



Management of Obstetrics and Gynecological Patients with COVID-19

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Since December 2019, the Coronavirus illness, commonly known as COVID19, has quickly spread from Wuhan, China. The first COVID-19 patient was identified in Italy on February 20, 2020, and developed respiratory failure, prompting hospitalization to the critical care unit (ICU). For more than a year, the highly contagious and lethal coronavirus illness has been causing havoc on the earth. It has progressed to a pandemic level affecting the lives of millions around the globe. The condition can afflict anybody, and there is currently no definitive treatment. Pregnant women do not appear to be more susceptible to infection than the general population. On the other hand, pregnant women have a different immune system and a stronger overall response to viral infections, which could lead to more severe symptoms in some cases, such as COVID-19. COVID-19 presents a minimal overall risk to expecting moms. On the other hand, pregnancy increases the chance of COVID-19-related severe illness and fatality. On the other hand, pregnant women may be more susceptible to serious, potentially fatal respiratory illnesses. Furthermore, research shows that maternal-fetal transfer occurs via contact with respiratory secretions, excluding transmission in the womb. As a

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result, the best way to manage breastfeeding is uncertain, and the infant may need to be isolated from the mother for a short time. Finally, because healthcare providers are at a higher risk of infection during birth, further measures must be followed along with a proper management and care plan of both the mother and the health care provider.

Keywords: COVID-19; pregnancy; mother; infant; fetus; management; care.

1. INTRODUCTION

How to deal with COVID-19 during pregnancy.

The surveillance report from CDC (Center for disease control and prevention) will provide the results of over four hundred thousand females in their reproductive age with diagnostic confirmation of Covid-19 and symptomatic Covid-19 in November 2020, according to a research. Increased number of ICU admission were seen in pregnant females (10.5 v/s. 3.9 cases per 1,000 cases), extracorporeal membrane oxygenation (0.7 v/s. 0.3 cases per 1,000 cases), and increased need of mechanical ventilation (2.9 v/s. 1.1 cases per 1,000 cases). Pregnant women, on the other hand, have a different immune system and a stronger overall response to viral infections, which could lead to more severe symptoms in some cases, such as COVID-19 [1]. Females between the ages of 35 and 44 were roughly having four times more chances to be on mechanical ventilation and two times more likely to die as a result of increased risk of severe illness. Furthermore, research shows that maternal-foetal transfer occurs via contact with respiratory secretions, excluding transmission in the womb Maternal age, a high BMI, and any pre-existing maternal comorbidities, such as chronic hypertension or diabetes, all resulted with poor outcomes. 5 Covid-19 positive pregnant females have a high risk of stillbirth and premature delivery than Covid-19 negative pregnant females [2].

1.1 COVID-19's Effect in Pregnant Women

Women who are pregnant seem not to be susceptible to infection than the common population. On the other hand, pregnant women have altered immunity and increased body's overall reaction to viral infections, perhaps leading to more severe symptoms in some circumstances, such as with COVID-19. In pregnant women, COVID19 pneumonia has been found to be milder and to have a better prognosis. The risk to the mother appears to grow throughout the last trimester of pregnancy in other forms of coronavirus infection (SARS,

MERS). Premature birth has been reported in COVID-19-positive women.

The most vulnerable are women who are pregnant and have a heart issue (congenital or acquired).

Perinatal worry and stress, as well as interpersonal aggression, are all increased by the coronavirus pandemic. Expanding support for women and families as much as possible is vital, as is asking women about their mental health at all times. Pregnant women should be told about SARS-increased CoV-2's risk of severe sickness, as well as the steps to follow in order to ensure protection of their child and themselves.

Practices such as physical separation, washing of hands, and to wear a face mask, to name a few.

Patients who have not received their vaccine against the SARS-CoV-2 virus should be recommended to wear a face mask and be vaccinated. Prenatal care is recommended by ACOG (American College of Obstetricians and Gynecologists), C.D.C (Center for disease control and prevention), and S.M.F.M (Society for maternal-fetal medicine) [3].

2. TRANSMISSION

Recent study shows that Prenatal or intrapartum transmission from mother to infant (Vertical transmission) is again recognized as a possibility, albeit the number of afflicted pregnancies and neonatal effects are unknown. As of yet, no cases of COVID-19 testing positive vaginal secretions have been documented. As of yet, no cases of COVID-19 testing positive breast milk have been documented.

3. EFFECT ON FOETUS

Covid-19 is not associated with an increased chance of spontaneous abortion or early pregnancy loss at this time. Currently no record shows the teratogenicity of the virus. Long-term data collection is still ongoing. At this moment,

COVID-19 infection is not a medically acceptable reason to obtain an abortion as covid has not been linked to cause any harmful effects on the mother [4].

