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<https://orcid.org/0000-0003-0059-9183>

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Тригулова Раиса Хусановна

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tibbiyot fanlari doktori, professor, Samarqand davlat tibbiyot universiteti 2-sonli ichki kasalliklar va kardiologiya kafedrasini mudiri, Samarqand viloyati vrachlar uyushmasi raisi
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Xaibulina Zarina Ruslanovna

tibbiyot fanlari doktori, "akad V. Vohidov nomidagi RIJM davlat institutining mikrobiologiya guruhi bilan biokimyo kafedrasini mudiri" <https://orcid.org/0000-0002-9942-2910>

Tahririyat a'zolari:

Alyavi Anis Lyutfullayevich

O'zbekiston Respublikasi Fanlar akademiyasining akademigi, tibbiyot fanlari doktori, professor, O'zbekiston Terapevtlar uyushmasi raisi, Respublika ixtisoslashtirilgan ilmiy va amaliy tibbiy terapiya markazi va tibbiy reabilitatsiya direktori maslahatchisi (Toshkent), <https://orcid.org/0000-0002-0933-4993>

Bockeria Leo Antonovich

Rossiya fanlar akademiyasining akademigi, tibbiyot fanlari doktori, professor, A.N. Bakuleva nomidagi yurak-qon tomir jarrohligi ilmiy markazi prezidenti (Moskva)
<https://orcid.org/0000-0002-6180-2619>

Kurbanov Ravshanbek Davlatovich

O'zbekiston Respublikasi Fanlar akademiyasining akademigi, tibbiyot fanlari doktori, professor, Respublika ixtisoslashtirilgan kardiologiya ilmiy-amaliy tibbiyot markazining direktori maslahatchisi (Toshkent)
<https://orcid.org/0000-0001-7309-2071>

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<https://orcid.org/0000-0002-0812-6113>

Pokushalov Evgeniy Anatolevich

tibbiyot fanlari doktori, professor, "Yangi tibbiy texnologiyalar markazi" (YTTM) klinik tarmog'ining ilmiy ishlar va rivojlanish bo'yicha bosh direktorining o'rinbosari (Novosibirsk) <https://orcid.org/0000-0002-2560-5167>

Zufarov Mirjamol Mirumarovich

tibbiyot fanlari doktori, professor, "akad V. Vohidov nomidagi RIJM davlat muassasasi" bo'limi boshlig'i"
<https://orcid.org/0000-0003-4822-3193>

Akilov Xabibulla Ataulayevich

tibbiyot fanlari doktori, professor, Tibbiyot xodimlarining kasbiy malakasini oshirish markazi direktori (Toshkent)

Nasirova Zarina Akbarovna

Samarqand davlat tibbiyot universiteti 2-sonli ichki kasalliklar va kardiologiya kafedrasini dotsenti, DSc (mas'ul kotib) ORCID: 0000-0002-8722-0393 (mas'ul kotib)

Rizayev Jasur Alimjanovich

tibbiyot fanlari doktori, professor, Samarqand davlat tibbiyot universiteti rektori
<https://orcid.org/0000-0001-5468-9403>

Ziyadullayev Shuxrat Xudoyberdiyevich

tibbiyot fanlari doktori, professor, O'zbekiston Respublikasi Fanlar akademiyasi Immunologiya va inson genomikasi instituti ilmiy ishlar bo'yicha direktor o'rinbosari (Toshkent) <https://orcid.org/0000-0002-9309-3933>

Jan Kovak

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<https://orcid.org/0000-0003-0059-9183>

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tibbiyot fanlari doktori, professori I.M. Sechenov nomidagi Birinchi Moskva Davlat tibbiyot universiteti (Moskva)
<https://orcid.org/0000-0001-8040-3704>

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Tibbiyot fanlari doktori, Profilaktik kardiologiya laboratoriyasi mudiri, YuIK va ateroskleroz laboratoriyasining yetakchi ilmiy xodimi. Respublika ixtisoslashtirilgan kardiologiya ilmiy-amaliy tibbiyot markazi (Toshkent) ORCID- 0000-0003-4339-0670

