OBSTETRICALLY HIGH-RISK PREGNANCY LEADING TO PRETERM CAESAREAN DELIVERY IN A CONFIRMED CASE OF COVID-19: A SUCCESSFUL JOURNEY FROM COVID-19 BILATERAL PNEUMONIA TO COMPLETE RECOVERY

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ABSTRACT
The ongoing pandemic of COVID-19 pneumonia is globally concerning. In depth knowledge of hazards of COVID-19 in pregnancy are sparse. To predict the course of COVID-19 infection in pregnant women, in depth research is utmost needed.

INTRODUCTION
Coronavirus disease 2019 (COVID-19) is a global pandemic with rapid increase in cases and deaths since its first identification in Wuhan, China, in December 2019. Coronaviruses are single-stranded RNA, non-segmented, enveloped viruses. Data available about COVID-19 during pregnancy are sparse. COVID-19 results in illness ranging in severity from the common cold to severe pneumonia and death. Common manifestations include fever, cough, shortness of breath, myalgia, headache and diarrhoea. Currently no coronavirus specific treatments have been approved by the US Food and Drug Administration. Management should optimally be in a health care facility with close maternal and foetal monitoring; as this disease might increase the risk of pregnancy complications. Principles of management of COVID-19 in pregnancy include early isolation, aggressive infection control procedures, early oxygen therapy, avoidance of fluid overload, consideration of empiric antibiotics (due to risk of secondary bacterial infections), laboratory testing of virus and coinfection, foetal and uterine contraction monitoring, early mechanical ventilation for progressive respiratory failure, individualised delivery planning, and a multidisciplinary team based approach. We present a case report of a pregnant women having obstetric high-risk factors such as severe pre-eclampsia culminating in preterm caesarean delivery with milder form of covid-19 infection progressed to bilateral covid-19 pneumonia; later successful management leading to complete recovery of patient. To predict the course of COVID-19 infection in pregnant women, in depth research is utmost needed.

CASE REPORT
A 26-year-old female, gravida 2, abortion 1, with secondary infertility conceived after ovulation induction, at 30 weeks of gestation, with no history of underlying medical condition. Patient was admitted to a private hospital 3 days back, in view of severe pre-eclampsia culminating in preterm caesarean delivery with milder form of covid-19 infection progressed to bilateral COVID-19 pneumonia; later successful management leading to complete recovery of patient. Pneumonia was diagnosed by means of chest radiography in a confirmed case of COVID-19. The patient required intensive care unit with ventilatory support; which was later weaned off and discharged home in good condition. Baby born to her tested negative for COVID-19 infection also didn't developed symptoms of pneumonia. Close monitoring, early recognition of symptoms and prompt management with multidisciplinary team approach in COVID-19 cases has successful outcome in pregnant women.
On POD-4, CXR picture worsened showing increased radiopacities in bilateral lung. Serum ferritin levels (354ng/L) were raised. On POD-5, CXR showed multiple patchy consolidation in bilateral lung fields more on right side. She was maintaining saturation 98% on NIV with FiO2 90%. On POD-6 and 7, NIV discontinued as she was maintaining O2 saturation of 95% on high concentration face mask with reservoir bag delivering O2 at the rate of 12 lit./min. (RR-28/min). On POD-8, tachypnoea resolved (RR-18/min), O2 delivered at 4-6 lit/min by NRBM(non-rebreather mask) to allow deliver higher concentration of O2. On POD-9, she started feeling better, on room air (RA) SpO2 was 88% while 95-98% with intermittent O2; bilateral crepitations were decreased and CXR picture improved than before. On POD-10, she was maintaining SpO2 94% on nasal O2 (4 lit/min). On POD-11 and 12, SpO2 improving off O2; 90% on RA and 94% on nasal O2, RR-15/min. LSCS sutures site was healthy and sutures were removed on POD 11. On POD-13, SpO2 96% maintained on RA, however CXR showed right midzone patch. On POD-14-15, she maintained SpO2 98% on RA and CXR showed resolving right midzone patch. On POD-17, patient was discharged home since there was complete resolution of symptoms such as dyspnoea, tachypnoea, absence of fever and there was no requirement of oxygen for last 4 days with14th and 15th day nasopharyngeal swab reports of COVID-19 were negative.

The ongoing outbreak of COVID-19 pneumonia is globally concerning. Pregnant women are more susceptible to infectious diseases due to the immune suppression. Currently, there are no statistical data regarding pregnant women infected with COVID-19. A retrospective review has indicated the clinical characteristics of nine pregnant women with COVID-19. Previous studies found that there was a male-dominated tendency and few cases occurred in children for COVID-19 pneumonia. There are few published data involving the clinical and chest CT findings of COVID-19 pneumonia in pregnant women and children. In the study conducted by Huanhuan Liu et al, all the pregnant women with COVID-19 were stratified as the mild or common type. No pregnant woman was admitted to the intensive care unit (ICU), and no clinical abnormalities were observed in the infants. Atypical clinical findings of pregnant women with COVID-19 could increase the difficulty in initial identification. Consolidation was more common in the pregnant groups. The clinically-diagnosed cases were vulnerable to more pulmonary involvement. The ongoing outbreak COVID-19 pneumonia demonstrated a relatively high contagion; meanwhile there are no specific therapeutic drugs and vaccines for the COVID-19. Early identification of COVID-19 is important for the patients as well as the healthy population. Currently, the patients should be isolated for treatment from the healthy people for controlling the epidemic. It has been reported that chest CT is superior to RT-PCR in sensitivity for early detection of COVID-19. In our case we serially monitored CXR to assess patient’s condition and response to the treatment given.

Further research is needed to assess the risk and to produce guidelines for delivery times and methods in patients with COVID-19. Yudin and colleagues reported a pregnant woman with SARS at 31 weeks of gestation; the patient stayed for 21 days in the hospital and did not require intensive care admission or ventilatory support, and a healthy baby girl was delivered by vaginal birth. It is unknown whether vaginal delivery increases the infection risk. Further research is needed to assess the risk and to produce guidelines for delivery times and methods in patients with COVID-19.

As per the study conducted by Lam CM et al, although all mothers and infants showed good outcomes, all enrolled pregnant women were in the third trimester, and all had only mild symptoms. Hence, the effect of SARS-CoV-2 infection on the foetus in the first or second trimester or in patients with moderate to severe infection is unknown. It also reported that, SARS coronavirus infection during pregnancy might cause preterm birth, intrauterine growth restriction, intrauterine death, and neonatal death.

Considering that the potential of SARS-CoV-2 to cause severe obstetric and neonatal adverse outcomes is unknown, rigorous screening of suspected cases during pregnancy and long-term follow-up of confirmed mothers and their neonates are needed. In the study by Yu and colleagues, three neonates were tested for SARS-CoV-2, of whom two were negative. One neonate was positive, but the viral nucleic acid tests of the placenta and cord blood in this case were negative. Neutone in our case, tested negative for SARS-CoV-2. No reliable evidence has been provided in support of the possibility of vertical transmission of COVID-19 infection from mother to baby. But all these studies only assessed a small number of cases. Future studies should include a larger number of cases.
samples across multiple centres to establish whether vertical transmission can occur between mother and child.

CONCLUSION
Special attention, as well as prioritized care, should be offered to a pregnant woman based on their health status. Initiation of early oxygen therapy lead to a good outcome in our case. Close monitoring, early recognition of symptoms and prompt management with multidisciplinary team approach in covid-19 cases has successful outcome in pregnant women. To predict the course of covid-19 infection in pregnant women, in depth research is utmost needed.

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