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Evaluation of maternal complications in covid pregnant women managed at Muzaffarnagar medical college-level 3 corona centre

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Abstract
Background
Objective: To see maternal complications in COVID pregnant patients treated from the month of June to December 2020 in Dept of Obs & Gynae.
Study Design: This is a retrospective study done in Covid pregnant patients treated in Dept of Obstetrics and Gynecology from June 2020 to December 2020, for assessment of maternal complications due to COVID-19 infection.
Results: Among 58 pregnant women with COVID-19 disease, at the time of reporting,2 patients of 58 died due to maternal complications, 34 patients had Chest Xray changes in relation to COVID-19 infection, but were managed conservatively and were discharged under satisfactory conditions
Conclusion: We report herein in this study report two maternal deaths owing to COVID-19 disease inspite of all efforts. Until rigorously collected surveillance data emerge, it is prudent to be aware of the potential for maternal death among pregnant women diagnosed as having COVID-19 disease.

Keywords: Coronavirus disease in pregnancy, COVID-19, lower respiratory infections in pregnancy, maternal death, maternal mortality, maternal respiratory morbidity, pregnancy, respiratory failure with COVID-19

Introduction
Since the end of December 2019, the outbreak of coronavirus disease 2019 (COVID-19) epidemic has occurred and spread rapidly throughout the world. On March 11, the WHO officially announced that the COVID-19 had become a global pandemic. During the epidemic, there is another special group that needs to be taken more care of, that is, pregnant women. However, there are currently limited data on pregnant women with COVID-19 and their infants.
The WHO-China Joint Mission Report introduced an investigation of 147 pregnant women cases (64 confirmed cases, 82 suspected cases, and 1 asymptomatic case) in China from February 16 to February 24, among which 8% were severe cases and 1% were critical cases. The mortality rate of the severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome epidemic was 15% and 27%, respectively. Pregnant women seem more likely to have a mild symptom of COVID-19 infection or to be an asymptomatic case, and the risk of COVID-19 infection for pregnant women may be much lower than SARS or Middle East respiratory syndrome. The previous studies also show that pregnant women may be particularly vulnerable to COVID-19 infection. Thus, prevention and control of COVID-19 infection among pregnant women has become a major concern so that they continue their pregnancy like normal term pregnancy. In this paper, we have case reports of pregnant woman infected with COVID-19 in which mortality was reported, after they required active obstetrical intervention.

Materials and Methods
Study Design: This is a retrospective study done in Covid pregnant patients treated in Dept of Obstetrics and Gynecology from June 2020 to December 2020, for assessment of maternal complications due to COVID-19 infection.
All the admitted patients were evaluated for the following complains:

- Complaint at the time of admission

- Clinical examination-Respiratory rate, saturation
- Chest X-ray findings
- Blood investigations
- Obstetric management
- Complication due to obstetric management
- Related Co-morbidity
- Intensive requirement
- Number of patients discharged under satisfactory conditions
- Maternal mortality reported
- Cause of maternal mortality

Observations

Total number of patients evaluated-58

Table 1: Age of presentation and parity at admission

Age	20-25 Years	25-30 Years	More Than 30
	25 patients	27 patients	6 patients
PARITY	PRiMI	P2	P3 OR MORE
	21 patients	15 patients	22 patients

Table 2: Gestational age at time of admission

Gestational age	Number of patients
Less than 32 weeks	03
32-36 weeks	09
More than 36 weeks	46

Table 3: Complaints at time of admission

Complains	Number of patients
Fever	0
Cough	0
Breathlessness	0
Saturation(sPO2)> 95%	0

Table 4: Obstetric assessment at time of admission

	Number of patients
In labour	05
Not in labour	16
Obstetric high risk	33
Absolute indication of C-section	21

Table 5: Obstetric management

Conservatively managed	16
Vaginal delivery	5
Caesarean section	37

Table 6: Obstetrical complication after delivery

	Number of patients
Haemorrhage	0
Infection	0
Others (saturation drop)	3

Table 7: Maternal outcome after delivery

	Number of patients
Patients discharged	56
Death reported	02

Table 8: Details of Deaths reported

Case 1	
Death reported after how many hours	22 hours after admission
Possible cause of death	Pulmonary Embolism

A 24 year old, Primi patient with 37 weeks 6 days with oligohydramnios with decreased fetal was admitted to MMCH after she tested positive for SARS-COV-2. she was afebrile and did not have dyspnea.

