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SOGC Committee Opinion – COVID-19 in Pregnancy

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SOGC Committee Opinion – COVID-19 in Pregnancy

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on behalf of the Infectious Disease Committee of the Society of Obstetricians and Gynaecologists of Canada

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In December 2019, a novel coronavirus, eventually termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was identified in Wuhan, China. As of 10 March, 2020, COVID-19 has infected >100 000 people globally and caused thousands of deaths.[1] As of early March 2020, Canada has detected several dozen cases, most of them in returning international travellers or their close contacts.[2] Given that pneumonia is an important cause of maternal morbidity and mortality, the emergence and global spread of COVID-19 has raised concerns about the implications of this outbreak for pregnant women and their fetuses. Pregnant women and their loved ones will be looking to maternal care providers for information and guidance on how to prevent or manage infection with COVID-19.

Due to physiologic changes that occur in pregnancy, when compared with their non-pregnant counterparts, pregnant women with lower respiratory tract infections often experience worse outcomes, including higher rates of hospital and intensive care unit admission.[3] Since 2002 there have been two other global outbreaks of highly-pathogenic coronaviruses: severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). While SARS and MERS are not identical to SARS-CoV-2 in their genetic structures or clinical manifestations, the recent outbreaks of these viruses may provide insights on the effects of COVID-19 in the context of pregnancy. The literature on SARS and MERS in pregnancy are limited to a handful of case reports and series.[4,5, 6, 7, 8, 9] Many of these cases involved severe morbidity including the need for intensive care and cardiorespiratory support. Notably, there were cases of maternal mortality associated with SARS and MERS infection. The only published case-control study showed that pregnant women with SARS experienced worse outcomes than non-pregnant women of similar age.[10]

Reports varied with respect to the effects of SARS and MERS on pregnancy outcomes. Spontaneous abortion has been reported among women infected with SARS and MERS in the first trimester.⁴ As well, stillbirth, intrauterine growth restriction, and preterm birth have been reported in pregnancies affected by SARS and MERS in the second and third trimesters.^[4,9] It is important to note, however, that a number of pregnancies had good outcomes despite maternal infection with SARS or MERS.^[6,7,8] Broadly speaking, and drawing upon our knowledge of other respiratory illnesses in pregnancy, adverse

It remains to be seen whether the effects of COVID-19 on pregnant women and their fetuses will be similar to those of SARS and MERS. To date, the reported case-fatality rate for the general population infected with COVID-19 is lower than that of either SARS or MERS (estimated at 1%–2% vs. 9%–10% and 35%–40%, respectively). Similarly, by now, there have been over 60 cases of pregnant women with confirmed COVID-19 in China and the vast majority of these women have had mild to moderate pneumonia.^[11,12,13,14] To date there has been one case of severe maternal morbidity secondary to COVID-19 reported.^[12] This 31-year-old woman was infected at 34 weeks gestation and went on to experience severe respiratory compromise and multi-organ dysfunction requiring extra-corporeal membrane oxygenation (ECMO). The pregnancy outcomes of the reported cases have been largely good,^[11,12,13] with spontaneous and iatrogenic preterm labour being the most commonly reported adverse pregnancy outcomes. One stillbirth has been reported and this occurred in the case of severe maternal illness reported by Liu et al.^[12] Given the limited data, it is too early to determine if higher rates of adverse outcomes are expected in pregnant women infected with COVID-19. As with SARS and MERS, pregnancy outcomes are likely to be strongly correlated with degree of maternal illness.^[12]

There has been no evidence of vertical (mother-to-infant) transmission found in any cases of SARS, MERS, or COVID-19. Additionally, analyses of amniotic fluid, serum, placenta, and breastmilk from pregnant women confirmed to have SARS or COVID-19 infection have found no detectable viral RNA,^[8,13] further supporting that vertical transmission is unlikely. Importantly, maternal infection with SARS, MERS, or COVID-19 has not been associated with teratogenicity. However, because of the small number of reported cases of infection during the first trimester (when embryogenesis occurs), risk of congenital anomaly associated with COVID-19 cannot be completely excluded.

RECOMMENDATIONS

Based on our current understanding of the global outbreak, the following points represent our understanding of COVID-19 in pregnancy with specific recommendations for antepartum, intrapartum and postpartum care:

Antepartum Care

- Obstetrical patients with respiratory symptoms should be asked to wear a surgical mask immediately upon presentation to the health care facility.

