

Maternal and perinatal outcomes associated with COVID-19: A review of the literature

Abstract

Objective: To determine obstetric and perinatal outcomes in COVID-19 infection through a literature review.

Methodology: An advanced search was carried out in Pubmed, with the format: patient, intervention and results with 67 terms, among them: “pregnant”, “newborn”, “covid-19”, “abortion” and “placental pathology”. A filter for the year 2019 and 2020 was applied, 506 studies were found that were filtered by title, abstract and type of study, selecting those whose sample is pregnant and/or neonates diagnosed with COVID-19, and who report negative obstetric and/ or perinatal results. Finally, 42 were selected.

Results: The results that stood out due to their prevalence or severity were: premature delivery, placental pathology, IgM and/or IgG antibodies to COVID-19 increased in pregnant women and newborns, non-reassuring fetal status, COVID-19(+) in breast milk, in liquid amniotic or vaginal swab, probable intrapartum transmission, admission to the NICU, poor fetal or maternal vascular perfusion and caesarean section due to a maternal condition associated with the virus.

Conclusions: We suggest establishing timely prevention measures in pregnant women to avoid contagion by COVID-19 during and after pregnancy, in order to avoid the risk of complications associated with the virus that carries important consequences for the mother and/or newborn.

Keywords: pregnancy, newborn, COVID-19

Volume 9 Issue 5 - 2023

Camila Escobar Jaramillo,¹ Gabriela Carmach Ananias,¹ Carlos Kilchemmann Fuentes²

¹School of Obstetrics and Childcare, Faculty of Sciences, Universidad Mayor, Chile

²Midwife, master in Clinical Epidemiology, School of Obstetrics and Childcare, Faculty of Sciences, Universidad Mayor, Chile

Correspondence: Camila Escobar Jaramillo, School of Obstetrics and Childcare, Faculty of Sciences, Universidad Mayor, Address: Avenida Alemania 0281, Temuco, Chile, Tel (569) 223336184, Email camila.escobar@mayor.cl

Received: October 9, 2023 | **Published:** November 1, 2023

Introduction

The appearance of the new coronavirus infection that occurred in China in December 2019 caused a pandemic that has rapidly expanded globally, becoming one of the most important public health threats in recent times.¹ The emergence of a new coronavirus, called SARS-CoV-2, and the potentially fatal respiratory disease it can cause, COVID-19, has spread rapidly throughout the world. Previous epidemics originating from emerging viral infections have resulted in poor obstetric outcomes, including maternal morbidity and mortality, maternal-fetal transmission of the virus, and perinatal infections and death.³⁻⁷

This new disease is the third documented spread of an animal coronavirus to humans. The previous epidemics caused by β -coronavirus are SARS-CoV and MERS-CoV, which share similarities with SARS-CoV-2 in their genetic structure. They reported maternal fatality rates of 10% and 37% respectively, in which maternal and perinatal morbidity and mortality were not exempt.⁸⁻¹¹

COVID-19 disease may be associated with adverse maternal and neonatal outcomes in pregnancy, but there are few controlled data to quantify the magnitude of these risks or to characterize the epidemiology and risk factors.¹²

During pregnancy, women experience immunological and physiological changes that could increase their risk of more serious illness from respiratory infections.² Changes in the maternal cardiovascular and respiratory systems, including increases in heart rate, stroke volume, oxygen consumption, and decreased lung capacity, as well as the development of immunological adaptations that allow the mother to tolerate a fetus antigenically distinctive, increase the

risk for pregnant women of developing serious respiratory disease.³ Among women of reproductive age with COVID-19, pregnant women are more likely to be hospitalized and are at greater risk of being admitted to an ICU and receiving mechanical ventilation, compared to non-pregnant women, but their risk of death is similar.² An important question that remains unanswered is whether SARS-CoV-2 can be transmitted vertically and by what mechanism if this occurs. This is not only an important public health problem, it also represents an obstetric management problem to determine the care that pregnant women receive.³ Due to the above, the objective of this review is to determine obstetric and perinatal outcomes in COVID-19 infection, through a review of the literature.

