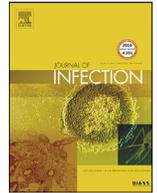




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## Letter to the Editor

## First trimester miscarriage in a pregnant woman infected with COVID-19 in Pakistan

Dear Editor,

We read with great interest a recent article published in the Journal of Infection, entitled "unfavorable outcome in pregnant patients with COVID-19" by Wenhui Huang et al.<sup>1</sup> The authors analyzed the impact of COVID-19 on pregnancy with severe maternal and neonatal complications. We hereby report a case of miscarriage during the first trimester due to SARS-CoV-2 infection in Pakistan.

A pregnant lady in her first trimester who has miscarriage was selected for the present study. Written consent was obtained from the patient before evaluation. The demographic, clinical and laboratory findings were collected from the patient medical record. Nasopharyngeal swab was tested for confirmation of COVID-19 RNA using real-time RT-PCR. Blood sample was screened for other viruses, bacteria and for the analysis of hematological and biochemical markers. The study was approved by the internal review board of National Institute of Health, Islamabad.

A 30 years old woman, with no any previous medical history, was presented at 10 weeks and 6 days of gestation to the emergency department of a tertiary care hospital in Rawalpindi with history of fever, dry cough, headache, body pain, sore throat, chest pain and loss of smell and taste. She was provisionally diagnosed as COVID-19 patient by the attending physician. Laboratory investigations were performed on nasopharyngeal specimen and tested positive for SARS-CoV-2 on June 4, 2020. The patient went into home isolation after confirmation of COVID-19 infection. The attended physician prescribed paracetamol thrice a day for one week. Within 4 to 5 days, the patient recovered with complete absence of fever and body pain. Three days later, she was again presented at the hospital with severe abdominal pain, diarrhea and dry cough. The attending physician prescribed antibiotic (Cefixime 400 mg along with Metronidazole 400 mg for 5 days) and recommended to continue the home isolation.

On June 18, 2020 she was presented to the gynaecology department, with severe uterine contraction, persistent cough and minor vaginal bleeding. The results of ultrasound scan showed no urinary bladder lesion or any other abnormality, however the inflammation in the placenta was noted during the scan. She had undergone miscarriage on the same day and re-admitted at the hospital. On the very next day, the patient condition got stable and was discharged from the hospital.

Patient nasopharyngeal swabs screened for other respiratory viruses remained negative. Likewise, her blood sample tested for salmonella, toxoplasma, dengue, hepatitis B, hepatitis C, cytomegalovirus (CMV) and rubella virus to rule out other causes of miscarriage turned negative for the above mentioned pathogens.

Table 1

Demographic, clinical and laboratory features of COVID-19 patient.

<b>Demographic Data</b>	
Age (Years)	30
Locality	Abbottabad, KPK
Gestational Weeks	10
Covid-19 (rRT-PCR positive date)	04-Jun-20
Medical history	None
Delivery Mode	<b>Miscarriage; 18-Jun-20</b>
Ultrasound findings	Placental inflammation
<b>Clinical Features</b>	
Fever	99.8 °F
Cough	+
Sore throat	+
Loss of smell and taste	+
Shortness of breath	+
Chest pain	+
Headache	+
Myalgia/Fatigue	+
Nausea/Vomiting	+
Abdominal pain	+
Diarrhea	+
<b>Laboratory Findings</b>	
Hb (g/dL: 11.5 to 16.5)	9.7
WBCs count ( $4-10 \times 10^9/L$ )	$11.7 \times 10^9$
Neutrophils ( $2-7 \times 10^9/L$ )	$9.96 \times 10^9$
Lymphocytes ( $1-3 \times 10^9/L$ )	$1.26 \times 10^9$
Platelet count ( $150-400 \times 10^3/\mu L$ )	$130 \times 10^3$
Total Bilirubin (0.2-1.0mg/dl)	0.9
ALT (<50 U/L)	67
ALP (65-306 U/L)	383
Urea (10-52mg/dl)	32
Creatinine (upto 1.0 mg/dl)	0.8
CRP (0-6 mg/L)	37
Hepatitis B,C	Negative
Toxoplasma gondi (IgM/IgG)	Negative
Salmonella (IgM/IgG)	Negative
Rubella (IgM/IgG)	Negative
CMV (IgM/IgG)	Negative
HSV (IgM/IgG)	Negative
<b>Outcomes</b>	
Covid-19 (rRT-PCR negative date)	29-Jun-20
Maternal Outcome	Survived

Hb= Hemoglobin, WBC= White blood cells, ALT= Alanine amino transferase, ALP= Alkaline phosphatase, CRP= C- Reactive protein, Hb= Hemoglobin, CMV= Cytomegalovirus, HSV= Herpes simplex virus, rRT-PCR= Real-time reverse transcription polymerase chain reaction,

In a follow-up test for COVID-19, the patient nasopharyngeal swab became negative on 29 June 2020 with complete recovery. The haematological findings indicated thrombocytopenia, decreased hemoglobin level, high WBCs (white blood cell count), high neutrophils count and increased creatinine and CRP (C-reactive protein) levels. Clinical and laboratory findings are summarized in Table 1.

This case of miscarriage during the first trimester due to SARS-CoV-2 infection appears related to placental infection as no other cause of miscarriage was identified. Limited data is available regarding the impact of COVID-19 on pregnancy, however the case of miscarriage due to placental infection caused by SARS-CoV-2 in second trimester has already been reported.<sup>2</sup> High rate (57%) of miscarriage in first trimester due to SARS-CoV has been documented during 2002–2003 epidemic.<sup>3</sup> During the MERS-CoV epidemic, alarming rate of adverse pregnancy outcomes were reported previously.<sup>4</sup> Some recent research studies reported that the placenta of COVID-19 infected pregnant women have increased deposition of perivillous fibrin and multiple villous infarcts and such type of placental infection caused by COVID-19 may disturb the transportation of nutrients from mother to the fetus which lead to the adverse pregnancy outcomes such as preterm delivery, intrauterine growth restriction and miscarriage.<sup>5</sup>

Limitations of this study include findings reported from a single case and unavailability of placental specimen for further virological and pathological investigations. Available data, although limited, on the miscarriage cases highlights that the pregnant women infected with SARS-CoV-2 are at a considerable health risk including pregnancy and delivery complications. The detailed investigations of pregnant mothers infected with COVID-19 and its impact on pregnancies during all three trimesters warranted further large scale studies to evaluate the safety and health of pregnant women.

#### Declaration of Competing Interest

Authors declared that there is no conflict of interest.

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