A Review on Pregnancy during COVID-19 Pandemic

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Author’s contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

The World is going through a tough situation and that is a pandemic caused by the Novel Corona virus which originated in the Wuhan Province of China in December 2019. During this tough and critical situation, one of the major concerns is dealing with pregnant women across the globe. As we have been noticing in the past one year of observation in our country, the number of active pregnancies has been increasing during the period of lockdown in the country. Pregnant women getting affected by COVID-19 can be a risk to them and their babies. They may show symptoms or can be asymptomatic, which makes it difficult to diagnose in the very first place. In the whole scenario, patients undergoing this situation expect distinguished attention from the medical fraternity. So, to deal with this pandemic, it is important to meet up to the increasing demand of emergency medical services so that the situation remains under control and helps in providing the necessary medical treatment required to pregnant women of the society.

Keywords: Covid 19; SARS-COV2; pregnancy; tomography.
1. INTRODUCTION

No one can deny the fact that the world has changed dramatically in just a matter of few months due to spread of Novel Corona Virus, COVID–19. This COVID-19 is a member of SARS family CoV- 2 Virus and was identified in Wuhan, China in December 2019 and has rapidly spread across the world. India being the second most populous country after China, the presence of this virus in a patient was first detected on 30 January 2020 in Kerala. Being an agronomical (agricultural - based economy) country, the majority of population stays in rural areas and access to health care facilities is difficult. To restrict the spread of the virus in India, a series of lockdown were instituted and as on 8 July 2020 there are 7,46,506 cases and India is ranked 3rd in the world as far as the number of cases are concerned. As the number suggests a diffuse spread of this disease in India, Maharashtra and Tamil Nadu are amongst the worst affected states with both of them nearly contributing around 50% of total cases.

During the coronavirus infection, there are several unknowns for pregnant women. The effects of the SARS family CoV - 2 Virus are directly observed on implantation, fetal growth and development, labor, and neonatal health are still uncertain, and a concerted global effort is needed to find out. Asymptomatic diseases pose a new set of challenges in terms of service delivery, prevention, and management. Symptomatic pregnant women are to be provided with respiratory support. Pregnant women who are asymptomatic, are at low risk of severity. On day 0 of life, no neonatal infections are claimed till date. Pregnant women already deal with stress and different kinds of emotional, mental and physical changes that it becomes difficult to deal on both sides of the end. This eventually puts the fetus under problems which increases the risk of fetal death or complications during delivery.

2. SPREADING OF CORONA VIRUS

Corona virus is spreading at a very high rate. It affects different people at different time and with different rates. People come with many kinds of symptoms such as fever, cough, dizziness, loss of taste, breathlessness, metallic taste in the mouth, headache, sore throat etc.

To prevent this deadly virus people should be asked to wear mask, sanitize their hands regularly and keep a safe distance from. Other people too so that the people next to them should also stay away from any kind of risk. It’s important to even educate people about the ways in which they should help themselves and others to prevent spreading of this disease. The mask should be worn in a certain way. It should cover the persons nose and mouth. if there are mild symptoms then the person should quarantine themselves for 14 days. The symptoms usually start appearing after 5-6 days. There are many companies working to find a way to stop spreading of this deadly virus. There are many different kinds of medicines to treat the symptoms in every patient individually. There are certain tests done before they conform that it’s the virus. There are vaccines which are given to people, but their efficacy rate is different when taken at different interval of times. They form clots in the blood which leads to more deaths per day. Pregnant women need more ventilation support than normal women. Their immune system is very weak and mostly they go through cesarian section or there is pre-term delivery of the child is most likely. The child has to admitted in the pediatric department and has to be monitored over the period of time. But studies mostly show that transmission from mother to fetus is almost 0%. Studies also show that the spread of virus is more in black women.

There are many comorbid conditions which are associated with the virus. They are diabetes, hypertension, myocardial infarction, previous history of hospitalization. The factors add more risk factors to the disease while its spreading. If you are previously affected by the diseases then the symptoms would be more severe the second time.

