stratification can be performed based on maternal factors, including obstetric and medical history. However, the effectiveness of this approach is limited: its predictive value is approximately 41% for preeclampsia before 32 weeks of gestation, 39% before 37 weeks, and 34% at 37 weeks and beyond [2]. Therefore, this study presents a retrospective analysis of pregnant women with preeclampsia stratified into risk groups based solely on maternal factors.

Keywords: NICE criteria, maternal factors, preeclampsia.

Introduction. Preeclampsia is characterized by new-onset hypertension which usually occurs after 20 weeks gestation, and evidence of end-organ dysfunction. The end-organ disease resulting from the preeclampsia is varied, and can include proteinuria, acute kidney injury, hepatic dysfunction, hemolysis, thrombocytopenia, and – less frequently – liver rupture, seizures (eclampsia), stroke, and death [3,4]. Therefore, this study presents a retrospective analysis of pregnant women with preeclampsia, stratified into risk groups based solely on maternal factors, in order to assess their predictive value and association with obstetric outcomes [5].

The study aimed to: To evaluate obstetric outcomes in

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pregnant women with preeclampsia depending on risk stratification according to NICE criteria.

Materials and Methods. A retrospective comparative study included 47 pregnant women with preeclampsia observed at the “City Polyclinic for Veterans of the Great Patriotic War” in Almaty from 2019 to 2024. Patients were divided into low-risk (n=10), moderate-risk (n=19), and high-risk (n=18) groups according to NICE criteria. Medical records and discharge summaries were analyzed. Statistical analysis was performed using Microsoft Excel.

Results. According to the NICE classification, among the examined pregnant women, 21% were classified as low risk, 40% as moderate risk, and 39% as high risk (Fig. 1).

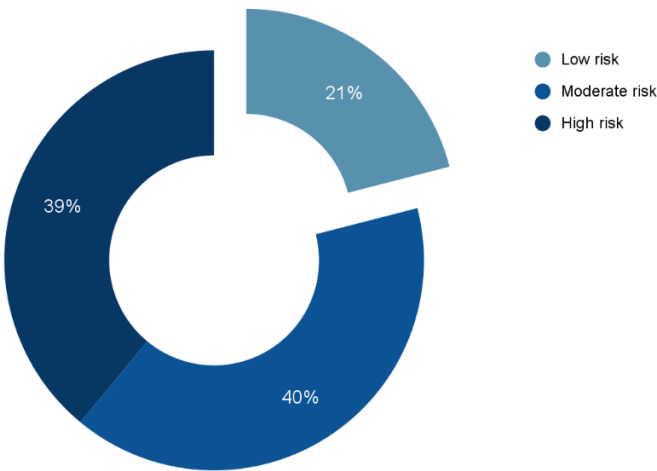


Figure 1
Risk distribution in the sample

The study showed that the median systolic/diastolic blood pressure was 145/100 mmHg in the low-risk group, 145/90 mmHg in the moderate-risk group, and 160/100 mmHg in the high-risk group. Fetal growth restriction was observed in 1 (10%) patient in the low-risk group and in 2 (11.1%) patients in the high-risk group.

The mean gestational age at delivery was 37.4±4.1 weeks in the low-risk group, 37.5±2.2 weeks in the moderate-risk group, and 36.4±3.4 weeks in the high-risk group (p=0.63).

In the low- and moderate-risk groups, mild preeclampsia was more common: 6 (60%) and 11 (58%) cases, respectively, whereas severe preeclampsia predominated in the high-risk group 12 cases (71%).

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Early-onset preeclampsia was observed in 2 (20%) patients in the low-risk group, 1 (5%) in the moderate-risk group, and 3 (18%) in the high-risk group (Fig. 2).

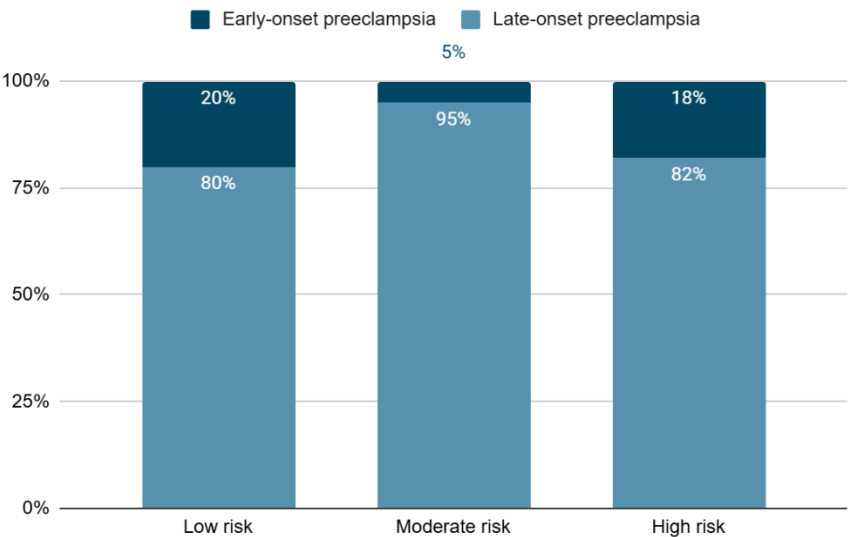


Figure 2
Distribution of groups according to the form of preeclampsia

Preterm birth occurred in 4 (40%) patients in the low-risk group, 5 (28%) in the moderate-risk group, and 7 (41%) in the high-risk group ($p=0.672$) Fig. 3

