

Exploring the Link among COVID-19 and Pregnancy Loss

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DESCRIPTION

The new severe acute respiratory syndrome virus (SARS-CoV-2) originates from Wuhan, China and has spread around the world. According to studies, the results of the SARS-CoV-2 test have been reported to be positive for a number of pregnant women. However, not much is known about the effect of this virus on pregnancy and the outcome of the baby. The intend of this study was to evaluate the molecular and diagnostic approach in evaluating the effect of Coronavirus disease 2019 (COVID-19) on pregnancy loss. The entry of COVID-19 virus into the pregnant mother's body through various channels, including the angiotensin-converting enzyme receptor (ACE2), affects the immune and coagulation systems and hormone levels. These changes include increased D-Dimer, platelet and decreased protein C (PC) levels, increased Anti-Thrombin III (AT-III) and elevated levels of pro-inflammatory cytokines, including IL-6, followed by disruption of various signaling pathways such as JAK/STAT, PI3K and SMAD factors 1/3; Decreased regulation of the expression of Cyclooxygenase 1 (COX1) and Prostaglandin E2 (PGE2) and hormones such as progesterone was observed. These changes disrupt decision-making in the endometrium and ultimately lead to serious pregnancy risks, including miscarriage. Due to the important role of signaling pathways in maintaining the body's homeostasis and regulating the body's immune functions, disrupting the pathways through the entry of the virus into the body disrupts the body's homeostasis. Increases the risk of miscarriage in pregnant women.

Coronavirus disease 2019 (COVID-19) is a virus from the coronavirus family, whose study of clinical effects has become one of the main topics of study in the world scientific community. The pandemic of the virus began in late 2019 in Wuhan, China. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2) is the name now given to this new virus. It is named by the International Committee on Taxonomy of Viruses, as well as other virologists based on the similarity of this new virus to SARS-COV, which broke out in 2002. COVID-19 can infect all age groups; it is easily transmitted

through the respiratory tract. Clinical signs of the virus include shortness of breath, fever, cough, headache, gastrointestinal and heart problems, blood clotting disorders and other complications.

Many studies have focused on the effect of this disease on the general population, but not enough study has been done to explore the effect of this disease on persons with specific disorders, including pregnancy issues, although pregnant women are considered a high-risk category owing to physiological changes. Including these physiological changes hematological, cardiac, renal, respiratory, metabolic, gastrointestinal and hormonal changes. In one case, placental infection was observed with COVID-19, which may cause preeclampsia and worsening the mother's physiological condition, and premature termination of pregnancy or abortion. Another study of 116 pregnant women with COVID-19 found clinical findings of preterm delivery and miscarriage, but found no significant association between the Infection with the virus and those reported.

In another case, the traces of COVID-19 left in placenta and miscarriage for no reason in the second trimester in a 28-year-old mother can bring us closer to understand the relationship between viral placental infection and miscarriage. Due to the clinical effects of this virus on various organs of the body and to improve the control and management of this pandemic, and increase the knowledge about the pathogenesis of this disease, it is necessary to conduct study about the effect of virus on different populations in different conditions such as pregnancy.

There are several studies that evaluated the clinical effects of this virus on pregnant women and their specific physiological conditions, as well as the relationship between maternal infection with this virus and abortion. Pregnant women are in a state of suppressed immune system due to physiological changes; they are considered as COVID high-risk group, due to susceptibility to infections and mechanical functions. Immune system suppression disrupts the pregnancy process by affecting the profiles of cytokines and various coagulation systems and hormones; these disorders are associated with the risk of miscarriage.

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