Methodology

The literature search was carried out in September 2020, through the Pubmed database and using the patient, intervention and result format, with a total of 67 terms in English of All text type and Mesh terms. Likewise, it used the following search strategy: 1 patient terms, 2 exposure terms, 3 results, 4 1 AND 2 AND 3. Year filter was applied from 2019 to 2020 and 506 studies were found, which were published from February to September 2020. These were selected according to title, then summary and finally reading the full text, leaving 95 articles.

The selected articles were distributed identifying the type of study, author, total sample and results, and secondary studies were discarded, those that did not include pregnant women or COVID-19 (+) neonates in their sample and that did not present obstetric and/or results. or perinatal. Finally, 43 articles were selected, with which a table was made with the results found in each of them, which included the author, the sample, the number of DOI, obstetric outcomes and neonatal outcomes (Figure 1).

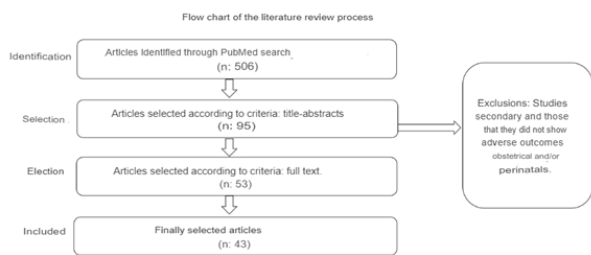


Figure 1 Item identification flowchart.

Results and discussion

Obstetric and neonatal outcomes were grouped in a table identifying the number of cases found in the main outcomes of the selected studies (Table 1). More than 80% of the selected articles were carried out in China and no study made reference to sociodemographic characteristics that could influence the risk of presenting alterations associated with the virus.⁴⁴

Premature birth was the outcome most frequently associated with COVID 19 infection. Similar results were reported in previous reviews,⁴⁵ in which a preterm birth rate of 39% was reported. Although preterm birth was mainly a consequence of elective interventions, there is a trend towards spontaneous prematurity.⁴⁶

Table 1 Obstetric and neonatal outcomes associated with COVID-19 infection

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Cao D, et al. ⁴	Clinical analysis of ten pregnant women with COVID-19 in Wuhan, China: A retrospective study.	10 pregnant women (1 twin) between 33+6 to 40+5 weeks.	Intrapartum cesarean section for acute fetal distress: 2. Elective cesarean sections due to previous cesarean section or DPPNI or PE or twin: 6. Premature rupture of membranes: 4. Preeclampsia: 3. DPPNI: 1.	Preterm RN: 4.
Vlachodimitropoulou E, et al. ⁵	COVID-19 and acute coagulopathy in pregnancy.	2 pregnant women. Case 1: G2P1 35+5 weeks, 40 years. Case 2: Primigesta 35+2 weeks, 23 years.	Case 1: Caesarean section due to probable impossibility of neuraxial anesthesia due to coagulopathy and postpartum hemorrhage Case 2: Emergency cesarean section due to non-reassuring fetal status plus progressive coagulopathy and transaminitis.	Preterm RN: 2. Case 2: APGAR from 4, 2, 7 to 1, 5 and 10 minutes, respectively.
Ferrazi E, et al. ⁶	Vaginal delivery in SARS-CoV-2-infected pregnant women in Northern Italy: a retrospective analysis.	Sample: 42 postpartum women within 36 hours postpartum.	Caesarean sections: 18, of which 11 elective cesarean sections due to worsening symptoms. Induction and vaginal delivery: 3. Premature birth: 11, of them, 5 were spontaneous. Postpartum hemorrhage: 1.	RN COVID-19(+): 1 vaginal delivery with immediate postpartum isolation. He had gastrointestinal and respiratory symptoms. She required admission to the NICU and one day of mechanical ventilation. 2 RN were (+) after COVID-19 diagnosis in 2 postpartum women who did not wear a mask. Admission to NICU: 3. Preterm RN: 2 with APGAR <7 at 5 minutes.
Zhu H, et al. ⁷	Clinical analysis of 10 neonates born to mothers with 2019-nCoV pneumonia.	9 pregnant women, 1 twin.	Non-reassuring fetal state: 6. Premature rupture of membranes: 3. Polyhydramnios: 1. Oligohydramnios: 1. Cord twist: 1. Colloid bead: 1. Placenta previa: 1.	Small for gestational age: 2. Large for gestational age: 1. NB with gastrointestinal symptoms: 4. Abnormal chest x-ray: 4. Respiratory distress syndrome: 2. Complicated thrombocytopenia: 2. Alteration of liver function: 2, 1 of them was premature and went on to multi-organ failure with DIC and died on the 9th day. The other premature infant required oxygen therapy and transfusions and was cured after 15 days.