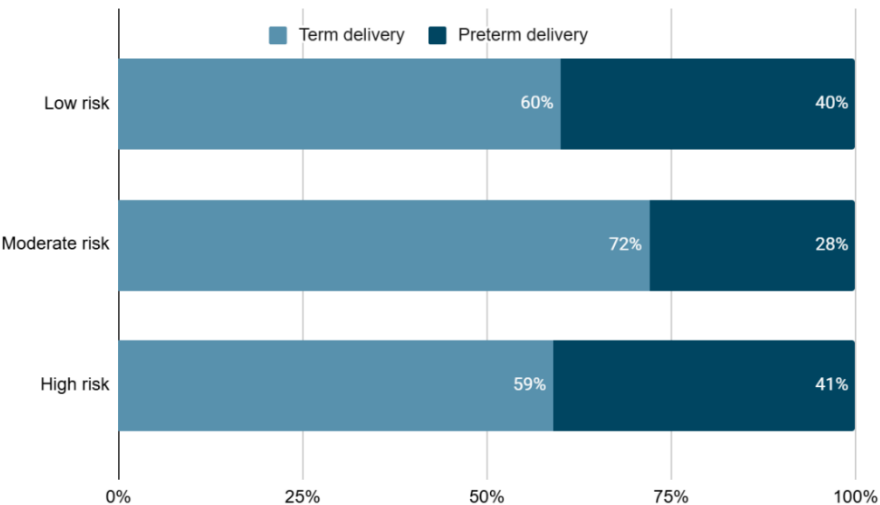


Figure 3
Distribution of groups according to gestational age at delivery

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Vaginal delivery prevailed in 6 (60%) patients in the low-risk group, 10 (56%) in the moderate-risk group, and 11 (65%) in the high-risk group.

The cesarean section rate was 3 (30%) in the low-risk group, 5 (28%) in the moderate-risk group, and 6 (35%) in the high-risk group ($p=0.552$) (Fig. 4).

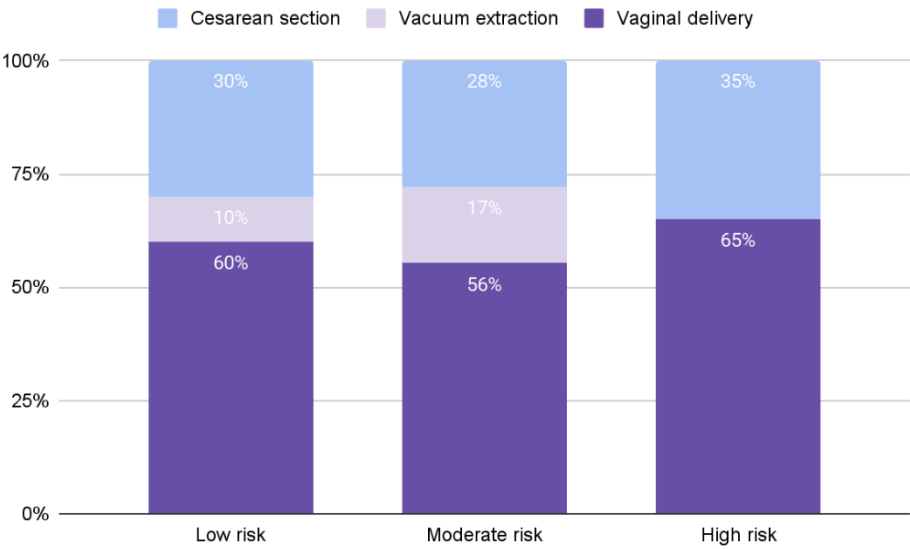


Figure 4
Distribution of delivery modes across risk groups

In the high-risk group, single cases of adverse outcomes were registered: antenatal fetal death (5.9%), placental abruption (5.9%), and low birth weight (35.3%).

Conclusion. Risk stratification according to NICE criteria did not reveal statistically significant differences in obstetric outcomes among patients with already developed preeclampsia. Adverse outcomes were observed across all risk groups. These findings are consistent with international data and confirm the limited predictive value of screening based solely on maternal factors, highlighting the need for improved and more comprehensive approaches to early prediction of preeclampsia.

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