



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

EXPERIENCE OF COVID 19 IN PREGNANCY IN FERTILITY CENTER: A CASE SERIES

KEY WORDS: COVID-19, pregnancy, neonates, adverse, effect

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ABSTRACT

Objective: To evaluate antenatal course and obstetrics outcomes of pregnancies affected by coronavirus disease (COVID 19). **Methods:** A retrospective study was performed in 15 pregnant women infected by COVID 19. Their symptoms during pregnancy, obstetric outcomes and perinatal outcomes were reviewed. **Results:** The most common symptoms of pregnant women with COVID 19 infection were fever, cold and cough. All patients with mild and moderate symptoms were managed at home. 14 patients were delivered in third trimester. The incidence of preterm birth due to preterm premature rupture of membranes and preterm labor pains was 20%. One patient had severe preeclampsia with severe oligohydramnios at 20 weeks, so termination of pregnancy was done. No neonatal SARS-CoV-2 infection was detected. There were no complications detected in neonates. **Conclusion:** In this case series study, it was concluded that COVID-19 had no major short-term or long-term adverse effect on pregnant women and neonates. There was no vertical transmission of virus in these cases. There was slight increase of preterm premature rupture of membrane and preterm delivery rate but as same as in other viral infections. This study was conducted in fertility center and is one of the few studies done in fertility center in India.

INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus which is a major health threat worldwide. COVID 19 was first identified in Wuhan, China, in December 2019, and later on it has spread globally at very fast rate with rapid increases in cases and mortality (1). Pregnant females are at increased risk of getting viral infections which is same for COVID 19 due to alteration in immune system. Mostly symptoms of COVID 19 in pregnancy are milder with good recovery rate. Severity of symptoms may increase in third trimester and may need ICU care. Pregnant females or recently pregnant women with advanced maternal age, overweight, and with pre-existing medical conditions such as hypertension, diabetes, heart diseases, asthma etc. are at increased risk of getting COVID 19 and severity will be more (2). In this case series, we had evaluated the antenatal course and obstetrics outcomes of pregnancies affected by coronavirus disease (COVID 19).

METHODS:

A retrospective study in fertility center was performed in 15 women who were infected by COVID 19 during their confirmed pregnancy interval. The diagnosis was confirmed in all females with positive COVID 19 RT PCR test that was collected from nasopharyngeal and oropharyngeal area. We reviewed the following data in all pregnancies –

Antenatal course – weeks of gestation, clinical symptoms and signs, history of any comorbidities, duration of symptoms, severity of disease, any hospitalization required

Obstetric outcomes - spontaneous abortion, intrauterine fetal demise (IFD), intrauterine growth retardation (IUGR), preterm delivery, preterm premature rupture of membranes, any other serious illness, any placental changes.

Perinatal outcomes – any abnormalities in neonate, neonatal

asphyxia, neonatal death.

RESULTS:

This study was conducted in fertility center and we routinely don't follow antenatal patients after 3 months except for some patients and our surrogates.

In our case series, 15 women were evaluated who were infected by COVID 19 during their pregnancy. Out of 15 women, ten were in the first-trimester, one in the second-trimester, and four in the third-trimester when detected with COVID 19. The maternal age was ranging from 28 to 40 years.

Two patients were asymptomatic and were detected COVID 19 positive in third trimester. Out of 15 patients, 11 patients had mild symptoms and were managed at home. The most common symptoms of all the pregnant women with COVID 19 infection were fever, cold and cough. The two patients had moderate symptoms with breathlessness with SP02 90 to 91% without oxygen and temperature > 102F but still managed at home with oxygen concentrator with 5 liters capacity. Out of these two patients, one of the patients had history of bronchial asthma. Most of the patients were relieved of their symptoms in 10 to 15 days' time.

14 patients were delivered in the third trimester. Out of these 14 patients, 3 patients had preterm premature rupture of membranes (PPROM) with preterm labour pains (PTLPs) and delivered between 28 to 31 weeks and one patient was delivered at 35 weeks of gestation. Neonatal course of all the babies was uneventful. One patient had severe preeclampsia with severe oligohydramnios at 20 weeks, so termination of pregnancy was done (Table 1). In two patients in whom preterm delivery happened, there were increased calcification spots in placenta.