Table 1 Continued.....

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Wu I, et al. ⁸	Coronavirus disease 2019 among pregnant Chinese women: case series data on the safety of vaginal birth and breastfeeding.	13 pregnant women between 5 and 38 weeks.	Demonstration of COVID-19 in stool: 1 of 9 samples. Non-reassuring fetal state with premature birth: 1. Spontaneous premature birth: 1. Cesarean sections due to ignorance and fear of the probable vertical transmission of the virus: 3. Breast milk study for COVID-19 (+): 1 of 3, positive on the first day postpartum, negative on the third day.	Preterm RN: 2. Neonatal pneumonia: 2. Large for gestational age: 1. IgM and IgG seroconversion: 1.
Zamaniyan, et al. ⁹	Preterm delivery, maternal death, and vertical transmission in a pregnant woman with COVID-19 infection.	1 pregnant woman at 32 weeks.	Caesarean section due to maternal condition associated with the virus. Premature birth. COVID-19 (+) amniotic fluid sample. Maternal death.	Admission to NICU. Low birth weight. RN COVID-19 (+) at 24 hours of life.
Kirstman, et al. ¹⁰	Probable congenital SARS-CoV-2 infection in a neonate born to a woman with active SARS-CoV-2 infection.	Sample: 1 G2P1 pregnant woman at 35+5 weeks, 40 years.	Presence of the COVID -19 virus in breast milk: (+) Presence of the COVID-19 virus in vaginal swab: (+) Semi-urgent cesarean section due to worsened maternal condition associated with coagulopathy due to the virus. The placenta showed multiple areas of infiltration by inflammatory cells and extensive early infarction.	PCR COVID-19 (+) in plasma. PCR COVID-19 (+) in feces. Hypoglycemia. Hypothermia. Admission to NICU. Neutropenia Alteration of liver function. (RN with immediate postpartum isolation)
Zeng H, et al. ¹¹	Antibodies in Infants Born to Mothers With COVID-19 Pneumonia.	Sample: 6 pregnant women	Cesarean sections: all. Elevated IgG and/or IgM for COVID-19 without other pathogens.	All NBs with increased antibodies in serum (5 IgG and 2 IgM). Increased inflammatory cytokine interleukin-6: all.
Brandt J, et al. ¹²	Epidemiology of coronavirus disease 2019 in pregnancy: risk factors and associations with adverse maternal and neonatal outcomes.	Sample: 61 pregnant women between 16 and 41 weeks between March 11 and June 11. They matched 2:1.	Premature birth: 13. Chorioamnionitis: 2. MEFI in persistent category 2: 6 Preeclampsia: 6	Admission to NICU: 53. Respiratory distress syndrome: 5. Interventricular hemorrhage: 1. Low birth weight: several (not clearly identified). Neonatal death: 1.
Baergen ¹³	Placental Pathology in COVID-19 Positive Mothers: Preliminary Findings.	20 pregnant women between 32+2 and 40+4 weeks.	Lesions of poor maternal vascular perfusion: 5. Poor low-grade fetal vascular perfusion (deposition of fibrin in the intima of the vessel or thrombosis of chorionic villi): 9. Chorioamnionitis and acute funisitis: 1. Massive placental infarction: 1. Chorangioma: 1.	No alterations were described or found.
Kuhr , et al. ¹⁴	Placental abruption in a twin pregnancy at 32 weeks' gestation complicated by coronavirus disease 2019 without vertical transmission to the babies.	1 mono chorionic diamniotic twin gestation of 32 weeks.	Premature detachment of normal inserted placenta. Premature birth. Emergency cesarean section due to metrorrhagia before childbirth. Placental hypoperfusion. Accelerated villous maturation (mild hypoperfusion).	Need for neonatal resuscitation: both. NICU admission: both.

