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DOPPLER DATA IN PREGNANT WOMEN WHO HAVE COVID-19

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Abstract:

Of the obstetric outcomes in pregnant women with a history of COVID-19, the most common were premature birth, which amounted to 13.7%, and a high incidence of severe preeclampsia, which amounted to 18.3%. The incidence of premature birth in pregnant women with severe COVID-19 at 22-28 weeks was significantly more than 8 times higher than in pregnant women with mild COVID-19.

Keywords: cytokines, fetus, pregnant women, COVID-19, obesity.

All over the world, information has been accumulated on the manifestations of the infectious process in pregnant women when infected with SARS-CoV-2, the new pandemic coronavirus that causes COVID-19. The relevance and need to study these problems is quite obvious, since the study of the pathogenetic mechanisms of the development of various complications during pregnancy and the postpartum period will help clarify the impact of COVID-19 on the course of pregnancy and the postpartum period. Therefore, a method for studying neurological disorders in the postpartum period in women who have had coronavirus infection is needed. Pregnant women with COVID-19, compared with pregnant women without COVID-19, are more likely to give birth prematurely and have an increased risk of maternal mortality and intensive care unit admission. Their babies are more likely to be admitted to a neonatal unit [2,11,12,13,14,15,16].

Our country is implementing comprehensive large-scale programs for the early detection, high-quality diagnosis and treatment of neurological diseases in pregnant and postpartum women, in particular, one of the main tasks of modern healthcare is "... carrying out comprehensive measures to radically improve the quality and expand the range of high-tech specialized care for patients with immune diseases systems..." [1,17,18,19,20].

The resolution assumes the active introduction into the system of specialized medical care of the achievements of modern research activities in all areas of medicine.

The current COVID-19 pandemic is a serious public health problem, particularly affecting vulnerable populations. Pregnant women and newborns represent a high-risk group during outbreaks of infectious diseases complicating respiratory tract pathologies and neurological pathologies.

Many works discuss the features of the course of infection in pregnant women and the organization of medical care, including obstetric care for pregnant women, women in labor and postpartum women with this disease, indications for hospitalization, possibilities and indications for etiotropic therapy [2,21,22,23].

In Uzbekistan, the pathogenetic mechanisms of the development of complications of pregnancy and childbirth after various viral infections, including after COVID-19, are being studied from the point of view of domestic authors [2,11,12,13,14,15,16].

Currently, the issues of innate immunity of the fetus in pregnant women who have had COVID-19 on their perinatal outcomes have not been addressed, which is aimed at improving the quality of life of pregnant women with COVID-19 and preventing complications of pregnancy and childbirth in such women. In the literature available to us, there is information about some studies in this area, most often descriptive, but there is no information about the state of the fetal immune system, their immunoglobulin and cytokine profile of those who have had COVID-19, although it is obvious that the study of the adaptive mechanisms of the fetal immune system is necessary during pregnancy. background of COVID-19.

PURPOSE: To study Doppler parameters of the fetus in pregnant women who have had COVID-19.

RESEARCH METHODS: studies were conducted at the Republican Perinatal Center in 2022 on 100 pregnant women who had COVID-19 in the second trimester or third trimester of gestation. There were 3 groups. Group I (control) pregnant women with physiological pregnancy and without obstetric and somatic diseases (n=20). Group II: pregnant women who had mild COVID-19 (n=30). Group III: pregnant women with a moderate form (n=30) and group IV: pregnant women with a severe form. This study of the fetus was carried out at the Republican Perinatal Center on an expert-class ultrasound machine from VOLUSON E9 (USA) using 3.5 Hz convex sensors for transabdominal examination for a period from 22 to 36 weeks. Pulsatility index (PI), systolic-diastolic ratio (S/D) and resistance index (IR) were determined in the uterine artery, umbilical cord and middle cerebral artery of the fetus.

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RESULTS: When studying Doppler measurements in the uterine artery in the group with severe disease, S/D was 2.74±0.08, PI - 1.03±0.09 and IR - 0.80±0.03, respectively, and had significant differences from the indicators of the control group. In women with mild disease, the indicators were 1.87±0.04, 0.70±0.02 and 0.53±0.05, respectively; and in the group of pregnant women with an average course of COVID-19, 2.42±0.12; 0.87±0.03 and 0.70±0.04, respectively.
S/D, PI and IR in the umbilical cord artery in pregnant women who had COVID-19 significantly exceeded those in healthy pregnant women and increased depending on the severity of the infection from 2.44±0.02, 0.79±0.01 and 0.57±0.03 among women with mild cases, respectively, among women with moderate cases of COVID-19 – up to 3.37±0.16, 1.05±0.08 and 0.88±0.06, respectively, and among women with severe disease there were the highest rates - up to 3.41±0.16, 1.09±0.05 and 0.99±0.03, respectively.

Despite the mild form of COVID-19, the pregnant woman did not show any significant changes in the fetal middle cerebral artery compared to the control group. In women who have suffered severe COVID-19, the compensatory capabilities of the fetus are exhausted: the state of blood flow in the arteries of the umbilical cord and middle cerebral artery becomes critical, which creates conditions for its antenatal death.

CONCLUSION: the most sensitive indicator of a violation of the uteroplacental-fetal circulation is an increase in the resistance index in the studied vessels. Doppler metry of fetal blood flow makes it possible to diagnose intrauterine fetal suffering somewhat earlier than cardiotocography.

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