Fetomaternal Outcome in Pregnancy with Covid- 19 Infection in a Tertiary Care Hospital in Eastern India

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ABSTRACT:
Objective:
To determine maternal and fetal outcome in pregnant women affected with COVID-19 and to provide additional emerging information for maternity and neonatal services planning their response to COVID-19.
Study Design: Prospective observational study in a Tertiary care hospital. A total of 62 women were included in the study that were tested positive for COVID-19. Detailed clinical features, maternal complications and neonatal outcomes were analyzed.
Results: Out of 62 COVID-19 positive women, 28 women delivered by caesarean section, 22 women delivered vaginally, while12 women were continuing pregnancy well till date. Among 62 women, 40 women were asymptomatic, 6 women had history of fever & 16 women had SARI. 16 patients had infiltration in lungs on X-Ray, 14 patients had increased CRP &lymphopenia was observed in 12 patients. All newborns tested negative at birth. In this study none of the women required ventilation and none died.
Conclusion: The Fetomaternal outcome is good &no evidence of vertical transmission was seen as all the newborns tested negative for the infection.
Key Words: Pregnancy, COVID-19, Fetomaternal outcome, Vertical transmission

INTRODUCTION:

Novel corona virus (SARS-COV2) is a new strain of corona virus causing COVID-19, first identified in Wuhan city, China. Its characteristic especially those of person to person transmission were documented in December 2019.[1] this is an unprecedented global war, and the mankind is facing the same enemy, the novel corona virus. And the first battle field is the hospital where our soldiers are the medical workers. It was declared as a pandemic by the World Health Organization on 11th March 2020. India declared the first diagnosed case on 30th January2020. The first few cases were related to travel from the Middle East and Italy.

Symptoms of the infection had included fever, malaise, dry cough, shortness of breath and respiratory distress.[2] Studies from Europe, China and USA on COVID- 19 have consistently shown that older age and co-morbidity are major risk factors for adverse outcomes and mortality. Although most reported COVID-19 cases in china were mild (81%), and approximately 80% of death had occurred among adults population older than 60 years of age.[3-5]

Based on experience with MERS-COV and SARS-COV, severe respiratory failure might occur in pregnant women.[6] few studies are available about COVID-19 in pregnancy and their results show no evidence that pregnant women are more susceptible to infection with corona virus. Team based management is recommended for COVID-19 during pregnancy in atertiary health care unit to provide care to stable and unstable patients. RCOG recommends that delivery in COVID-19 patients should be determined primarily by obstetric indications and recommends against routine separation of affected mothers and their babies.[7]

AIMS & OBJECTIVE:

The objective of this study is to determine maternal and fetal outcome in pregnant women affected with COVID- 19 and to provide additional emerging information for maternity & neonatal services planning their response to COVID- 19.

METHODS:

It was a prospective observational study, conducted in the department of obstetrics &gynecology, NRS Medical College, Kolkata, West Bengal. It is a tertiary care hospital with around 14000 deliveries per year. The study was conducted over laboratory confirmed COVID- 19 positive pregnant women admitted in the hospital from 1st Sep' 2021 to 31st Dec' 2021, after taking Institutional Ethical Approval. We got total 62 positive patients. An informed consent was obtained from all enrolled patients before conducting the study. All patients admitted during the study period underwent testing for COVID-19. The oropharyngeal swabs were collected & tested for SARS- COV2 by use of real time reverse transcriptase polymerase chain reaction. Their age, parity, gestation & co-morbidity if any was noted in respective preforms with detail history. All symptoms of COVID-19 were recorded. Complete blood count, C- reactive protein, blood sugar, liver function test & renal function test done for all patients. Chest X-Ray with abdominal shield done in indicated cases. The course of the pregnancy, mode of delivery, neonatal outcome, maternal complications all were

recorded and analyzed statistically. The neonates were also tested for COVID-19 infection, they were separated from mother after delivery till her test came negative. Data was analyzed by software SPSS version 20

RESULTS:

Table-1. Characteristics of the study participants (N=62)

Age	No. of Patients	Percentage
<20 years	01	2%
20-30 years	40	65%
>30 years	21	33%
Gravida		
1	32	51.61%
2	14	22.58%
3	9	14.51%
4	7	11.29%
Gestational Age		
32-36 weeks	18	29.03%
36-40 weeks	36	58.06%
>40 weeks	8	12.90%

Table-2 Signs & Symptoms at the time of admission

Complaints	NO. of Patients	Percentage
Asymptomatic	40	64.51%
Fever	6	09.06%
SARI	16	24.80%