Table 1 Continued....

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Pierce-Williams, et al. ¹⁵	Clinical course of severe and critical coronavirus disease 2019 in hospitalized pregnancies: a United States cohort study.	64 pregnant women with an average of 30+6 weeks. 44 with serious illness and 20 with critical illness from Covid-19.	Serious illness: Average gestational age at delivery: 37 weeks. 15/44 birth during the course of COVID-19. Critical illness: 17/20 delivery during the course of COVID-19. Childbirth/cesarean section by maternal status: 22. Childbirth/cesarean section due to fetal status: 3. Childbirth/cesarean section for obstetric reasons: 7. Postpartum hemorrhages: 3. Premature birth: 17. Probable chorioamnionitis or endometritis: 3. Hypertensive pregnancy syndrome: 2 Average gestational age at delivery: 32 weeks.	RN COVID-19(+): 1 at 48h, asymptomatic (no isolation identified). Admission to NICU: 21. Average Apgar 7.9+ 1.7.
Penfield C, et al. ¹⁶	Detection of severe acute respiratory syndrome coronavirus 2 in placental and fetal membrane simplex.	32 parturients.	COVID-19 amniotic surface placenta swab (+): 1. COVID-19 (+) ovular membrane smear: 2. Caesarean section in serious or critical illness: 4. Premature birth in serious or critical illness: 3.	No alterations were described or found.
Foong K, et al. ¹⁷	COVID-19 in Neonates and Infants: Progression and Recovery.	8 COVID-19(+) infants (Age between 5 days to 1 year).	No alterations were described or found.	Neutropenia and thrombocytosis: 2. Suspected sepsis: 4. Respiratory symptoms: 4. A non-isolated COVID-19 (+) premature infant at 5 days required admission to the PICU, had hypothermia, apnea, required PPV, phototherapy and was diagnosed with ASD.
Vallejo V, et al. ¹⁸	A Postpartum Death Due to Coronavirus Disease 2019 (COVID-19) in the United States	1 pregnant woman at 37 weeks.	Caesarean section due to maternal condition. Maternal death due to multiple organ failure.	No alterations were described or found.
Blauvelt C, et al. ¹⁹	Acute Respiratory Distress Syndrome in a Preterm Pregnant Patient With Coronavirus Disease 2019 (COVID-19).	1 pregnant woman at 28 weeks.	Cesarean section x impaired respiratory condition. Premature birth of 28+6 weeks. Postpartum hemorrhage due to uterine atony. Placental study showed acute subclinical chorioamnionitis.	TOPGAR4 and 8 to the minute and 5 minutes respectively. Need for neonatal resuscitation due to RDS. Leukopenia. Neutropenia. Lymphopenia, Mild acidosis.
Martinelli ²⁰	Pulmonary embolism in a young pregnant woman with COVID-19.	1 pregnant woman at 29 weeks.	Caesarean section due to maternal condition associated with the virus.	Admission to NICU with adequate evolution.

Table I Continued....