Turayev Feruz Fatxullayevich

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(Самарканд)
<https://orcid.org/0000-0003-2679-1296>

Alimov Doniyor Anvarovich
*tibbiyot fanlari doktori, Respublika
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reabilitatsiya ilmiy-amaliy
tibbiyot markazi" davlat
muassasasi bosh ilmiy xodimi
<https://orcid.org/0000-0002-1766-4458>*

Agababayan Irina Rubenovna
*tibbiyot fanlari nomzodi, dotsent,
DKTF, terapiya kafedrasini mudiri,
Samarqand davlat tibbiyot instituti*

Alieva Nigora Rustamovna
*tibbiyot fanlari doktori, 1-sonli
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akademiyasining Immunologiya va
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Qayumov Ulug'bek Karimovich
*tibbiyot fanlari doktori, professor,
Tibbiyot xodimlarining kasbiy
malakasini oshirish markazi, ichki
kasalliklar va teletibbiyot kafedrasini
mudiri (Toshkent)*

Xusinova Shoira Akbarovna
*tibbiyot fanlari nomzodi, dotsent,
Samarqand davlat tibbiyot instituti
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tibbiyot kafedrasini mudiri (Samarqand)*

Shodikulova Gulandom Zikriyayevna
*tibbiyot fanlari doktori, professor,
Samarqand davlat tibbiyot instituti 3-
ichki kasalliklar kafedrasini mudiri
(Samarqand)
<https://orcid.org/0000-0003-2679-1296>*

Alimov Doniyor Anvarovich
*Doctor of Medical Sciences, Director of
the Republican Scientific Center of
Emergency Medical Care*

Yangiev Bakhtiyor Axmedovich
*PhD, Director of Samarkand branch of
the Republican Scientific Center of
Emergency Medical Care*

Abdullaev Akbar Xatamovich
*Doctor of Medical Sciences,
Chief Researcher of the State Institution
"Republican Specialized Scientific and
Practical Medical Center for Therapy and
Medical Rehabilitation" of the Ministry of
Health of the Republic of Uzbekistan,
<https://orcid.org/0000-0002-1766-4458>*

Agababayan Irina Rubenovna
*PhD, Associate Professor, Head of the
Department of Therapy, FAGE,
Samarkand State Medical Institute*

Alieva Nigora Rustamovna
*Doctor of Medical Sciences, Head of the
Department of Hospital Pediatrics
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Ismailova Adolat Abduraximovna
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Immunology of Human
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Kamalov Zainitdin Sayfutdinovich
*doctor of Medical Sciences, Professor,
Head of the Laboratory of
Immunogenetics of the Institute of
Immunology and Human Genomics
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Kayumov Ulugbek Karimovich
*Doctor of Medical Sciences, Professor,
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for the development of professional
qualifications
of medical workers*

Khusinova Shoira Akbarovna
*PhD, Associate Professor, Head of the
Department of General Practice,
Family Medicine FAGE of the
Samarkand State Medical Institute*

Shodikulova Gulandom Zikriyayevna
*Doctor of Medical Sciences, professor,
head of the Department of Internal
Diseases N 3 of Samarkand state medical
institute (Samarkand)
<https://orcid.org/0000-0003-2679-1296>*

Халиков Каххор Мирзаевич
кандидат медицинских наук, доцент
заведующий кафедрой биологической
химии Самаркандского
государственного медицинского
университета

Аннаев Музаффар
Ассистент кафедры внутренних
болезней и кардиологии №2
Самаркандского государственного
медицинского университета
(технический секретарь)

Тулабаева Гавхар Миракбаровна
Заведующая кафедрой кардиологии,
Центр развития профессиональной
квалификации медицинских
работников, д.м.н., профессор

**Абдумаджидов Хамидулла
Амануллаевич**
Бухарский государственный
медицинский институт имени Абу
Али ибн Сино. Кафедра «Хирургические
болезни и реанимация». Доктор
медицинских наук, профессор.