3.1 Guidelines for Obstetric Health Care Providers

Obstetricians and healthcare professionals must obtain instructions from municipal and state healthcare agencies before testing people under surveillance, thereby adhering to the guidelines.

In the event of a COVID19 PUI, health care providers should contact their facility's infection control team as well as their local or state health agency right away. A record should be preserved for all pregnant women hospitalized with a Covid-19 illness. Maternal and infant records should be filled out completely and kept for future reference. Healthcare professionals must develop a strategy for managing the risk of a dwindling staff, a lack of PPE (personal protective equipment), and isolated rooms and optimize the utilization of telecommunication in as many parts of maternal care as feasible. In order to stop coronavirus that brings about Covid-19 from spreading, each institution should assess its acceptable space and personnel needs. To limit the risk of infection, pregnant women should maintain a greater social distance and practice hand cleanliness. As soon as a pregnant patient with HIV is diagnosed, healthcare providers must inform the infection control staff at their establishment.

1. The lady should be able to have a single, symptom-free birth partner with her throughout her pregnancy and delivery, with minimal staffing needs and have the capacity to offer emergency obstetric, anesthesia, and newborn care as needed. Visitors to be advised to use P.P.E such as a face masks, glove, gowns, and protective eyewear, and Females are to be greeted by professionals wearing proper PPE and provided a surgical face mask as they enter the maternity unit. Employees providing care must wear personal protective equipment (PPE) until they are in a safe setting (Personal Protective Equipment) [5].

Specific Obstetric Management Considerations
Medical history.

Travel experience (detailed).

COVID-19 symptoms.

Exposure to persons who had COVID-19 symptoms in the past.

Whether they are from areas with the highest number of instances.

Other conditions, include those who are immunocompromised.

3.2 COVID-19 Treatment During Pregnancy

Women who are pregnant and were exposed to the covid-19 virus in the past 14 days (i.e. living together direct contact with affected person). RTPCR for SARS-CoV2 in deep nasopharyngeal and pharyngeal samples + ASYMPTOMATIC CLINICAL EXAMINATION. Isolation is not required; merely monitor at home and discontinue monitoring if the findings are negative. If you are positive, you must stay at home for 14 days. A fever of more than 38°C and respiratory problems are symptoms.

- hospital monitoring - proposed negative pressure isolation room, on-site delivery and newborn treatment equipment If the retest comes out negative, the patient must be isolated and self-monitored at home for 14 days. Keep a watch on the mother's vital signs as well as the foetus. If the mother has severe illness before the 24th week of pregnancy, MTP should be considered. On-site vaginal delivery after 24 weeks of pregnancy. Clamping the umbilical cord early and keeping a baby clean, as well as monitoring a newborn's RTPCR. The mother is removed from her newborn until the viral infection is resolved. Pregnant females with probable Covid-19 who are observed on any social media channel can be regularly followed using specific criteria that help look out for any new obstetric or respiratory symptoms and manage co-morbidities through phone or video chat [6].

4. INITIAL MANAGEMENT

If the symptoms are modest and there are no preexisting morbidities, certain instructions are to be given to the patients, and a phone follow-on should be scheduled accordingly within 24–48 hours or 7 days. When diagnostic testing is to be performed on all symptomatic females, drive-in or walk-in at health centers are deemed to be suitable for unconfirmed or confirmed patients (identified by routine triage of symptoms or self-

reported). Visitors must be provided with surgical masks and told to wait in a secure area or outside the facility. In compliance with the hospital's security procedure, healthcare workers will help the patient accordingly. As a general rule, we advise limiting the number of experts participating in face-to-face interactions. To confirm suspicions, the first evaluation might be performed over the interphone from out of the examination room, reducing exposure. Physical examination and detailed medical history and temperature, oxygen saturation (SO₂), blood pressure, heart rate, and respiratory rates must all be measured. According to gestational age of the mother or any symptoms, foetal heart auscultation, CTG (cardiotocography), or foetal USG (ultrasonography) must all be done. If the symptoms are minor and there are no comorbidities, the patient should be given specific instructions, and a phone follow-up shall be planned accordingly within 24 to 48 hours or 7 days. When diagnostic testing is performed on all symptomatic females, drive-in or walk-in at health centers are deemed suitable for unconfirmed or confirmed patients (identified by routine triage of symptoms or self-reported). Visitors must be provided with surgical masks and told to wait in a secure area or outside the facility. Healthcare workers will help the patient in compliance with the hospital's security procedures. determine the viability or well-being of the foetus.