- Women suspected of having or having been exposed to COVID-19 should be triaged quickly, given a mask to wear, and transferred to a single-occupancy room as quickly as possible.
 - Testing should be performed as per local guidelines and recommendations. Pregnancy does not appear to alter test performance.
 - Expectant management at home may be appropriate for many women. For women requiring admission, droplet/contact infection precautions are adequate.
 - Health care providers should consider delaying routine antepartum care appointments for women who have or are being tested for COVID-19. Self-quarantine as per local protocols is appropriate.
 - The use of N95 respirators is only required for aerosol-generating procedures (e.g., intubation). The duration and discontinuation of precautions should be determined in accordance with Public Health Agency of Canada guidelines,[15] and provincial and territorial guidance.
 - Health care providers can consider empiric antibiotic therapy for superimposed bacterial pneumonia in women with confirmed COVID-19 infection or severe respiratory disease. First-line antibiotics are oral amoxicillin for stable patients and ceftriaxone for severe disease, based on general recommendations for the management of pneumonia.
 - For maternal surveillance, close monitoring or initiation of an obstetrical early warning system is appropriate.
 - Initiation of antepartum corticosteroids for fetal maturation could be considered as per current guidelines[16] if preterm delivery is indicated or anticipated based on maternal condition.
- Antepartum fetal surveillance of confirmed cases of COVID-19 should occur monthly and include fetal ultrasound assessment for growth and anatomy.

Intrapartum Care

- Droplet/contact precautions should be used, including wearing a surgical mask with eye protection, a gown, and gloves.
- Use of N95 respirators should be reserved for aerosol-generating procedures (e.g., intubation).
- Unnecessary health care personnel in the room should be minimized.
- It is advisable to limit the presence of symptomatic family and household contacts in the delivery suite and visitation should be permitted in accordance with locally developed infection prevention and control protocols.
- Intrapartum fetal monitoring in the form of EFM should be considered given evidence showing fetal distress during labour.
- Cesarean delivery should be reserved for obstetrical indications.
- There is no data to indicate that the second stage of labour generates aerosols and, as such, droplet/contact precautions are sufficient for vaginal delivery.
- Given that intubation is considered an aerosol-generating procedure, the surgical team should wear N95 respirators for cesarean delivery in case there is a need to convert from neuraxial to general anesthesia.
- There is no evidence to avoid delayed cord clamping or to encourage early cleansing of the infant.

- Routine practices such as skin-to-skin contact (with the mother wearing a mask and after having washed her hands) and delayed cord clamping should continue.
- Elective cesarean delivery should be delayed, if possible, until a woman is no longer considered infectious.
- Appropriate patient transfer planning should be made so as to minimize exposure of other patients in the hospital.
- Hospital birth is preferred to home birth for women who have or are being tested for COVID-19, in light of the challenges associated with ensuring appropriate personal protective equipment in the home setting and the high rates of fetal distress that reported in the literature.
- Regardless of the gestational age at which a pregnant woman was infected COVID-19, the newborn infant should be tested for COVID-19 at birth (i.e., nasopharyngeal swab and umbilical swab for COVID-19 polymerase chain reaction)
- **Postpartum and Newborn Care**
Management in the post-partum period should be guided by a patient-centred discussion about the available evidence and its limitations.
- We do not recommend universal isolation of the infant from either confirmed or suspected infection in the mother. However, depending on a family's values and availability of resources they may choose to separate infant from mother until isolation precautions for the mother can be formally discontinued.
- Women should practice good handwashing before and wear a mask while providing infant care.
- Women who choose to breastfeed should be allowed to do so after appropriate handwashing and while wearing a mask. It is possible that the mother can transmit antibodies to the infant through breastmilk; however, there is limited evidence of this transmission and the potential benefits are unclear.

CONCLUSION

In the current COVID-19 pandemic the unique needs of pregnant women and their fetuses/newborns need to be addressed. As with any epidemic, data are evolving and a measured approach to management is required. Based on this evidence to date on COVID-19 as well as the literature on outbreaks of SARS, MERS and other emerging pathogens, the SOGC's Infectious Disease Committee has created this committee opinion to help guide maternity care providers in the care of pregnant women. This guidance is based on the evidence to date and will continue to be updated as more information emerges.