Саидов Максуд Арифович
к.м.н., директор Самаркандского
областного отделения
Республиканского специализированного
научно-практического медицинского
центра кардиологии (г. Самарканд)

Срождинова Нигора Зайнутдиновна
д.м.н. Заведующая научно-
исследовательской лабораторией
кардиодиабета и метаболических
нарушений РСНПМЦК

Xalikov Qaxxor Mirzayevich
Tibbiyot fanlari nomzodi, dotsent
Samarqand davlat tibbiyot universiteti
Biologik kimyo kafedrasini mudiri

Annayev Muzaffar G'iyos o'g'li
Samarqand davlat tibbiyot universiteti 2-son
ichki kasalliklar va kardiologiya kafedrasini
assistenti (texnik kotib)

Tulabayeva Gavxar Mirakbarovna
kardiologiya kafedrasini mudiri, tibbiyot
xodimlarining kasbiy malakasini rivojlantirish
markazi, tibbiyot fanlari doktori, professor

Abdumadjidov Xamidulla Amanullayevich
«Abu Ali ibn Sino nomidagi Buxoro davlat
tibbiyot oliygohi» Xirurgiya kasalliklari va
reanimatsiya kafedrasini proffessori, tibbiyot
fanlari doktori.

Saidov Maqsud Arifovich
tibbiyot fanlari nomzodi,
Respublika ixtisoslashgan kardialogiya
ilmiy amaliy tibbiyot markazi Samarqand
viloyat mintaqaviy filiali direktori
(Samarqand)

Srojidinova Nigora Zaynutdinovna
t.f.d. Kardiodiabet va metabolik buzilishlar
ilmiy tadqiqot laboratoriyasi mudiri

Khalikov Kakhor Mirzayevich
Candidate of Medical Sciences,
Associate Professor, Head of the Department
of Biological Chemistry, Samarkand State
Medical University

Annaev Muzaffar
Assistant of the Department of Internal
Diseases and Cardiology No. 2 of the
Samarkand State Medical University
(technical secretary)

Tulabayeva Gavkhar Mirakbarovna
Head of the Department of Cardiology,
Development Center professional
qualification of medical workers,
MD, professor

**Abdumadjidov Khamidulla
Amanullayevich**
“Bukhara state medical institute named
after Abu Ali ibn Sino”. DSc, professor.

Saidov Maksud Arifovich
Candidate of Medical Sciences, Director
of the Samarkand Regional Department of
the Republican Specialized Scientific and
Practical Medical Center of Cardiology
(Samarkand)

Srojidinova Nigora Zaynutdinovna
DSc, Head of Cardiodiabetes and Metabolic
Disorders Laboratory

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**Индиаминова Г.Н.**

PhD, ассистент кафедры акушерства и гинекологии №3

Самарканд, Узбекистан

Салимова М.Ф.

Клинический ординатор 1 года кафедры акушерства и гинекологии №3

Самаркандский государственный

медицинский университет

Самарканд, Узбекистан

СОСТОЯНИЕ НОВОРОЖДЕННЫХ ПРИ ОСТРОЙ РЕСПИРАТОРНОЙ ВИРУСНОЙ ИНФЕКЦИИ (COVID-19) У БЕРЕМЕННЫХ ЖЕНЩИН

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АННОТАЦИЯ

Респираторно-вирусные инфекции в процессе цивилизации человечества проявлялись посредством различных вирусных инфекций. В XXI веке в истории человечества глобальной проблемой стала COVID-19, а возбудителем которого стал вирус SARs-CoV-2 и была причиной пандемии по всему миру, а на сегодняшний день этот вирус превратился в сезонно обостряющийся респираторно-вирусную инфекцию. Этот вирус также может вызвать серьезные проблемы со здоровьем во время беременности. В отличие от населения в целом, беременные женщины составляют особую группу со значительно более высоким риском вирусной инфекции как уникального «иммунологического» состояния и изменением функции всех органов и систем во время беременности, в связи с этим изучение функционального состояния системы мать-плацента-плод у беременных, течение беременности, осложнения и перинатальные исходы, а так же состояние новорожденных у женщин, перенесших вирусные инфекции остаётся с научной и практической точки зрения требованием современности.

