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STUDY OF MATERNAL AND FETAL OUTCOMES IN TERM ANTENATAL COVID -19 POSITIVE CASES

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INTRODUCTION
Covid-19 is an infectious disease caused by newly discovered coronavirus. It's a major global threat. viral pneumonia is the leading cause of death worldwide. The virus is transmitted by human to human contact, aerosolised droplets and environmental contamination.

CDC includes Pregnant women in it's 'Increased risk' category for covid-19 illness. The data includes a small but significant risk of hospital admission, mechanical ventilation & death; more so in symptomatic pregnant women. Black and Hispanic women and those with obesity & diabetes mellitus are more at risk.

Physiological changes in pregnancy like reduced functional volumes, diaphragm elevation and oedema of respiratory tract mucosa as well as changes in cell immunity can lead to increased susceptibility to viral infections and worse outcomes.

We have conducted a retrospective study on 28 pregnant women with Covid 19 infection from a period of August2020 till November 2020 at 2 dedicated covid care facilities, one private tertiary care unit and one Nagpur municipal corporation hospital.

All 28 antenatal cases were positive for Severe Acute Respiratory Syndrome 2 (SARS-COV-2) on real time PCR. Mean age of women were in the range of 23-40 years. Mean GA at delivery was 37weeks. Few of them had comorbidities like hypertension, Diabetes mellitus, obesity or Thalassemia.

Average length of hospital stay was 5 days. 15/28 patients required LMWH.
5/28 required supplement O2
No patient required ventilatory support.
26 were delivered by lower segment caesarean section And 2 cases delivered vaginally.
There was no neonatal or maternal death.
All neonates were tested for covid-19 o n day 3 and day 5 after birth. 2 /28 were positive on day 3.

MATERIAL AND METHODS
We conducted a retrospective study at Dr. Dande Hospital and research centre Nagpur & centre at panchpaoli Sutikagruha on 28 patients.

All patients diagnosed with covid-19 infection were admitted between Aug-Nov 2020.

Epidemiologic history, clinical characteristics, signs, symptoms, laboratory tests, treatments and disease outcome was studied.

Clinical data of epidemiological history, clinical presentation, laboratory test results and maternal and fetal outcomes were collected from each patient.

The clinical characteristics of pregnant patients generated from medical records were gestational age, time interval between symptoms onset & detection of covid positive status and admissions gestational age at delivery, symptoms in preoperative & postoperative period, mode of delivery, length of stay. Associated morbidities were noted.

Laboratory tests done were complete blood count, WBC count, PLT count, serum ferritin, coagulation profile, LFT, KFT, D-dimer, LDH, C reactive protein, Xray chest.

RESULTS
A total of 28 pregnant cases with confirmed covid 19 status were included. The diagnosis was confirmed by SARS-CoV 2 RT-PCR test. Chest radiograph/CT Chest was not done at the time of diagnosis. Radiograph chest was not done postoperatively as it was not deemed necessary.

The demographic characteristics show median age at presentation of 30 years. A total of 18 out of 28were primigravida.

The women from urban strata were 16 out of 28 and the rest were from rural areas. The mean Gestational age at diagnosis was 37 weeks and delivery was 37 plus 1 week.

A total of 26 were delivered by caesarean section and 2 delivered vaginally.

Variables studied were

Maternal age range	23 to 40year s
Parity 1.primigravida	- 18
2.Multigravida	- 10
Urban	16
Rural	12
Gestational age at diagnosis	37wks
Gestational age at delivery	37+5

CLINICAL VARIABLES STUDIED
1. MODE OF DELIVERY
Caesarean delivery 26/28 Vaginal delivery 2/28

2. DURATION OF HOSPITAL STAY 5 days on an average.

3. CLINICAL PRESENTATION	
No clinical symptoms	18/28
Fever	8/10
Cough	8/10
Sore Throat	4/10
Weakness	9/10
Loose Motions	2/10
Loss of taste	4/10
Headache	0
Nausea /vomiting	0
4. COMORBIDITIES	
1 Diabetes mellitus	2
2 Hypertension	2
3 obesity	2
4. Beta thalassemia	1
5 Twin pregnancy	1
6 polyhydramnios	1
7Hypothyroidism	4

INVESTIGATIONS
Complete blood count, Haemoglobin estimation, Platelet count, Liver function test, kidney function test, C reactive protein, LDH, IL 6, Serum ferritin,D dimer test were done for all cases.

All the cases had haemoglobin above 10g/dl. WBC count, more importantly lymphocyte count was in the normal range in all. D dimer is an indicator of fibrinolysis. The present study showed high levels of D dimer in 15 out of 28 cases, which was more than 0.7 mcg/ml. Its application is restricted in these patients as it increases physiologically in pregnancy. Serum ferritin was raised above 140 ng/ml in 20 out of 28cases. C reactive protein was raised in all patients. The levels of alanine transaminase, albumin, blood urea nitrogen and creatinine all were in normal range.

Treatment offered
They were provided good hydration, rest & nutritious food, including cereals, pulses, vegetables, salad, fruits, milk in the hospital itself.

Multivitamins including vitamin C & zinc were started after admission.

Symptomatic treatment of fever, cough, sore throat was done with antipyretics, cough sedatives, saline gargles and steam inhalation twice a day. Antiviral therapy, steroids were not given in any patient. Intravenous fluids, Antacids, antiemetics and antibiotics were given as in any other case of caesarean section. Early mobilisation and adequate hydration was achieved. Water and food intake was started early and they were kept free from pain and nausea vomiting. Nasal oxygen was needed in only 5 out of 28 cases postoperatively. Low molecular weight heparin was needed in 10 cases whose D dimer was above 1000ng/ml or more than 0.7mcg/ml to avoid thromboembolic complications. Wound dressing was done on the third day and they were discharged from the

hospital on day 4 to 5. X ray chest was done in the postoperative period for all cases which was within normal limits in all cases. Covid test for the neonates was done on day 3. The babies were isolated from mother till then and kept in separate rooms and were given artificial feeds. All the babies did well. 2 tested positive on day 3 which suggests a low risk of maternal to fetal transmission.

DISCUSSION

The virus causing Covid 19 is believed to have originated from a local seafood market in Wuhan which is surrounded by many residential buildings which is the reason of rapid spread of disease. In our Study 26 cases delivered by caesarean section and 2 delivered vaginally. Caesarean section was done for PROM, previous caesarean section and failure to progress. Pregnant women are more likely to undergo a caesarean section in this scenario. Presumably delivering the neonate benefitted the recovery of these patients. It is currently not clear if vaginal delivery or caesarean section is better. operations should be performed in isolation wards. It was observed the mother and fetus are not at particularly high risk.In fact physiological changes in pregnancy- in the cardiovascular system, respiratory and coagulation system, may confer an increased risk of morbidity. In any case covid 19 infections should be identified early and treated promptly. Presence of comorbidities increases the risk of complications. All the cases in the three month period were detected at term only and delivered within a week. There was no maternal and fetal mortality and morbidity.

In conclusion, pregnant women with covid 19 infection have their own clinical characteristics and laboratory results. Proper and timely advice and treatment is necessary to prevent complications.nevertheless, while pregnant women do better than the population aged 60 and above, there is twice the high rate of PROM and 3 times the risk of preterm birth. There is not enough evidence to support vertical transmission of SARS-CoV-2 infection to the unborn child.

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