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**Renuka**
Junior Resident, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

**Patil GL**
Professor & Unit Chief, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

**Pujar T**
Associate Professor, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

**Shridevi AS**
Associate Professor, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

**Anitha S**
Associate Professor, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

**Corresponding Author:**
**Renuka**
Junior Resident, Department of OBG, SSIMS & RC, Davangere, Karnataka, India

# Dilemma in treating a severely ill COVID 19 pregnant patient far from term: A case report

**Renuka, Patil GL, Pujar T, Shridevi AS and Anitha S**

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**Abstract**
**Background:** Covid-19 presents with plethora of symptoms & signs, whereas pregnant people might be at increased risk for severe illness from COVID-19 compared to non-pregnant people probably due to changes in anatomy, endocrine, and immune factors during pregnancy. Additionally, there may be an increased risk of adverse pregnancy outcomes, such as preterm birth, intrauterine fetal demise.
**Case report:** A 35yr old G3P2L2 with 33 weeks 1 day of gestation with prev 2 lscs with COVID-19 positive with severe respiratory distress admitted to ICU for ventilator support. She required an emergency caesarean section in view of deteriorating medical condition. 14 days postnatally, both mother & baby were discharged with no complications.
**Conclusion:** Covid-19 in pregnancy pose a imperative aspect in its management as we do not have set guidelines on management of pregnant women & her baby in critical care setup during this pandemic. Decision making for delivery should highlight the balance of risk & benefit for maternal status & fetal status.

**Keywords:** Covid-19, preterm pregnancy, ICU, fetal monitoring

## Introduction
Novel coronavirus disease (COVID-19) in pregnancy pose a paramount importance during the global health pandemic. Pregnant women do carry the same risk of being infected with Covid 19 as of the general population. However, immunocompromised state in pregnancy, could exacerbate the course of illness particularly in the third trimester [1, 2]. Providing appropriate clinical management and support to patients while adequately protecting healthcare professionals should be our goal. There is a limited guidance on critical care management of pregnant women, requiring intubation & mechanical ventilation. We report a case of a severely ill preterm pregnant woman admitted to the intensive care unit.

## Case report
A 35yr old G3P2L2 with 33 weeks 1 days of gestation came with complaints of cough, fever, running nose, shortness of breath since 5 days, which got aggravated since 2 days, residing at a containment area with no travel or contact history. At presentation she was febrile 101.2F, tachycardia 134bpm, RR-24cpm, blood pressure was 150/90mmhg, spo2-82% at room air and was started on 10 litres of oxygen along with that her saturation was 94%.Bedside urine albumin test was done & it was nil. On admission ABG showed

| PH | 7.39 |
|---|---|
| $PO_2$ (mmhg) | 81.9 |
| $PCO_2$ (mmhg) | 35.2 |

**Fig 1:** On admission chest x ray

In view of raised blood pressure, she underwent complete haemogram with LFT, RFT, uric acid and coagulation profile. All laboratory readings were within normal limits. Injection betamethasone 12mg intramuscular was given & repeat dose was advised after 24hrs in view of anticipating preterm delivery.

| Laboratory test | Readings |
|---|---|
| Haemoglobin | 10.5gm% |
| Total leucocyte count | 6,300cells/mm$^3$ |
| Red blood cell count | 3.4 million |
| Platelet count | 1.46 lakhs |
| ESR | 40 |
| RBS | 106 |
| Urea | 5.5 |
| Creatinine | 0.4 |
| Total bilirubin | 0.7 |
| Direct bilirubin | 0.2 |
| Indirect Bilirubin | 0.5 |
| Total protein | 5.7 |
| Albumin | 3.0 |
| Globulin | 2.7 |
| SGOT | 33 |
| SGPT | 11.1 |
| ALP | 151 |
| GGT | 47 |
| LDH | 479 |
| Uric acid | 1.6 |

On day 2 of admission, evening patient complaints of increasing breathlessness. Pr-124bpm, Bp-130/80mmhg, Spo2 was 90% with 15 litres of oxygen, & there was significant increase in respiratory rate to 50cpm,& in view of severe tachypnoea and increased work of breathing, emergency intubation was done after giving adequate pre oxygenation. Post intubation vitals were pr-110bpm, Bp-110/70mmhg, spo2-96% Fio2-100%.On day 3 of admission ABG showed

| | | |
|---|---|---|
| PH | ⇓ | 7.3 |
| $PO_2$ (mmhg) | ⇓ | 71.5 |
| $PCO_2$ (mmhg) | ⇑ | 38.4 |