Table-3. Laboratory investigations of COVID-19 positive pregnant women

Report	NO. of Patients	Percentage
Low Hb%	20	32.25%
Chest X-Ray shows infiltrations	16	25.80%
Increased CRP	14	22.58%
Lymphocytopenia	12	19.35%

Table-4.Obstetric outcome

Outcome	NO. of Patients	Percentage
LSCS	28	45.16%
Vaginal Delivery	22	35.48%
Ongoing Pregnancy	12	19.35%

Table-5. Neonatal Outcome

Outcome	NO. of Patients	Percentage
Birth Weight		
<2Kg	5	8.06%
2-2.5Kg	35	56.45%
2.5-3Kg	22	35.48%
Apgar Score		
>8	56	90.32%
<8	6	09.67%

Total 62 laboratory confirmed COVID-19 positive antenatal women were enrolled in our study.

 Table-1 shows age, gravity and gestational age of study participants. Maternal age of 40(65%) mothers ranged from 20-30years. Among the study participants 51.61% were prim gravida. 58.06% had gestational age between 36-40 weeks, 29.03% had gestational age between 32-36weeks & 12.90% had gestational age more than 40 weeks.

Table -2 shows signs & symptoms at the time of admission. Among 62 women, 64.51% were asymptomatic, 09.06% women had history of fever, and 24.80% patients had severe acute respiratory infection (SARI).

Table-3 shows investigation reports. Low hemoglobin percentage was observed in 32.25% cases. 25.80% of patients had infiltration in lungs on X-Ray. 22.58% of patients had elevated CRP &lymphocytopenia was observed in 19.35% cases.

Table-4 shows obstetric outcomes of study participants. 28(45.16%) out of 62 women underwent caesarean section. 22(35.48%) women delivered vaginally and 12(19.35%) women were continuing pregnancy well till date. Caesarean section done under spinal anesthesia& no complications observed during surgery.

Table -5 shows neonatal outcomes. Birth weight of 35(56.45%) babies were between 2-2.5Kg & birth weight of 22(35.48%) babies were between 2.5-3 Kg. And birth weight of only 5(8.06%) babies were below 2 Kg. Apgar score for 56(90.32%) newborns was >8 at 1 minute and 5 minutes.
All newborns were evaluated; neonatal oropharyngeal swabs for RT-PCR were reported negative.

DISCUSSION:
 COVID-19 caused by SARS-COV2 virus, is a potentially fatal disease. It was declared as a pandemic by World Health Organization on 11th March 2020. Pregnant women are at increased risk because the immune system of pregnant women is suppressed. But several authors suggested that pregnancy did not aggravate the COVID-19 pneumonia.[8]

In our present study, majority(65%) of the patients were in the age group of20-30years. 51.61% were prim gravida and the gestational age of maximum patients i.e. 58.06% was between 36-40weeks. These findings are similar with the study conducted by Chen et al[9], in which the median age of patients was 31 years; & 52% wereprimigravida&48% were multigravida. Another study conducted by CaoDet al[10] in Wuhan reported the mean age of patient's between29-35 years, and the gestational age of maximum patients ranged from 33 to 41 weeks.

In our study most of the patients i,e 64.5% were asymptomatic, 09.06% women had history of fever and 24.80% women had SARI but none of the patient required ventilator and none died. These results are similar to the results of a recent study conducted by Chen et al[9], in which none of the patients required ventilator and no patient died.
Our present study revealed 22.58% patients with elevated CRP and 19.35% patients with lymphocytopenia. These findings are similar with the study conducted by MunirSIet al[11], in which they reported that 21% patients with lymphocytopenia and 21% had raised CRP.

Zhang L. et al[12] compared the pregnancy outcomes of 16 women with COVID – 19 and 45 non-infected women, all delivering by caesarean section. Researchers did not observe significant differences in the intraoperative blood loss. In our present study, 45.16% patient underwent caesarean section and 35.48% patients delivered vaginally.

In our current study Apgar score for 90.32% newborns was>8 at 1 minute and 5 minute. These findings are supported by the study conducted by Zhu et al[13] in which Apgar score for all newborns were 8-9 at 1 minute and 9-10 at 5 minutes. In our study all neonatal throat swabs were negative for COVID- 19. These findings is supported by the study conducted by Zhang L et al[12], in which they reported that COVID-19 infection has not been found in neonates delivered from pregnant women with COVID-19 infection. There were few limitations of our study, first was the small sample size and second, the duration of the study was short.

CONCLUSION:
 The Fetomaternal outcome is good and no evidence of vertical transmission was seen as all the newborns tested negative for the infection in the current study.

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