On the day of admission, laboratory values were significant for lymphopenia and pancytopenia, and antepartum testing for fetal well-being was reassuring. However, on day 2 of admission, she required immediate active obstetrical intervention in view of severe oligohydramnios and Emergency LSCS was done and she delivered a healthy male of 2.5 kgs. Her postop was uneventful but Chest Xray showed opacities in left middle zone suggestive of pneumonitis.She experienced acute respiratory distress syndrome (ARDS) 24 hours later and was transferred to the ICU and intubated. Later that day, her oxygen saturations dropped (SPO2-70%), after which she have put on IPPV mode of ventilation. She then experienced acute hypotension and bradycardia and died despite cardiopulmonary resuscitative efforts. Her cause of death was COVID 19 associated Bilateral pneumonitis with cardiopulmonary arrest with pulmonary embolism.

CASE 2	
Death reported after how many hours	48 hours after admission
Possible cause of death	Pulmonary Embolism

A 21 year female, G2P1L1 with 40 weeks POG with Previous 1 cesarean delivery was admitted to MMC with complain of pain abdomen after she tested positive for SARS-COV-2. On admission, She was afebrile, did not have dyspnea and normotensive. She was managed according to COVID 19 protocol and was given trial of labour. However, she required active obstetrical intervention in view of scar tenderness, four hours after admission. She delivered a live female baby of 3.3 kgs. But her oxygen saturation levels dropped suddenly intra-operatively and she had to be intubated and shifted to IPPV mode of ventilation. Her Chest X-ray showed linear opacities in lower lung fields and pulmonary edema.

She then experienced acute hypotension and bradycardia and died despite cardiopulmonary resuscitative efforts. Her cause of death was Pulmonary embolism with pulmonary edema with massive infarction with cardio-pulmonary arrest.

Results

Among 58 pregnant women with severe COVID-19 disease, at the time of reporting, 2 of 58 died, these 2 were ventilator dependent. Of the 58 admissions with covid positive pregnant patients, 37 patients delivered via cesarean section and 5 via vaginal delivery.

Four patients were managed on nasal oxygen and two patients required intensive care and were ventilator dependent. Mortality was reported in these two patients due to pulmonary embolism.

DISCUSSION

Principal findings

Potentially consistent with reported outcomes from other severe viral lower respiratory tract infections, we found that pregnant women with SARSCoV-2 infection and COVID-19 in their second or third trimester of pregnancy experience maternal complications. Most of the infected pregnant female were of the age group of 25-30 years with parity of three or more.

Majority of the infected patients had crossed the gestation of age of 36 weeks.

Of the 58 patients evaluated, none of them were asymptomatic at the time of admission. 37 patients required active obstetrical

intervention of which 21 patients had absolute indication for caesarean section, 05 patients delivered vaginally while 16 patients were managed conservatively. None of the patient had complications like postpartum haemorrhage or infection.

Maternal mortality was reported in only 2 cases and the most prpbable cause in both the patients wad pulmonary embolism. 56 patients were discharged under satisfactory conditions on day 10.

Conclusion

COVID infection usually presents as mild disease but it is a high risk factor leading to hypercoagulability. Pregnancy in itself is a hyoercoagulable state, this infectin thus adds to risk of pulmonary embolism and sudden death. Enoxaparin(low molecular weight heparin) may be useful for prevention . All Covid pregnant patients should be closely monitored ald all lofe saving facilities should be readily available.

We report herein in this study report two maternal deaths owing to COVID-19 disease inspite of all efforts. Until rigorously collected surveillance data emerge, it is prudent to be aware of the potential for maternal death among pregnant women diagnosed as having COVID-19 disease.

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