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Repeat positive severe acute respiratory syndrome coronavirus 2 (coronavirus disease 2019) testing ≥ 90 days apart in pregnant women



OBJECTIVE: Coronavirus disease 2019 (COVID-19) is currently the leading cause of death in the United States.¹ Identifying pregnant patients infected with the COVID-19 may decrease transmission rates to their baby, their family, healthcare providers, and the community. Many people currently believe that a previous COVID-19 infection (or vaccination against it) confers immunity against future infection. However, cases of repeat COVID-19 infection have been reported. The Centers for Disease Control and Prevention (CDC) has recently published criteria to investigate suspected reinfection.² We have identified several pregnant women with repeat positive severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (COVID-19) testing ≥ 90 days apart.

STUDY DESIGN: Recommended COVID-19 testing upon admission to labor and delivery (L&D) for delivery was implemented at our institution in April of 2020. Testing using a nasopharyngeal swab was performed using the Abbott M2000 Reverse Transcriptase Polymerase Chain Reaction for SARS-CoV-2. Given the high specificity of the Abbott test, confirmatory testing was not performed by our laboratory. As part of a quality assessment initiative to track testing results, our study was deemed institutional review board exempt. Entered information included any possible COVID-19 related symptoms and previous COVID-19 test results.

RESULTS: Between April 12, 2020, and October 31, 2020, 1257 of 1516 pregnant women (83%) admitted to L&D of Einstein Medical Center Philadelphia for delivery agreed to testing for SARS-CoV-2. Of those, 45 (4%) tested positive for SARS-CoV-2. Only 4 of the 45 infected pregnant women (9%) at admission for delivery were symptomatic. Notably, 3 of the 45 (7%) women infected at delivery had previous SARS-CoV-2 tests that were positive ≥ 90 days (106, 116, and 151 days) previously. All 3 patients who received repeat positive results were asymptomatic at the time of delivery, but 2 had upper respiratory infection symptoms at the time of their initial positive test. It is unknown why the asymptomatic patient was initially tested. None of the neonates of mothers

with repeat COVID positive testing had any identifiable related adverse effects.

CONCLUSION: The 7% of pregnant patients (3 of 45) with repeat positive COVID-19 test results ≥ 90 days apart may have had reinfection, infection with a different viral strain, or persistent infection. Because viral genotyping, which is rarely done in the clinical setting, was not performed, it cannot be determined whether different strains were present; however, this has not been reported in our area. Persistent infection is unlikely, because the median duration of viral RNA shedding has been reported to be 18 days.³ False positive SARS-CoV-2 testing in all 3 patients is also unlikely given the manufacturer's reported negligible rate.⁴ In addition, the sensitivity and specificity of the test used were reported as 93% and 100%, respectively.⁵ Thus, these 3 patients were most likely reinfecting with COVID-19. The CDC has recommended that testing inside of 90 days for an asymptomatic patient not occur. Therefore, an asymptomatic patient who tests positive again after 90 days is treated as a new infection despite the fact that we are unable to provide factual evidence.² From an obstetrical point of view, this impacts workflow regarding appropriate utilization of personal protective equipment, support person restrictions, and pediatric care.⁶ Previous COVID-19 infection in pregnant women may not provide immunity to future infection. This may have larger implications as vaccination against SARS-CoV-2 is implemented. Further analysis with a larger number of patients and genotyping on repeat positive test samples would better define the true incidence of COVID-19 reinfection in pregnancy. ■

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The authors report no conflict of interest.

Cite this article as: Dubelbeiss E, Silverberg M, White C, et al. Repeat positive severe acute respiratory syndrome coronavirus 2 (coronavirus disease 2019) testing ≥ 90 days apart in pregnant women. *Am J Obstet Gynecol MFM* 2021;3:100331.

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