

Analyzing the possibility of SARS-CoV-2 vertical transmission

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Introduction:

The novel coronavirus, termed SARS-CoV-2, and the potentially life-threatening respiratory disease associated with it, COVID-19, has rapidly evolved into a pandemic crisis. Limited information is available on the possibility of vertical transmission of SARS-CoV-2.

Aim of the study:

Summarize the clinical data on vertical transmission of SARS-CoV-2 and fetal outcomes.

Materials and Methods:

Electronic searches of PubMed/Medline were completed from inception to November 19, 2020. "SARS-Cov-2", "COVID-19" and "Coronavirus" terms were cross-referenced with "intrauterine transmission", "perinatal transmission", "vertical transmission of infectious disease", as well as "infant", "newborn" and "neonate". Inclusion criteria were pregnant women with a confirmed diagnosis of SARS-CoV-2 infection. Case reports written in English and published between November 17, 2019, and November 19, 2020, were screened. Data on intrauterine transmission and fetal outcomes were extracted and analyzed.

Results:

Twenty-eight articles reporting outcomes of 42 pregnant women and their infants. All women tested positive for SARS-CoV-2 either in their third (95%) or second (5%) trimester of pregnancy. Only 15 neonates tested positive for SARS-CoV-2. The majority of infants were delivered by C-section (83%). Sixteen studies suggested the possibility of vertical transmission either in utero, during delivery, or breastfeeding. Various materials and methods were used to prove transmission. However, SARS-CoV-2 RT-PCR testing of amniotic fluid (41%), placenta (38%), cord blood (34%) were commonly implemented. The majority of newborns were isolated from the mothers, and breastfeeding was not allowed until SARS-CoV-2 RT-PCR of the mother and infant were negative. Only 1 maternal death and 1 neonatal death were reported.

Conclusion:

Vertical transmission of SARS-CoV-2 can not be ruled. It remains unclear whether neonates born to mothers positive for SARS-CoV-2 were infected in utero, intrapartum, or postpartum. Multicentre, cohort studies are needed to elucidate the role of SARS-CoV-2 during pregnancy better.

Keywords: SARS-CoV-2, pregnancy, vertical transmission