Table 1. Details of Pregnant females with COVID 19

Case	Age (yr)	Gestational age (weeks)	Comorbidities	Symptoms	Obstetric outcome	Neonatal outcome
1.	30	4	No	Fatigue, cold	PPROM at 27 wks, PTLPs & delivered	UE*
2.	29	6	No	Fever, cold, breathlessness	No complications	UE*
3.	28	6	No	Fever, sore throat	No complications	UE*
4.	31	6	No	Fever, sore throat	No complications	UE*
5.	27	6	No	Fever, cold	No complications	UE*
6.	25	8	No	Fever, cold	PTLPs at 32 weeks & delivered	UE*
7.	40	8	Bronchial Asthma	Fever, cold, breathlessness	No complications	UE*
8.	24	10	No	Cold	PTLPs at 30 weeks & delivered	UE*

9.	35	12	No	Cold	No complications	UE*
10.	36	12	No	Fever, cold	Severe Pre-eclampsia & oligohydramnios at 20 weeks & terminated	UE*
11.	27	18	No	Fever, cold	No complications	UE*
12.	25	32	No	Asymptomatic	PPROM at 35 wks, PTLPs & delivered	UE*
13.	27	33	No	Asymptomatic	No complications	UE*
14.	29	34	No	Fever, cold	No complications	UE*
15.	30	34	No	Cold, eye swelling	No complications	UE*

*Uneventful

birth weight (5–43%) or preterm delivery (2–69%) (10).

Discussion:

In our study, we evaluated the antenatal course, obstetrics outcomes and neonatal outcomes of pregnancies affected by coronavirus disease (COVID 19).

Viral infections in general during pregnancy are considered benign diseases except for few viral infections like herpes, rubella, cytomegalovirus infections etc. As pregnancy is a gradual process where paternal/fetal antigens are released in a slowly and increasing manner as the blastocyst grows into an embryo and then into a fetus. The exposure of small amounts of foreign antigens during this process may actually induce tolerance rather than rejection. So, pregnancy does not require systemic immune suppression (3). Pregnancy also represents an immunologically unique population because their immune system is influenced by signals originating from the placenta and the presence of the fetus and placenta alters maternal immunity and physiology to sustain and protect the pregnancy. This shows that the maternal immune system is well prepared to control infections and ensure the survival of the fetus (4,5,6). In these infections, the immune effects of interactions between microorganisms, maternal-fetal interface and the placenta can lead to significant obstetrics outcomes, such as preterm delivery which is true for bacterial infections also (3).

Similarly, pregnant women and their fetuses are at high risk of infection with the novel H1N1 influenza A virus and has increased morbidity, mortality, and pregnancy-related complications (including spontaneous miscarriage and preterm birth) faced by pregnant women during such an influenza pandemic (7).

Mei Y et al compared the clinical course and outcomes of COVID-19, SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) pregnancy and discussed about several drugs for the treatment of COVID-19 in pregnancy. As per their study, clinical characteristics were similar among pregnancies with COVID-19, SARS, and MERS and COVID-19 during pregnancy is milder than SARS and MERS during pregnancy. However, pregnant women with COVID-19 should be closely monitored, even after their etiological tests turn negative. Maternal separation is necessary even if there was no vertical transmission. Interferon-alpha, lopinavir, ritonavir, and chloroquine could be good candidates for the treatment of COVID-19 during pregnancy, but more work is needed to explore their effectiveness and safety. In addition, remdesivir and arbidol, which are potential drug treatments for COVID-19, require further research on their safety during pregnancy (8). Akhtar H et al reviewed the data from December 01, 2019, to May 22, 2020 and concluded that COVID-19 infection in pregnancy leads to increased risk in pregnancy complications such as preterm birth, PPRM, may possibly lead to maternal death in rare cases and there is no evidence to support vertical transmission of SARS-CoV-2 infection to the unborn child (9). Ciapponi A et al supported that pregnant woman with COVID-19 will be at increased risk of adverse pregnancy and birth outcomes and low risk of congenital transmission. The most frequent maternal outcomes were C-section (23–96%) and preterm delivery (14–64%). Most of their babies were asymptomatic (16–93%) or presented fever (0–50%), low

In this case series study, it was concluded that COVID-19 had no major short-term or long-term adverse effect on pregnant women and neonates. There was no vertical transmission of virus in these cases. There was slight increase of preterm premature rupture of membrane and preterm delivery rate but as same as in other viral infections. This study was conducted in fertility center and is one of the few studies done in fertility center in India.

Author contributions: Dr Kaberi Banerjee conceptualized and Dr Bhavana Singla designed, collected & analyzed the data and wrote the paper.

There is no ethical problem or conflict of interest.

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