If a clinical sign appears (respiratory rate more than 20 bpm, SO₂ less than 96%, or a body temperature more than 38°C, and dyspnea). Foetal protective protocols such as abdominal apron is required for a chest X-ray. A blood count, a kidney function test (creatinine and urea), an electrolyte panel (Na, K⁺, Ca, Mg), a liver profile (lactate dehydrogenase and C-reactive protein), and a coagulation test are all part of the lab work (prothrombin time and activated partial thromboplastin time) [7].

5. INTRAPARTUM CARE

A full fetal and maternal examination must be conducted once in an enclosed area, which should include:

The level of COVID-19 symptoms is assessed by a medical team that includes a medical specialist or infectious disease specialist. Ideally, the birth will take place at a tertiary care hospital, and the mother's temperature, respiration rate, and oxygen saturations will all be monitored.

Confirmation of the start of labour, in accordance with normal care. A cardiotocography (electronic foetal monitoring) is a device that measures the heart rate of a pregnant woman (CTG). Check your oxygen saturation every hour throughout labour.

6. CARE IN LABOUR

If a woman exhibits sepsis symptoms, manage and evaluate her for sepsis during pregnancy, while also looking for Covid-19 infection as a possible factor for sepsis. If respiratory condition of the women requires an emergency delivery, continuous electronic foetal monitoring is recommended during labour, and there is no evidence to suggest that one type of birth is superior to another at this time. Start to make assessment of risk and advantages of extending the labour vs. an immediate caesarean delivery if the latter is more likely to improve resuscitation attempts if the female's symptoms worsen. If a symptomatic female is getting fatigued or hypoxia, a choice should be taken on an individual basis whether or not to use selective assisted delivery to shorten second stage of labour.

6.1 Managing Patients with Covid-19 in Critical Care

Hourly measurements that track both absolute and trending data are especially crucial in pregnant women. Fetal and uterine contraction monitoring depending on gestational age, when appropriate, should be part of COVID-19 management in pregnant patients. Delivery planning that is customized.

As needed, consultation with obstetric, maternal-fetal medicine, infectious disease, pulmonary-critical care, and pediatric specialists. In general, pregnant COVID-19 patients should get the same treatment as non-pregnant COVID-19 patients. Because of potential safety concerns, the COVID-19 Treatment Guidelines Panel advises against delaying COVID-19 and SARS-CoV-2 vaccine treatment from pregnant or nursing women. Titrate oxygen to maintain oxygen saturations of >94 percent. Examining the rate and variations in the hourly respiratory rate. If a symptomatic female is getting fatigued or hypoxia, a choice should be taken on an individual basis whether or not to use selective assisted delivery to shorten second stage of labour. Healthy and young women can correct a reduction in respiratory performance and thus

are enable in continuing optimum oxygen levels before decompensating. As a result, if the oxygen saturation is normal, an increase in the respiration rate may signal decline of the respiratory function, this now has to be treated with oxygen therapy.

Chest X-rays and chest CT scans should be conducted as if the patient is not pregnant. Imaging, particularly CT scan of chest, is critical in COVID-19 patients for assessment evaluation and should be done as soon as possible rather than postponed owing to concerns for the unborn. The health of the mother takes priority in these situations. Abdominal shielding can be utilized to safeguard the foetus in accordance with traditional customs. To rule out other reasons, further tests such as an ECG, CTPA (if needed), or echocardiography should be considered. Conduct a comprehensive sepsis test instead of assuming COVID-19 is the cause of all pyrexia. Consider bacterial infection and commence antibiotic treatment if the wbc level is high. When administering intravenous fluids, use caution. Before continuing with fluid resuscitation, make sure the patient is stable. Depending on the weeks of gestation of the baby and the mother's health, the timing and appropriateness of foetal heart rate monitoring must be assessed on a case by case basis. If an emergent delivery is required due to a foetal emergency, the birth should proceed as planned as long as the mother's status is stable [8].

6.2 Postnatal Management

It's unknown if COVID-19-positive babies are more likely to develop major issues. Contact with infected respiratory secretions after delivery increases the chance of transmission. Facilities should consider separating the mother who has proved COVID-19 or is a PUI from her infant for a short period of time (e.g. in separate rooms) until the mother's transmission-based acts cease. As a result, the best way to manage breastfeeding is uncertain, and the infant may need to be isolated from the mother for a short time. Finally, because healthcare providers are at a higher risk of infection during birth, further measures must be followed. In general, pregnant COVID-19 patients should get the same treatment as non-pregnant COVID-19 patients. Because of potential safety concerns, the COVID-19 Treatment Guidelines Panel advises against delaying COVID-19 and SARS-CoV-2 vaccine treatment from pregnant or nursing women [9].