If you have COVID-19 while pregnant, the care will focus on symptom relief, which could include plenty of fluids and rest, as well as medicine to reduce fever, alleviate pain, or reduce coughing. If you’re critically ill, you might need to go to the hospital.

The improvement in healthcare facilities of our country has led to an additional support in treating these patients suffering from COVID-19. Increased qualitative and quantitative effectiveness of emergency medical services is urgently needed to meet the rising demand, as well as a focus on the growth and advancement of emergency medical services to help deal with
any crisis that might arise in the immediate future [1].

Pregnant women are one of the top priorities for a medical staff. They go through three trimesters which are divided in 3 months’ time each. With every month coming close to the time of delivery the stress on the body increases the most common early manifestation of infections are fever, cough, fatigue and myalgia. The exposure history, clinical manifestations, laboratory test results, chest computed tomography findings, and a positive RT-PCR result are all used to make the diagnosis [2].

If you are healthy and if you have reached the end of delivery then there will be a normal delivery. But if you have symptoms then you will be checked thoroughly. The mother is checked 48 hours before the delivery. Before going inside the delivery room and after the delivery. The child is sent to the neonate ward to be taken care of. The mother is kept under observation and given few medications to lower her symptoms. There will be only few visitors or only two people in the room. It is proposed that postpartum treatment be a continuous phase after childbirth. Discuss virtual visit options for checking in after delivery with your health care provider, as well as your need for an office visit. You may be more concerned about your health and the health of your family during this stressful period. Keep an eye on your mental health. Seek help from family and friends when taking steps to avoid being infected with the COVID-19 virus. You may have postpartum depression if you have extreme mood swings, loss of appetite, overwhelming exhaustion, and a lack of joy in life soon after giving birth. If you think you may be depressed, see your doctor, particularly if your symptoms don't go away on their own, you're having trouble caring for your baby or doing everyday activities, or you're thinking about hurting yourself or your baby.

With COVID-19 being one of the major concerns now the attention and kind of treatment given to a patient is of utmost importance [3]. Any kind of complication in mother can eventually lead to the fetus being in stress [4]. This unusual circumstance may have posed a threat to the mental health of the mother [5].

There are few guidelines to be followed while dealing with COVID-19 in pregnant women. Firstly, they have to be tested and depending on that a result is to be reached if the patient should be admitted or home quarantined [6] If they have symptoms, then urgent actions are to be taken. And patients are directly admitted, and further procedures are followed. Secondly, in symptomatic patients and risk factors for progression to serious disease who are not hospitalized, the patient must bring a pulse oximeter as part of the home care kit, which includes patient education and adequate follow up [7] They have to constantly keep on checking their pulse. Pregnant women with serious trouble are strictly to be admitted to Intensive Care Units followed by rigorous monitoring by health care personals [8]. Thirdly, a conditional recommendation for awake prone positioning in hospitalized pregnant patients with extreme COVID-19 who need supplemental oxygen and non-invasive ventilation [9] Fourthly, anticoagulant dosing for thromboprophylaxis rather than intermediate or preventive dosing [10]. Lastly, pregnant women with serious trouble are strictly to be admitted to Intensive Care Units followed by rigorous monitoring by health care personals [11].

Length of hospital stay for symptomatic patients is 3 days in general and for asymptomatic its 2 days [12] If symptomatic every symptom is attended with care. The patient with symptoms may have to go through cesarean delivery, preterm birth less than 37 weeks or less than 34 weeks [13] There are chances of postpartum hemorrhage, pre-eclampsia in which the blood pressure of the patient is very high [14] Many a times the patient requires respiratory support. Chances of these complications in an asymptomatic corona patient is very less [15] According to research, the COVID-19 virus is unlikely to be transmitted to babies via breast milk. The bigger question is whether a virus-infected mother will pass the virus to her baby via respiratory droplets while breastfeeding. Take precautions to prevent the virus from spreading to your baby if you have COVID-19 or are a symptomatic individual under investigation for the virus. This involves washing your hands before touching your baby and, if possible, breastfeeding while wearing a face mask. If you're pumping breast milk, wash your hands before handling any pump or bottle components, and clean your pump according to the manufacturer's instructions. If at all necessary, make someone who is safe give the expressed breast milk to the infant.