Ключевые слова. Респираторно-вирусные инфекции; беременность; новорожденные; коронавирусная инфекция; перинатальные исходы.

G.N. Indiaminova

PhD, assistant of the Department of Obstetrics and Gynecology number 3

Samarkand, Uzbekistan

M.F. Salimova

1-year clinical resident of the

Department of Obstetrics and

Gynecology number 3

Samarkand State medical university

Samarkand, Uzbekistan

CONDITION OF NEWBORNS IN ACUTE RESPIRATORY VIRAL INFECTION (COVID-19) IN PREGNANT WOMEN

ANNOTATION

Respiratory viral infections in the process of human civilization manifested themselves through various viral infections. In the XXI century, COVID-19 became a global problem in the history of humanity, and, the causative agent of which was the SARs-CoV-2 virus and was the cause of a pandemic around the world, and today this virus has turned into a seasonally aggravated respiratory

viral infection. This virus can also cause serious health problems during pregnancy. Unlike the general population, pregnant women constitute a special group with a significantly higher risk of viral infection as a unique "immunological" condition and a change in the function of all organs and systems during pregnancy. In this regard, the study of the functional state of the mother-placenta-fetus system in pregnant women, the course of pregnancy, complications and perinatal outcomes, as well as the condition of newborns in women who have had viral infections remains with scientific and practical the point of view of the requirements of modernity.

Keywords. Respiratory viral infections; pregnancy; newborns; coronavirus infection; perinatal outcomes.

Indiaminova G.N.

PhD, akusherlik va ginekologiya №3 kafedrası assistenti
Samarqand, O'zbekiston

Salimova M.F.

1-bosqich klinik ordinatori,
Akusherlik va ginekologiya №3 kafedrası
Samarqand Davlat Tibbiyot Universiteti
Samarqand, O'zbekiston

HOMILADOR AYOLLARDA O'TKIR NAFAS YO'LLARI VIRUSLI INFEKSIYASI (COVID-19) PAYTIDA YANGI TUG'ILGAN CHAQALOQLARNING HOLATI

ANNOTATSIYA

Inson sivilizatsiyasi jarayonida respirator-virusli infeksiyalar turli xil virusli infeksiyalar orqali namoyon bo'lgan. XXI asrda insoniyat tarixida COVID-19 global muammolarni keltirib chiqardi, uning qo'zg'atuvchisi SARs-CoV-2 virusi bo'lib, butun dunyo bo'ylab tarqalgan pandemiyaning sababchisiga aylandi, bugungi kunga kelib esa bu virus mavsumiy qo'zg'aluvchi respirator-virusli infeksiyaga aylanib qoldi. Ushbu virus shuningdek, homiladorlik davrida ham salomatlik bilan bog'liq jiddiy muammolarni keltirib chiqarishi mumkin. Butun aholidan farqli ravishda, homilador ayollar virusli infeksiyalar bilan kasallanish xavfi sezilarli darajada yuqori bo'lgan maxsus guruhga mansub hisoblanadi va noyob "immunologik" holat bo'lib, homiladorlik davomida barcha organ va tizimlar funksiyasining o'zgarishi bilan namoyon bo'ladi. Shu sababli, homiladorlarda ona-yo'ldosh-homila tizimining funksional holatini, homiladorlik davrining kechishini, asoratlarini va perinatal natijalarni, shuningdek virusli infeksiyalarni o'tkazgan ayollar chaqaloqlarining ahvolini o'rganish ilmiy va amaliy nuqtai nazardan zamon talab bo'lib qolmoqda.

Kalit so'zlar. Respirator virusli infeksiyalar, homiladorlik, chaqaloq, koronavirus infeksiyasi, perinatal natijalar.

Relevance. Numerous studies on the effect of respiratory viruses on the human body have shown that this infection selectively affects the vascular endothelium, causing vasculitis in many organs and systems [4, 5]. From this evidence, it is assumed that systemic vascular endothelial damage can lead to impaired placental formation, the development of placental oxidative stress and a variety of complications of pregnancy and newborns [1, 3].