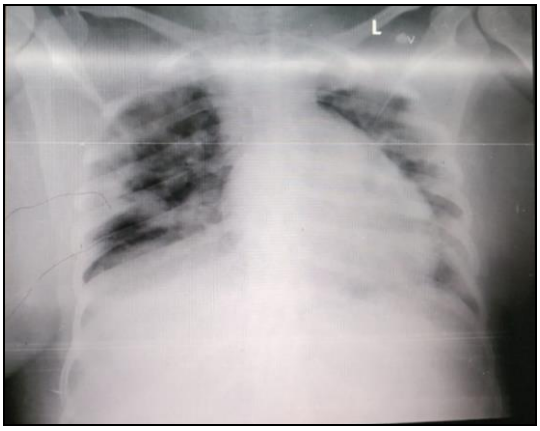

**Fig 2:** Chest x ray on day 3 of admission.

Bed side scan was done which showed a single live intrauterine gestation with good cardiac activity, weight 1.9 kg, AFI 6 cms, placenta fundal. Due to maternal obesity and tachypnoea Doppler was not possible. Monitoring of the fetal heart rate was not possible at the ICU setup. The plan was to allow the patient to tide over the crisis and then later plan for delivery in view of prematurity.But,4 days following admission there was deterioration of the maternal & foetal condition, so an emergency caesarean section was decided with informed consent. Emergency lscs was done under general anaesthesia, a live female preterm baby was delivered by cephalic presentation, 1.8Kg, Apgar 1min-2/10,5 min-3/10,no intraoperative complications were noted, following delivery, baby was intubated, chest x ray was done, one dose of surfactant was given, 48 hours later baby throat swab was sent for covid-19 testing, which came negative, next day following delivery baby was extubated and was maintaining on minimal O2 & was shifted to NICU for further preterm care & management.

**Fig 3:** Mother & Baby on post op day 4

Mother was started with tube feeds, antibiotics and analgesics continued.72 hours post-surgery she was extubated put on bipap and later nasal prongs with minimal oxygen support. She was managed with a multidisciplinary team of doctors.

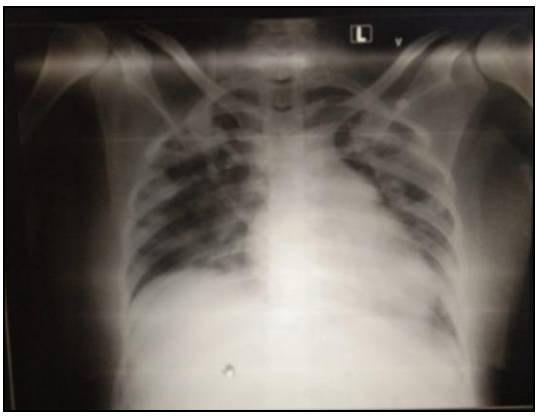

**Fig 4:** Chesy x ray following extubation on day 8 of admission

Chest physiotherapy continued. Serial assessment with arterial blood gas analysis and chest X ray were performed, antibiotics were changed accordingly. Repeat swabs were done according to the local protocol & were negative. Patient later started with expressed breast feeding, baby was cared at the neonatal intensive care unit. Discharged on the 14 th postnatal day to review on outpatient basis. Mother and baby doing well at the time of discharge.

## Discussion

Pregnancy is a state of partial immune suppression which makes them more vulnerable to viral infections. The anatomical structure of the respiratory system is changed during pregnancy, and the virus transmitted by droplets and aerosols is more easily inhaled by pregnant women and is difficult to remove. Furthermore, the prognosis is worse after infection when compared with non-pregnant women. And changes in

reproductive hormones and immune systems during pregnancy collectively make them more susceptible to certain infections. More importantly, angiotensin-converting enzyme (ACE)-2, the SARS-CoV-2 receptor, has been proven highly increased during pregnancy, which may contribute to the susceptibility to SARS-CoV-2 [3]. Therefore, the COVID-19 pandemic may have serious consequences for pregnant women. Available evidence does not suggest the probability of vertical transmission, no recorded case of vaginal secretions or breast milk being tested positive for Covid 19.

Pregnant women should be advised to increase their social distancing to reduce the risk of infection and practice hand hygiene during the tailored to minimum antenatal check-ups. Intrapartum services should be able to provide emergency obstetric, anaesthetic and neonatal care where indicated. Currently no evidence to favour one mode of birth over another. [4]It depends on the woman's respiratory condition. Continous fetal cardiotocography is recommended [5]. Shortening of second stage of labour or an caesarean delivery if needed is done with early cord clamping and cleaning of the newborn. Postnatally attenders should wear PPE kits along with health care providers. In case of rooming in of the newborn with the mother, the use of physical barriers like curtains, keeping six feet distance, use of face mask and gloves during breast feeding with good hand hygiene is advisable. Expressed breast milk can be encouraged to maintain milk supply [6, 7].

Perinatal anxiety and depression needs psychological support from mental health care providers. Once patient and baby should test negative for Covid 19 with stable maternal and neonatal condition should be fit for discharge from hospital.

## Conclusion

Obstetric units should take into consideration, appropriate isolation of pregnant patients who have confirmed Covid 19.To provide basic and refresher training for all health care personnel to include correct adherence to infection control practices, PPE use and handling (preferably by video presentation).Sufficient and appropriate PPE supplies positioned at all points of care. Measures to protect newborns from risk of Covid 19.Protective gear as contact and airborne additional measures include N95 mask, gown, gloves and eye protection should always be considered. Corona pandemic increases the risk of perinatal anxiety and depression which needs psychological support.

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