Due to theoretical concern about the impact of using such therapeutic medications during maternity, pregnant women should not be denied potentially beneficial COVID-19 treatments. The medicine's safety for pregnant or nursing females, as well as the foetus, should be investigated by the patient and the professional team as well as the severity of maternal disease should be evaluated during this collaborative decision-making process [10-15].

7. CONCLUSION

AntiSars-CoV-2 monoclonal antibodies should be examined in pregnant women infected with Covid-19, especially if they have other risk factors for severe illness. Mothers who contract Covid-19 should be well taken care of to avoid any serious complications to the mother or the child. While no proof show that monoclonal antibodies are safe to use during pregnancy, other immunoglobulin G preparation have now been used securely throughout this time. Pregnant women should not avoid these things.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Morens DM, Folkers GK, Fauci AS. What is a pandemic?; 2009.

2. ICMR N. Guidance for Management of Pregnant Women in COVID-19 Pandemic.[Internet] Indian Council of Medical Research. National Institute for Research in Reproductive Health. [Cited 2020 Apr 05]. Available:https://www.icmr.gov.in/pdf/covid/techdoc/Guidance_for_Management_of_Pregnant_Women_in_COVID19_Pandemic_12042020.
3. Kannan SP, Ali PS, Sheeza A, Hemalatha K. COVID-19 (Novel Coronavirus 2019)-recent trends. *Eur Rev Med Pharmacol Sci.* 2020 Feb 1;24(4):2006-11.
4. Ciapponi A, Bardach A, Comandé D, Berrueta M, Argento FJ, Cairolí FR, Zamora N, Santa María V, Xiong X, Zaráa S, Mazzone A. COVID-19 and pregnancy: An umbrella review of clinical presentation, vertical transmission, and maternal and perinatal outcomes. *Med Rxiv.* 2021 Jan 1.
5. Wastnedge EA, Reynolds RM, Van Boeckel SR, Stock SJ, Denison FC, Maybin JA, Critchley HO. Pregnancy and COVID-19. *Physiological reviews.* 2021 Jan 1;101(1):303-18.
6. Wenling Y, Junchao Q, Xiao Z, Ouyang S. Pregnancy and COVID-19: management and challenges. *Revista do Instituto de Medicina Tropical de São Paulo.* 2020 Aug 31;62.
7. Fares Qeadan, Nana Mensah, Benjamin Tingey, Joseph Stanford. "The Risk of Clinical Complications and Death among Pregnant Women.
8. American College of Obstetricians and Gynecologists. Novel Coronavirus 2019.
9. Revised Guidelines on Clinical Management of COVID-19. [Online] March 31; 2020. Accessed on April 5, 2020.
10. Jessani S, Saleem S, Hoffman MK, Goudar SS, Derman RJ, Moore JL, et al. Association of haemoglobin levels in the first trimester and at 26-30 weeks with fetal and neonatal outcomes: a secondary analysis of the Global Network for Women's and Children's Health's ASPIRIN Trial. *Bjog-an International Journal Of Obstetrics And Gynaecology.*
11. Bidkar V, Selvaraj K, Mishra M, Shete V, Sajjanar A. A comparison of swab types on sample adequacy, suspects comfort and provider preference in COVID-19. *American Journal of Otolaryngology.* 2021 Apr;42(2).
12. Acharya S, Shukla S, Acharya N. Gospels of a pandemic-A metaphysical commentary on the current COVID-19 crisis. Available:<https://doi.org/10.7860/JCDR/2020/44627.13774>.
13. Arora D, Sharma M, Acharya S, Shukla S, Acharya N. India in "Flattening the Curve" of COVID-19 Pandemic-Triumphs and Challenges Thereof. *Journal of Evolution of Medical and Dental Sciences.* 2020 Oct 26;9(43):3252-6. Available:<https://doi.org/10.14260/jemds/2020/713>.
14. Gawai JP, Singh S, Taksande VD, Sebastian T, Kasturkar P, Ankar RS. Critical Review on Impact of COVID 19 and Mental Health. Available:<https://doi.org/10.14260/jemds/2020/470>.
15. Gupta R, Mishra G, Dhande RP. An Interesting Case of Achalasia Cardia with Co-Existing Coronavirus 19 Infection. *Journal of Pharmaceutical Research International.* 2021:194-8. Available:<https://doi.org/10.14260/jemds/2020/825>.

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