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Kuusela A, et al. ²¹	Two cases of coronavirus 2019-related cardiomyopathy in pregnancy.	2 pregnant women with serious Covid-19 infection. Case 1: 45 years G4P2 39+2 weeks. Case 2: 26 years G3P1 33+6 weeks.	Preeclampsia: 1. Caesarean section due to maternal condition associated with the virus: 1. Preventive cesarean section due to possible maternal aggravation: 1.	No alterations were described or found.
Xu L, et al. ²²	Clinical presentations and outcomes of SARS-CoV-2 infected pneumonia in pregnant women and health status of their neonates.	5 pregnant women between 34+4 and 38+6 weeks with mild pneumonia.	Caesarean section due to viral pneumonia: 3. Premature birth due to maternal pneumonia: 2. Mild premature placental abruption: 1. Polyhydramnios: 1. Occlusive placenta previa: 1.	Scattered rashes on the face and body: 1. All COVID-19(-) RNs. Preterm RN: 2. Low birth weight: 1.
Patanè L, et al. ²³	Vertical transmission of coronavirus disease 2019: severe acute respiratory syndrome coronavirus 2 RNA on the fetal side of the placenta in pregnancies with coronavirus disease 2019-positive mothers and neonates at birth.	22 pregnant women with an average of 35 weeks of gestation.	Non-reassuring fetal state: 1. Caesarean section for fetal cause: 1. The 2 placentas of the infected newborns showed chronic intervillitis with the presence of macrophages in the intervillous and villous space.	RN COVID-19 (+): 2, 1 RN was allowed rooming-in and breastfeeding with a mask, the other was isolated immediately postpartum. Preterm RN: 1. Admission to NICU: 1. Difficulty feeding: both.
Hu X, et al. ²⁴	Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vertical transmission in neonates born to mothers with coronavirus disease 2019 (COVID-19) pneumonia.	7 pregnant women between 37+2 and 41+2 weeks.	Cesarean sections: 6. Premature rupture of membranes: 1.	RN COVID-19 (+): 1 asymptomatic with immediate postpartum isolation. In the other RN, the throat swab, blood, feces and urine samples gave negative results.
Sentilhes, et al. ²⁵	Coronavirus disease 2019 in pregnancy was associated with maternal morbidity and preterm birth.	54 pregnant women average 32 weeks.	Caesarean section due to maternal status associated with the virus: 9. Caesarean section due to worsened maternal condition associated with the virus: 3. Preeclampsia: 2. Intrauterine growth restriction: 1. Premature birth: 5. Postpartum hemorrhage: 1.	Admission to NICU: 3. Small for gestational age: 1. Low birth weight: various (unspecified)
Alzamora, et al. ²⁶	Severe COVID-19 during pregnancy and possible vertical transmission.	33 weeks pregnant, G3P2, 41 years old	Premature birth: Caesarean section due to maternal respiratory compromise.	COVID-19 (+) RN without breastfeeding, with immediate postpartum isolation. Need for ventilatory support for 12 hours then positive pressure ventilation. Need for NICU admission.
Khan S, et al. ²⁷	Association of COVID-19 with pregnancy outcomes in health-care workers and general women.	17 pregnant women between 35 and 41 weeks.	Premature birth: 3. Caesarean section: 17. Premature rupture of membranes: some (not specified).	RN COVID-19 (+): 2. Pneumonia: 5, 1 of them with a diagnosis of COVID-19 (+). Low birth weight: several (does not specify quantity).

Table I Continued.....