One of the most important factors, during pregnancy, to be taken care of is Stress. Stress
is basically feeling emotional or physical tension [16]. The mother goes through many physiological, psychological, metabolic and emotional changes. Because of novel corona virus the mother could not leave the house as the whole country experienced lockdown which lead to less interaction of mother with other people in the society [17]. This becomes more stressful for single mothers. They have to take care of the household and herself so that eventually the fetus is safe [18]. Since there was no way to commute from one place to another so mothers living in rural area have to manage most of the problems all by themselves. Asha workers were also asked to stay in house, so it became difficult for the pregnant women to manage. Stress can lead to many complications. Such as miscarriage, preeclampsia, preterm delivery [19].

There are very few chances that the fetus could get affected by novel corona virus. Symptomatic mothers are at more risk than the rest. The immunity of the mother is compromised. The mother gains weight thus requiring more energy than normal. Oxygen would not reach the mother leading to hypoxia. Health care facilities are compromised so the mother could not get proper ultrasound done. The drugs given at the time are iron and folic acid whose proper education is very important [20]. The diet during the time is also important factor that the ASHA workers should educate the mother about. Since all the health care facilities were compromised the right and proper approach could not be made. On the other hand, in places like Mumbai where COVID-19 spread was more the number of health workers were increased leading to proper care of the mother. There is currently no study on COVID-19 vaccine protection in pregnant or breastfeeding women. You may opt to get a COVID-19 vaccine if you are pregnant or breastfeeding and are part of a community that has been advised to do so. Discuss the costs and benefits with your health care provider. Keep in mind that the mRNA COVID-19 vaccines do not induce genetic changes or modify the DNA.

Avoid direct contact with someone who is sick or has symptoms, and keep about 6 feet between yourself and others outside your household to reduce your risk of infection. In public and at work, wear a cloth face mask. As far as possible, avoid interacting with others. Instead, try photographing, videotaping, or videoconferencing with friends and family. Hands should be washed often with soap and water for at least 20 seconds, or an alcohol-based hand sanitizer containing at least 60% alcohol should be used. Above all, remember to look after yourself and your kids. To address any questions, contact your health care provider. If you’re having trouble dealing with stress or anxiety, speak with your doctor or a mental health professional about coping techniques.

Viral infections acquired congenitally or perinatally may be harmful to the fetus, although the number of cases recorded in the first trimester is very low. One of the major concerns during the second trimester is miscarriage. The patient usually come with complain of per vaginal bleeding. Asymptomatic patients are easy to treat. They usually have less complications than patients who show symptoms. In symptomatic patients they may experience abrupt rupture of membrane eventually leading to expulsion of fetus. Pregnant women in their third trimester have a high level of social support, a medium risk perception of COVID-19, and are prone to anxiety. Stress may lead to hemorrhage, miscarriage or may be in death of the fetus. In the third trimester its necessary for delivery if maternal oxyenation is less. Third trimester placenta are more likely to show at least one feature of maternal vascular perfusion, particularly abnormal or injured maternal vessels. Decision on delivery mode should be different for every individual. It can either be vaginal delivery or cesarean depending on the condition of the mother and the fetus. It's unclear how vertical transmission from pregnant women to the fetus happens. Virus is not present in the breast milk so usually the medical staff recommend it to its patients [21-22]. Postnatal psychological distress is more linked to prenatal experience and other individual factors. Serological tests are critically important as during pregnancy a woman becomes more susceptible to respiratory and viral diseases including Novel Corona virus. Hence, pregnant women in any trimester going through any symptoms of novel corona virus are to be given utmost care and best treatment possible.

3. DISCUSSION

The new coronavirus outbreak, caused by the extreme acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is spreading at a rapid pace across the world, with a simple replication number of 2-2.5 suggesting that 2-3 people will be infected from an index patient [23-24].

