

COVID-19 in pregnancy

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Abstract

Evidence continues to emerge on the impact of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, COVID-19) in pregnancy. Compared with previous coronavirus outbreaks (severe acute respiratory syndrome and Middle East respiratory syndrome), recent reports suggest that pregnant women who contract SARS-CoV-2 have lower rates of maternal and fetal complications; however, the incidence of preterm birth remains elevated. The potential for vertical transmission is still under investigation. Universal testing of women admitted to labor and delivery is being encouraged in most centers.

Keywords: COVID-19, Coronavirus, Pregnancy, SARS-CoV2, Maternal complications, Fetal complications

The impact of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, also known as COVID-19) on pregnancy seems to differ from prior coronaviruses including severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS-CoV). According to a recent review published by Segars and colleagues, COVID-19 has lower maternal mortality rates when compared with SARS and MERS-CoV with most affected women recovering without delivery. In addition, pregnant women do not seem to be more susceptible to COVID-19 or manifest more severe symptomatology than the general population. Despite these factors, higher rates of preterm delivery and fetal growth restriction have been described (Table 1). At this time, miscarriage rates do not seem to be increased above those of the general population, though further studies are needed to understand the impact of the virus on earlier stages of pregnancy^[1].

The potential for vertical transmission remains under investigation. To date, COVID viral RNA has not been detected in amniotic fluid, cord blood, or breast milk^[1]. Despite no documented reports of vertical transmission from SARS or MERS-CoV, 2 recent case reports in *JAMA* have suggested the possibility for vertical transmission with COVID infection. One case describes a COVID-19-positive woman who had positive placental culture for SARS-CoV2 after experiencing a second-trimester miscarriage^[2]. The other involves the detection of IgM antibodies for SARS-CoV-2 in a healthy neonate born to a COVID-19-positive mother^[3].

Table 1
Pregnancy and coronavirus epidemics.

| | SARS (%) | MERS (%) | COVID-19 (%) |
|---------------------------------|----------|----------|---------------|
| Maternal complications | | | |
| Mechanical ventilation | 35 | 41 | 4 |
| Mortality | 18 | 25 | < 1 |
| Fetal complications | | | |
| Miscarriage | 25 | 18 | 2 |
| Intrauterine growth restriction | 13 | 9 | 7 |
| Preterm birth | 25 | 27 | 32 |
| Neonatal death | 0 | 9 | 1 |

Bold highlight the key differences from other coronaviruses.

MERS indicates Middle East respiratory syndrome; SARS, severe acute respiratory syndrome.

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A study evaluating COVID testing in pregnant women presenting to labor and delivery demonstrated high rates of asymptomatic infections (13.5%)^[4]. Interestingly, this same study noted that 10% of women that were asymptomatic, COVID-positive on admission developed severe symptoms postpartum. The link between postpartum manifestation of symptoms is still under investigation, but these findings are the primary driving force behind the push for universal COVID testing upon admission to labor and delivery.

Conflict of interest disclosures

The author declares that there is no financial conflict of interest with regard to the content of this report.

References

- [1] Segars J, Katler Q, McQueen DB, *et al.* Prior and novel coronaviruses, COVID-19, and human reproduction: what is known? *Fertil Steril* 2020;113:1140–9.
- [2] Baud D, Greub G, Favre G, *et al.* Second-trimester miscarriage in a pregnant woman with SARS-CoV-2 infection. *JAMA* 2020;323:2198–2200.
- [3] Dong L, Tian J, He S, *et al.* Possible vertical transmission of SARS-CoV-2 from an infected mother to her newborn. *JAMA* 2020;323:1846–8.
- [4] Sutton D, Fuchs K, D'Alton M, *et al.* Universal screening for SARS-CoV-2 in women admitted for delivery. *N Engl J Med* 2020;382:2163–4.

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