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Hang ZJ, et al. ²⁸	Novel coronavirus infection in newborn babies aged <28 days in China.	4 full-term newborns with less than 28 days of life among the 81,026 cases of COVID-19 as of March 13, 2020.	Cesarean sections: 4 (all).	RN COVID-19 (+): 4, 2 by diagnosis in nasopharyngeal swab and 2 by anal swab. (age at diagnosis between 30 hours and 17 days). 3 of them were isolated at birth. 3 had respiratory symptoms, fever and vomiting. Days of hospitalization: between 14 and 30
Chen Y, et al. ²⁹	Infants born to mothers with a new coronavirus (COVID-19).	4 pregnant women.	Cesarean section due to infection concerns: 3.	Skin rashes: 2. Facial ulcers: 2. Neonatal tachypnea: 1. Admission to NICU: 1.
Zeng L, et al. ³⁰	First case of neonate with COVID-19 in China.	1 full-term RN with 17 days of life, child of COVID-19 (+) parents.	No alterations were described or found.	RN COVID-19(+) detected in nasopharyngeal swab and anal swab. Increased CD4 and CD8 lymphocytes. Neutropenia. Gastrointestinal disorders.
Kamali M, et al. ³¹	Novel coronavirus in a 15-day-old neonate with clinical signs of sepsis, a case report.	Neonate 15 days old.	No alterations were described or found.	RN COVID-19(+) detected in nasopharyngeal swab without isolation. Signs of sepsis. Dyspnoea. Admission to NICU.
Wang Z, et al. ³²	Clinical characteristics and laboratory results of pregnant women with COVID-19 in Wuhan, China.	72 women of which 30 were pregnant. Average GA: 38 weeks.	Meconium amniotic fluid: 4 Premature rupture of membranes: 6	No alterations were described or found.
Dong L, et al. ³³	Possible vertical transmission of SARS-CoV-2 from an infected mother to her newborn.	Primiparous 34+2 weeks, 29 years old.	IgG and IgM for COVID-19 increased.	Elevated IgG and IgM Increased inflammatory cytokine interleukin-6. Hepatic injury. Leukocytosis. (RN with immediate isolation)
Liu D, et al. ³⁴	Pregnancy and perinatal outcomes of women with coronavirus disease (COVID-19) pneumonia: a preliminary analysis.	fifteen pregnant women between 12 and 38 weeks between 23 and 40 years old.	Cesarean sections: 10. Premature birth due to fear of antiviral therapy: 3.	No alterations were described or found.
Chen R, et al. ³⁵	Safety and efficacy of different anesthetic regimens for parturients with COVID-19 undergoing Caesarean delivery: a case series of 17 patients.	17 parturients.	Significant hypotension in continuous epidural anesthesia: 12, of a total of 14 who used it. Premature birth: 3.	No alterations were described or found.
Chen S, et al. ³⁶	Pregnancy with new coronavirus infection: clinical characteristics and placental pathological analysis of three cases.	3 postpartum women diagnosed with Covid-19(+) before delivery.	Chorionic hemangioma: 1. Multifocal placental infarction: 1. Fibrin deposition in or around placental villi: 3. Premature birth: 1	Preterm RN: 1. Low birth weight: 1.

Table I Continued.....

Authors, year and city	Study title	Sample	Obstetric outcomes and number of cases	Neonatal outcomes and number of cases
Shanes, et al. ³⁷	Placental pathology in COVID-19	Sample: 16 placentas from Covid-19 mothers (+)	At least 1 sign of poor maternal vascular perfusion: 15. Intrauterine fetal death: 1.	No alterations were described or found.
Prabhu, et al. ³⁸	Pregnancy and postpartum outcomes in a universally tested population for SARS-CoV-2 in New York City: a prospective cohort study.	675 pregnant women with average gestational age: 39 weeks.	Caesarean sections due to fetal causes: 4. Caesarean sections for obstetric reasons: 11. Postpartum hemorrhage: 8. Probable puerperal endometritis: 4. Poor fetal vascular perfusion: 14. Poor maternal vascular perfusion: 8. Meconium amniotic fluid: 18. Histological chorioamnionitis: 1. Vellitis: 1.	No alterations were described or found.
Ferraiolo, et al. ³⁹	Report of Positive Placental Swabs for SARS-CoV-2 in an Asymptomatic Pregnant Woman with COVID-19.	1 pregnant woman at 38 weeks.	Positive placental study for COVID-19.	No alterations were described or found.
Nawsherwan ⁴⁰	Impact of COVID-19 pneumonia on neonatal birth outcomes.	7 pregnant women	Non-reassuring fetal state: 1. Premature birth: 3.	Low birth weight: 1. Respiratory distress syndrome: 3. Admission to NICU: 2.
Mendoza, et al. ⁴¹	Pre-eclampsia-like syndrome induced by severe COVID-19: a prospective observational study.	42 pregnant for an average of 32 weeks.	Preeclampsia: 5.	No alterations were described or found.
Futterman I ⁴²	COVID-19 and HELLP: Overlapping Clinical Pictures in Two Gravid Patients	2 pregnant women, 22 and 29 weeks.	Intrauterine fetal death: 1. Non-reassuring fetal state: 1. Perivillous fibrin deposit: 2. Placental infarction: 1. Intervillositis: 1.	RN COVID-19 (+): 1 (does not identify immediate postpartum isolation). Admission to NICU: 1. Leukocytosis: 1. Alteration of liver and kidney function: 1.
Grob R, et al. ⁴³	Detection of SARS-CoV-2 in human breast milk.	2 puerperal women.	Mother's milk 1: COVID 19 (-). Mother's milk 2: COVID-19 (+) for 4 consecutive days.	RN 1: COVID-19 (-) RN 2: COVID-19(+) (No RN had immediate postpartum isolation)

