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Association between COVID-19 infection at the time of admission for birth and adverse pregnancy outcomes: evolving evidence to aid decision making

Check for updates

We welcome the comment by Knight et al[1,2] on our paper. We accept the argument that misclassification may play a role in the association we found between SARS-CoV-2 positivity at the time of admission for birth and some adverse pregnancy outcomes, including stillbirth and preeclampsia. Indeed, we paid significant attention to this point in our comment on the findings in our paper, highlighting throughout that we found an association between infection status at the time of admission and these adverse outcomes. In other words, this was a cross-sectional study that we recognize cannot prove causality.

However, as we discussed in our paper, we believe it unlikely that misclassification entirely explains this association. First, throughout the pandemic, there was a statutory requirement to report cases of SARS-CoV-2 infection in healthcare settings. Second, the laboratory-confirmed SARS-CoV-2 infection rate that we observed in women giving birth is very close to that reported for people aged between 25 and 35 years in a contemporaneous national survey of households. Third, although women infected earlier in pregnancy are not included in our "exposed" cohort, this is the case to the same extent for women who had a "good" as for those who had an adverse outcome. Therefore, the conclusion by Knight et al that misclassification may entirely explain the findings seems improbable. Instead, it is likely that SARS-CoV-2 infection at any time during pregnancy increases the risk of stillbirth, but that the odds ratio for that effect lies somewhere between 1.0 and the 2.21 that we reported.

Our study is just part of a growing body of evidence suggesting that SARS-CoV-2 infection increases the risk of stillbirth and certain other adverse pregnancy outcomes, although it remains uncertain how big this effect is.[3] We agree that there is a pressing need for a prospective cohort study, based on time-to-event analyses of testing women regularly during their pregnancy, to determine whether this association is causal and accurately assess its strength.

Although we agree that it is important to avoid causing unnecessary anxiety to pregnant women and their families, we believe that it would be a disservice to women to downplay this growing evidence of a link between COVID-19 and stillbirth and other adverse pregnancy outcomes. While awaiting conclusive evidence from a further study, which may take considerable time, we should encourage pregnant women to take the current evidence into consideration when deciding whether to accept an offer of COVID-19 vaccination that has the potential to protect both them and their babies. ■

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The incorporation of telehealth in high-risk pregnancy follow-up needs tailored optimized care scheduled in a strict care protocol

Check for updates

TO THE EDITORS: Peahl et al[1] recently reported their evaluation of patient and provider experiences with a COVID-19 prenatal care model incorporating telehealth and virtual visits. These authors found "perceived improved access to care" through decreased barriers and "perceived high quality of virtual visits" for low-risk patients. However, these authors also reported that across the pre- and post-implementation periods, the average total visit volume (including both in-person and virtual prenatal visit utilization) de facto fell (−16.1%), which is not in accordance with the perception of patients and providers, and can be of concern. Because Peahl et al[1] did not define strict inclusion criteria for their prenatal care model and did not address health outcomes, we believe that the conclusion of their study may be misleading.

Indeed, from a meta-analysis of studies pooling data from 198,993 pregnancies before and 168,295 during the pandemic, respectively, Chmielewska et al[2] recently evidenced a significant increase (1.37 [1.22−1.53]) in maternal death that was mainly driven by a reduced access to care and not by direct effect of COVID-19 in pregnant women.

In actuality, Peahl et al[1] mainly based their prenatal care model on the low-risk schedule "with additional visits and services as appropriate."

However, only a strict monitoring protocol, depending on the specific risk involved, can meet the needs for high-risk pregnancies, in a rigorous approach specifically tailored for each condition placing patients at higher risk of adverse maternal or neonatal outcomes.[3] For the purpose of maintaining close follow-up for high-risk pregnant women during the first wave of the pandemic in New York, Aziz et al[3] organized prenatal care in a telehealth framework, allowing to eliminate "approximately one-half of in-person visits for low-risk patients," but they detailed recommendations scheduled for high-risk pregnancies, pathology by pathology. Indeed, the separation between high and low risk remains challenging: Butler Tobah et al[4] randomized low-risk women to an "OB Nest" protocol or usual care (150 in each arm) using a minimization algorithm excluding women with various high-risk conditions or if "obstetrician judgment determined that the pregnancy was at high risk for complications." Study team clinicians were aware of the assigned arms and used study exclusion criteria if a high risk appeared later. In this strict context, these authors found that maternal and fetal clinical outcomes were similar between groups.

However, Peahl et al[1] did not define their inclusion criteria in such a strict manner. ■

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