At the end of 2019, a new type of respiratory virus was discovered and identified, causing a cluster of pneumonia cases. The virus spread rapidly, and in February 2020, the WHO designated the disease as COVID-19, i.e. the coronavirus disease of 2019 [2, 7].

Large-scale studies are conducted all over the world aimed at studying the effect of respiratory viral infections on the state of the mother-placenta-fetus system in pregnant women [3, 9]. In this regard, the priority area of scientific research remains the study of the function of the vessels of the uteroplacental complex, the state of the vascular endothelium and the morphology of the placenta, as well as the assessment of the condition of newborns after childbirth, in women infected with acute respiratory viral infection (COVID-19) during pregnancy.

To date, 28 cases have been published in which the possibility of vertical transmission of SARS-CoV 2 has been confirmed. To confirm accurate vertical transmission, it was proposed to detect the virus using PCR either in umbilical cord or neonatal blood collected during the first 12 hours after birth, or amniotic fluid collected before rupture of the membranes [3, 5]. None of the cases reported to date have met these criteria, although some have reported negative test results. Several cases deserve special attention: in 9 cases, a positive nasopharyngeal smear was reported in a newborn on his birthday. The authors did not describe procedures or measures for cleaning the oropharynx,

mouth, nostrils, or face of the infant before taking a swab, and this suggests that the presence of the virus may be associated with infection of the child during childbirth through the mother's feces. When the swab was taken again, the virus was not detected.

Research materials and methods. The study was conducted at a specialized maternity center for pregnant women with Covid-19 in the Samarkand region, morphological studies were conducted at a Multidisciplinary clinic of the Samarkand State Medical University. We examined 86 pregnant women, aged 20 to 35 years, who had Covid-19 in the second (40) and third (46) trimesters of pregnancy. The research methods were general clinical and obstetric examinations, ultrasonographic and Dopplerographic examination of pregnant women and examination of newborns.

The results and their discussion. In general, the majority of pregnancies ended with emergency delivery of 49 (57%) and through the natural birth canal of 40 (46.5%). Premature birth due to obstetric complications and the severity of the mother's condition occurred in 19 (22.1%) women. According to the WHO definition, the rate of premature birth before 37 weeks of gestation is up to 10% (WHO, 2018). In our study, those affected by Covid-19 had premature birth 2.1 times more often. In this regard, each pregnant patient should be, individualized, taking into account the obstetric situation and the state of the mother-placenta-fetus system.

Every fifth (19.8%) patient's amniotic fluid contained an admixture of meconium. Progressive fetal hypoxia (unsatisfactory/inconclusive fetal condition) was, observed in 11 (12.8%) cases. Delivery by caesarean section occurred in 46 (53.5%) women according to obstetric indications: acute and progressive fetal hypoxia (unsatisfactory/inconclusive fetal condition) – 13 (15%) cases, labor anomalies and scarring on the

uterus - 12 (13.9%), PPRP - 4 (4.7%), pelvic presentation of the fetus - 3 (3.5%). Indications for COP due to the severe condition of the mother were, carried out in 14 (16.3%) women.

The analysis of the course of labor in the two groups showed the following. In patients who had Covid-19 in the second trimester of pregnancy, childbirth occurred on average at 35.3 ± 3.9 weeks, with complications occurring in 3 (7.5%). Patients who had a coronavirus infection in the third trimester of pregnancy were, delivered later in pregnancy, at an average of 36.2 ± 4.8 weeks, complications occurred in 10 (21.7%) women.

In the structure of indications for surgical delivery, the inconclusive fetal condition was in group 1 - 5 (12.5%), in group 2 - 7 (15.2%) cases.

In total, 86 newborns were born, 51 of them were full-term, 1 newborn had signs of gestation, and 34 newborns were born with signs of prematurity. Of these, in 9 cases, the birth occurred at 24-28 weeks gestation and the newborns showed signs of severe prematurity. Due to the prematurity and severe condition of newborns at birth, perinatal mortality was 5.8% (5 cases, 58%).

The average birth weight of newborns was 2800.0 ± 250.0 in group 1; 2950.0 ± 330.0 in group 1. The Apgar score for newborns averaged 3-4 points for 11 (12.8%) newborns, 5-6 points for 23 (26.7%) newborns, and the remaining 52 (60.5%) newborns were born in satisfactory condition and the Apgar score was 7-8 points or higher.

