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CHARACTERISTICS OF PERINATAL RISK FACTORS IN NEWBORNS WITH CYTOMEGALOVIRUS INFECTION

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Despite significant advances in modern medicine, congenital infections (CI) remain challenging for antenatal diagnosis. This is due to the multifactorial nature of the pathology, the lack of a clear correlation between the severity of clinical manifestations of the infection in the mother and the extent of fetal damage, and the multifaceted effects of the infectious agent on the fetus. Currently, the study of CMV infection and its impact on the fetus is primarily focused on primary infection, as in 35–50% of cases, the infection is transmitted to the fetus. However, exacerbation of the disease is more frequently observed in CMV-seropositive pregnant women, although data on its frequency vary from 3 to 28%.

Research Objective. To identify significant perinatal risk factors in newborns with cytomegalovirus infection (CMVI).

Materials and Methods. A total of 129 newborns and their mothers were examined. The main group consisted of 69 newborns with CMVI, while the control group included 60 healthy newborns born to women with a normal pregnancy and childbirth. CI diagnosis in the mother was confirmed by a combination of clinical and laboratory data and specific research methods (PCR, ELISA). Analysis of clinical and anamnesis data of mothers and newborns was carried out through birth histories and individual outpatient records. Statistical processing of the data was performed using Microsoft Excel 2010 and Statistica 6.1 software packages. The relative risk of pathology development was assessed by calculating odds ratios (OR) with a 95% confidence interval (CI), chi-square criterion. Differences were considered statistically significant at $p< 0.05$.

Research Results. Analysis of the age composition of the observed mothers showed that the average age of women in the first group with CMVI was 27.5±0.7 years, while in the control group it was 28.8±0.72 years.

Analysis of extragenital diseases in mothers showed a higher frequency of anemia in the main group (55.1±5.9%) compared to the control group (13.3±4.4%) (P<0.001). The highest number of women suffering from chronic gastroduodenitis (34.8±5.7%), chronic pyelonephritis, cystitis (33.3±5.7%), as well as those who had acute respiratory viral infections with COVID-19 (39.1±5.9%) were found among mothers with CMVI.

Among the 17 analyzed risk factors for CMVI development, 15 were statistically significant and reliable. The most significant factors included pregnancy termination risk (OR=13; 95% CI 5.3; 31.9; P<0.001), contaminated amniotic fluid (OR=11.4; 95% CI 3.7; 34.9; P<0.001).

Risk factors for pregnancy and childbirth complications included contaminated amniotic fluid (OR=11.4; 95% CI 3.7; 34.9; P<0.001), non-progressing pregnancy

(OR=7.3; 95% CI 2.8; 19.3; P<0.001), and uteroplacental blood flow disruption (OR=7.9; 95% CI 3.3; 19.3; P<0.001).

Conclusions. The data show that the highest risk factors for CMVI development are pregnancy termination threats, uteroplacental blood flow disruption, and contaminated amniotic fluid. The most significant risk factors among diseases were anemia, COVID-19, and acute respiratory viral infections. Ultimately, these factors create adverse conditions for fetal development, leading to chronic intrauterine hypoxia and worsening the newborn's condition.