There were studies which aimed to compare symptomatic and asymptomatic patients during
pregnancy. They were divided into two groups. All testings were done through nasopharyngeal swab using polymerase chain reaction. In the very initial stage, the test was done only for women with travelling history or who showed symptoms of respiratory disorder. Later they had to perform tests on women who did not show any symptoms or had a travel history. As a result, almost 75% people with symptoms were tested positive. Women with symptoms after being tested positive had preterm delivery and a severe need for respiratory support. If you are pregnant or breastfeeding and live in a community where it has been recommended, you may want to get a COVID-19 vaccine. For your health care provider, go over the costs and benefits. It's important to remember that the mRNA COVID-19 vaccines don't cause genetic changes or alter DNA.

There were even more studies which showed it had adverse effect on the mother and eventually on the fetus. The mother already goes through extreme level of stress. There are many changes taking in here body which makes her go through mental physical and emotional stress. The idea of even a pregnant woman being the carrier of COVID-19 is threatening to the family and the mother. Which could lead to complications in the child and the mother. Pre-term delivery is one of the major concerns. Pregnant women need more ventilation assistance than non-pregnant women. Their immune systems are very poor, and most of the time they have to have a cesarian section or the child is born prematurely. The child must be admitted to a pediatrician's office and watched for a period of time. However, most studies indicate that transmission from mother to fetus is nearly zero [25-28]. Pregnant women who belong to the Spanish speaking countries, mostly in the South American continent, also known as Hispanic or Latino, are found to be at a higher risk of severe condition if gets affected by Coronavirus. This similar situation is also observed in Black women.

To minimize the risk of infection, avoid close contact with someone who is sick or has symptoms, and keep about 6 feet between yourself and those outside your home. Wear a cloth face mask in public and at work. Avoid communicating with others as much as possible. Instead, photographing, videotaping, or videoconferencing with friends and family could be a better option. Hands should be washed often with soap and water for at least 20 seconds, or with an alcohol-based hand sanitizer that contains at least 60% alcohol. Above all, take care of yourself and your children. Contact your health-care provider if you have any questions. Chat with your doctor or a mental health provider about coping mechanisms if you're having difficulty dealing with stress or anxiety.

The statistical data of pregnant women affected with COVID-19 shows that when they were hospitalized, there were 40.9% women who delivered babies, 79.1% of them had to undergo oxygen therapy and 16.7% mothers required mechanical ventilation. Thus, the mortality rate stands at 1250 in 100000 pregnancies during the COVID-19 globally (25,26). Studies represent that pregnant women are more vulnerable to SARS CoV-2 Virus, and other respiratory disorders as well. This accounts for a very large group of individuals at risk of COVID-19 in the society.

4. CONCLUSION

During this pandemic, it is of utmost importance to be safe, stay indoors and follow healthy sanitary practices. There are many studies all around the globe which suggests different opinions about how does this affect the women. In the initial period or the first trimester the virus usually affect very less. Mother is more likely to have this virus. Mostly the fetus does not have the virus even after that, the child is kept under strict observation in the neonate ward. They do not have the virus through mother. This virus mostly affects the mother who have comorbid conditions. Their immune system is more weak. Post-delivery complications are many. The mother usually goes through preterm delivery or c-section. They are tested in every way possible to keep the mother and the child safe. The mother is asked to use hand sanitizer before touching the baby even for bread feeding. Using the mask is of utmost importance. The mask should cover the nose and the mouth. sneezing or coughing may also spread the virus easily. Mother mostly experiences stress. Which could affect the child even after the birth. Post traumatic complications are rather severe and mainly psychological. But, The mother has to already go through a lot during this time. And novel corona virus only increases more stress on the mother. By properly dealing with the situation the COVID-19 can be prevented on every level of the trimester. The fetus has very few chances of transmission of the virus, but the mother has to go through a lot of changes in her body to deal
with this situation. Hence more importance should be given, and utmost care should be taken.

CONSENT

It’s not applicable.

ETHICAL APPROVAL

It’s not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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