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Case Report

Miscarriage in COVID-19 Infection: a case report

Linda Yanti 12, Dwi Susanti 2

¹ Department of Midwifery, Faculty of Health, Universitas Harapan Bangsa, Banyumas, Central Java, Indonesia

² Infection Prevention Control Nurse (IPCNs), Batin Mangunang Regional General Hospital, Tanggamus, Lampung, Indonesia

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CORRESPONDENCE

Phone: +6285328111988

E-mail: lindayanti@uhb.ac.id

ABSTRACT

Background: Data on miscarriage in pregnant women with COVID-19 are still limited, as well as the mechanism that causes miscarriage in women with COVID-19. This study aims to report the mechanism of miscarriage that occurs in patients with COVID-19 from various literature.

Case presentation: We reported a case of miscarriage occurred in a woman aged 28 years, 11-week pregnancy with COVID-19 in Batin Mangunang Regional General Hospital, Lampung Province, Indonesia.

Conclusion: Pregnant women infected with COVID-19 are at risk for miscarriage.

INTRODUCTION

The number of COVID-19 cases globally has reached 170,051,718 cases, with a death toll of 3,540,437 patients and 2% befallen in pregnant women. The prevalence of COVID-19 in Indonesia has reached 1,809,926 confirmed cases, with many mortality reaching 50,262 patients. However, data on the loss of pregnant women with COVID-19 have not been reported.^{1,2}

To this point, research and data discoursing miscarriage in patients with confirmed COVID-19 remain limited. Research confirms that the occurrence of miscarriage associated with SARS-CoV, MARS-CoV, and SARS-CoV-2 is 14.5%.² Nonetheless, the mechanism of miscarriage in COVID-19 patients has not been widely discussed. This study reports the incidence of miscarriage in pregnant women with COVID-19 and describes the mechanisms of miscarriage related to COVID-19 from various literature.

CASE PRESENTATION

A 28-year-old mother in 11 weeks of pregnancy visited the Emergency Unit of the Hospital with complaints of lower abdominal pain accompanied by vaginal bleeding. The provisional examination result was that the patient had a miscarriage. Based on anamnesis results, the patient said that he did not have risk factors for miscarriage, such as a history of falls, anemia, and other chronic diseases. However, the patient experienced diarrhea for one week, accompanied by heartburn. The patient's general condition was weak with a dry cough slightly, blood pressure 120/80 mmHg, pulse 86x / minute, respiration 20x / minute, and a 36.8 °C.

Patients were screened for COVID-19 using a rapid antibody test with reactive IgM and IgG results. Then it was confirmed by PCR examination with positive results. The doctor diagnosed the patient with an incomplete abortion and was infected with COVID-19. The patient was subjected to curettage and then treated in an isolation room. Antibiotic therapy, Nonsteroidal anti-inflammatory drugs (NSAIDs), antihemorrhagic agents were administered to prevent infection and further blood loss. The patient was also given a multivitamin to increase immunity.

DISCUSSION

Pregnant women are a group at risk of contracting infections, one of which is a respiratory infection. Due to physiological changes in pregnancy, it results in a decline in the

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immune system so that pregnant women are more susceptible to infectious diseases, including the COVID-19 infection, which is currently widespread.^{3–6} The patient indicated a rapid test for IgM antibody, reactive IgG, and positive PCR, which meant that the patient had been exposed to COVID-19 on 2 to 3 weeks before the miscarriage occurred.

Symptoms of COVID-19 infection include fever, cough, diarrhea, fatigue.^{2,4} In this case, the patient also experienced diarrhea for one week and fatigue. Diarrhea can cause dehydration which may lead to the volume of the amnion being reduced, resulting in disruption of fetal development or even miscarriage. In addition, physical fatigue triggers uterine contractions that result in miscarriage. Miscarriage can also occur due to intra-abdominal pressure caused by intense and repeated coughing.

Another possibility of miscarriage in a mother infected with COVID-19 occurs due to placental insufficiency, which inhibits nutrition and oxygen so that the fetus experiences hypoxia, and miscarriage occurred.^{7–9} The decrease in the kisspeptin hormone may cause the placenta not to implant properly on the uterine wall resulting in miscarriage.^{10–12}

The risk of proinflammatory cytokine storm increases in pregnant women infected with COVID-19. This cytokine storm can cause severe inflammation that causes damage to various organs, one of which is the placenta, so that miscarriage can occur.^{13–15}

CONCLUSIONS AND RECOMMENDATION

Miscarriages that occur in pregnant women with COVID-19 may occur due to symptoms caused by infections such as coughing, diarrhea, and fatigue, in addition to hormonal influences and damage to the placenta. Further research is required regarding the exact causes and mechanisms of miscarriage in pregnant women with COVID-19.

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