SUPPLEMENTARY RESOURCE

A supplementary resource can be found in the Online Appendix.

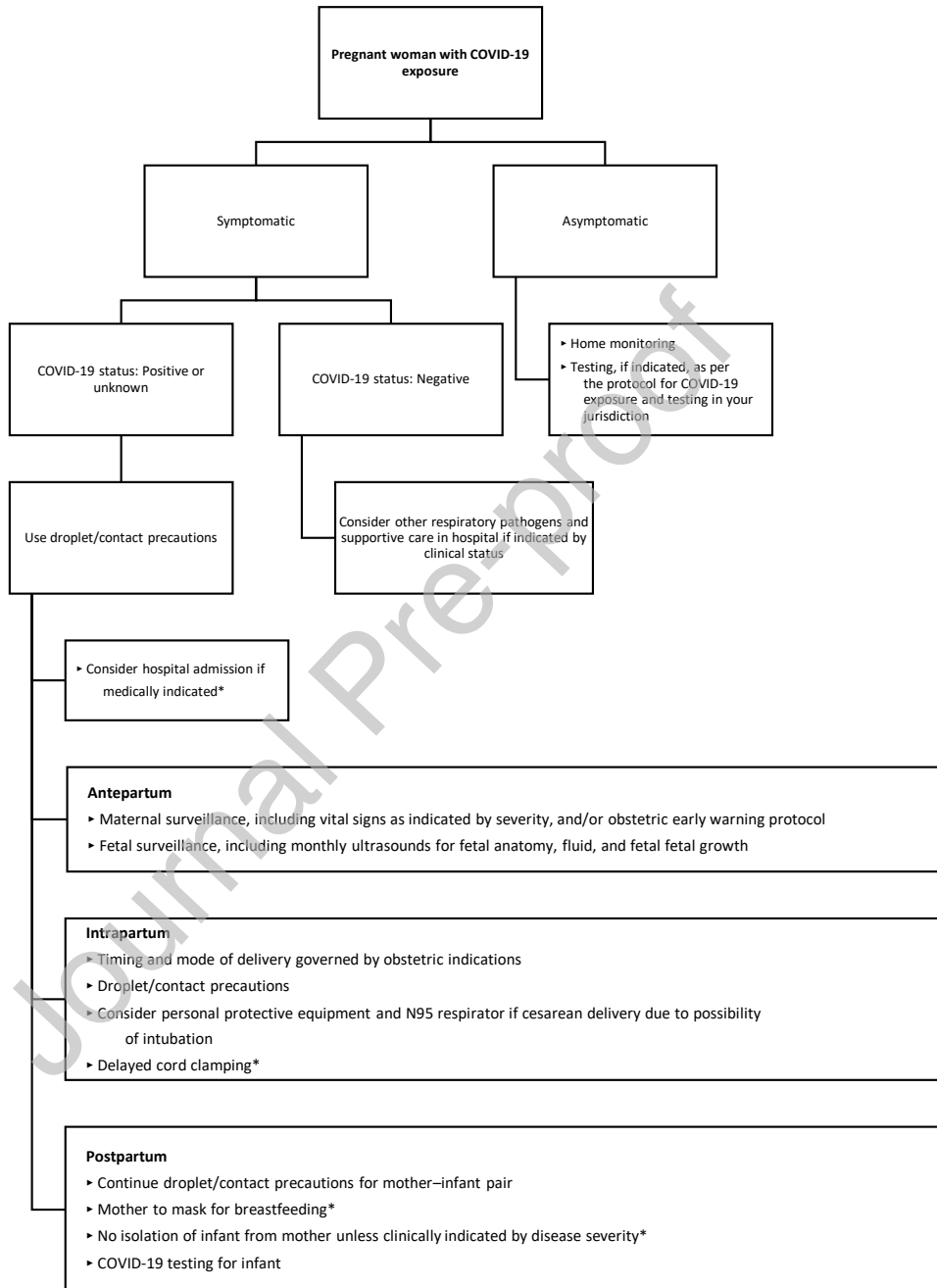
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SOGC Recommendations: COVID-19 and Pregnancy



* Decisions related to separation of mother and baby, breastfeeding, and delayed cord clamping should be made in collaboration with the patient and her family and take into consideration available evidence and patient's values.