Cesarean delivery was also an outcome seen more frequently in infected mothers, according to the review by Zaigham & Andersson,⁴⁷ which considered 18 articles reporting data on 108 pregnancies between December 8, 2019 and December 1 April 2020. It also reports a cesarean section rate of 91%. These data agree with those found in the present review of the literature, where cesarean delivery has a high prevalence, generally due to iatrogenic causes.

These results also agree with the review by Cabero et al.,⁴⁸ which included 33 articles, with a number of 553 pregnant women and 456 deliveries. About two-thirds of births were via cesarean section; no maternal deaths occurred. There was prematurity in 22.3% of deliveries and the neonate required admission to the ICU in 38.3% of cases. Only one neonatal death (0.4%) and 13 neonatal COVID-19 cases (3.4%) were reported. The information available does not allow us to ensure that transmission occurred transplacentally.

The results reported in other publications are comparable with those presented in the present review. Most of the adverse effects reported are similar, with premature birth being positioned as the main one. The route of delivery by cesarean section - in the same way - is an important factor, realizing that in most cases this route of delivery is chosen in order to ensure fetal and maternal well-being.

In this literature review it was not possible to establish risk measures, mainly due to the heterogeneity of the outcome variables.

Conclusion

Currently, there is no evidence that demonstrates the vertical transmission of the SARS-COV2 virus during pregnancy, the intrapartum period or through breastfeeding, but there is history that demonstrates adverse results of the disease on pregnancy and

the newborn, being the most frequent and relevant are premature birth and placental deterioration, pathologies that have serious repercussions on newborns.

The predominance of inflammatory alterations and uteroplacental blood perfusion in infected pregnant women is notable, which generate the basis for a cascade of mother-child complications such as premature birth, pneumonia, restrictive fetal growth, premature rupture of membranes, chorioamnionitis, hypertensive pregnancy syndrome or low birth weight, among others.

Considering that COVID-19 has pathogenic potential to cause serious adverse maternal or perinatal outcomes, we suggest an active search for the SARS-CoV-2 virus in the pregnant population, through a universal evaluation of all pregnant women - prior to delivery - and their newborns, with nasopharyngeal swab PCR.

Having knowledge of the negative effects produced by virus infection during pregnancy allows us to guide the work of health professionals in the current pandemic context and create preventive and self-care measures for the pregnant woman, her dyad and her family environment, such as Also, define and apply local protocols and regulations in each health facility, for the adequate protection and management of confirmed and suspected cases of COVID-19 (+) pregnant women. Additionally, to reduce the occurrence of serious illness, pregnant women should be counseled about the potential risk of COVID-19 disease and prevention measures should be emphasized.

Acknowledgement

None.

Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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