Our study revealed a significant incidence of fetal hypoxia during childbirth, which we attribute to a violation of the hemostasis system, chorial vascular thrombosis, and the presence of retrochorial and interstitial hematomas, confirmed morphologically in 19.6% of cases. Due to, the fact that the placenta performs a protective role, the fetus remains protected from coronavirus infection. An intact placenta protects the fetus from infection. However, the stress on the mother's body due to a violation in the hemostasis system leads to an increase in the frequency of fetal hypoxia during childbirth. This requires an individual approach to delivery. All placentas of mothers with coronavirus infection were, thoroughly examined to determine the management tactics of newborns and predict their further development in the future.

Due to the high incidence of complications and the severity of the mother's condition, pregnancy in COVID-19 infected patients is, characterized by earlier delivery times and mainly by the abdominal method, which, according to literature data, is up to 87%. In our observations, the frequency of abdominal delivery was 54.7%. Due to the severity of the mother's condition due to coronavirus infection, cesarean section was performed in 14 (13.4%) cases, and in 33 (31.4%) of cases, patients had complications during labor in the form of untimely discharge of amniotic fluid, inconclusive fetal condition, and prolonged labor, which, against the background of acute coronavirus infection, required expanded indications for abdominal delivery. The prognostic criteria for a favorable pregnancy outcome in women

with COVID-19 for the fetus are: BMI <25, absence of somatic pathology and timely (on the first day) seeking medical help.

Early reproductive losses (up to 22 weeks) according to X. Wang, Z. Zhou at al. They are associated with hormonal imbalance, which developed in patients with COVID-19 more often at 6-12 weeks and was characterized by a decrease in Human chorionic gonadotropin levels by almost 2 times, an increase in estradiol concentration by almost 3 times and progesterone by 6.1 times. The incidence of congenital malformations in this study was 0.9% and practically did not exceed the rates of healthy women. We observed an undeveloped pregnancy in 25.7% of cases in patients who had COVID-19 in the first trimester. However, the state of the hemostasis system and the function of the vascular endothelium in these patients suggests that the cause of these reproductive losses was the effect of the virus on the vascular endothelium, an increase in the coagulation potential of the blood, which led to thrombosis of small spiral arteries, resulting in an undeveloped pregnancy.

Conclusions. Given that Covid-19 is a viral respiratory infection that has caused an ongoing pandemic, it is important to understand its impact on women in labor and their newborns [3, 5, 6]. Moreover, two other known human coronaviruses (SARS-CoV and MERS-CoV) have been associated with adverse clinical outcomes, including life-threatening maternal disease, maternal mortality (in a small but significant number of cases), delayed fetal development, premature birth, hospitalization of women and newborns in the intensive care unit, spontaneous abortions and perinatal death [1, 4, 8].

High incidence of obstetric (pre-eclampsia, premature pregnancy - HR 3.41-3.50) and perinatal complications (Apgar score <8 points (49-57%), transfer to the intensive care unit (26-30.2%). Transfer to the second stage of nursing (23-26.7%), perinatal mortality - 15-143%) in patients with COVID-19, compared with non-infected women, is determined by an initially aggravated somatic (RR 1.44-11.49) condition and an obstetric and gynecological history (RR 0.82-3.69).

Analysis of the results of the study shows that in patients with viral infections, the frequency of premature birth and the need for surgical delivery is higher than in the general population. In our study, perinatal mortality was 5.8%. To improve perinatal outcomes and the risks of additional complications in newborns and pregnant women with respiratory viral infections, it is necessary to prescribe drugs to improve blood flow in the mother-placenta-fetus system.

Prevention of perinatal complications in patients with COVID-19 consists in earlier detection of the disease, timely initiation and adequate treatment of both the underlying disease and improvement of blood circulation in the mother-placenta-fetus system, rational preparation, choice of time and method of delivery to exclude the influence of initial adverse somatic and obstetric-gynecological factors on pregnancy outcomes. and childbirth.

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