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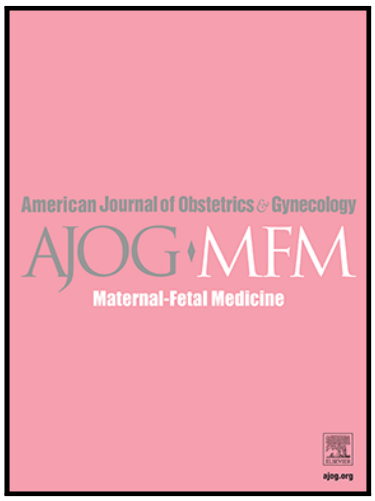

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Repeat positive SARS-CoV-2 (COVID-19) testing ≥ 90 days apart in pregnant women.

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Dear Editor:

COVID-19 is currently the leading cause of death in the United States.[1] Identifying pregnant patients infected with the 2019 novel coronavirus disease (COVID-19) may decrease transmission rates to their baby, their family, healthcare providers, and the community. Many people currently believe that a prior COVID-19 infection (or vaccination against it) confers immunity against future infection. Cases of repeat COVID-19 infection, however, have been reported. The CDC has recently published criteria to investigate suspected reinfection.[2] We have identified several pregnant women with repeat positive SARS-CoV-2 (COVID-19) testing ≥ 90 days apart.

Methods

Recommended COVID-19 testing upon admission to 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 lab. As part of a quality assessment initiative to track testing results, our study was deemed IRB exempt. Entered information included any possible COVID-19 related symptoms and prior COVID-19 test results.

Results

Between 4/12/20 and 10/31/20, 1,257 of 1,516 (83%) pregnant women 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 (9%) of the 45 infected pregnant women at

admission for delivery were symptomatic. 3 of the 45 (7%) women infected at delivery had prior SARS-CoV-2 tests that were positive ≥ 90 days (106, 116, and 151 days) previously. All three patients with repeat positive results were asymptomatic at the time of delivery, but two 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.

Discussion

The 7% (3/45) of pregnant patients with repeat positive COVID-19 test results ≥ 90 days apart may have had reinfection, infection with a different viral strain or persistent infection. As viral genotyping, which is rarely done in the clinical setting, was not performed, it cannot be determined if different strains were present, however, this has not been reported in our area. Persistent infection is unlikely as the median duration of viral RNA shedding has been reported to be 18 days.[3] False positive SARS-CoV-2 testing in all three patients is also unlikely given the manufacturer's reported negligible rate.[4] Additionally, the sensitivity and specificity of the test used were reported as 93% and 100%, respectively.[5] Thus, these three patients were most likely reinfected 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 PPE, support person restrictions, and pediatric care.[6] Prior 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, as well as genotyping on repeat positive test samples, would better define the true incidence of COVID-19 reinfection in pregnancy.

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