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Repeat SARS-CoV-2 testing after recovery. Is a pretransplant PCR necessary?

To the Editor:

The emergence of SARS-CoV-2 and the clinical syndrome of COVID-19 resulted in a major decrease in transplant volumes during the first months of the pandemic followed by a change in practice, with strict screening and SARS-CoV-2 PCR testing prior to transplant. Protocols required a negative SARS-CoV-2 PCR prior to proceeding with transplantation. Many transplants were delayed nationwide due to persistent positive PCRs in asymptomatic patients, sometimes for months.[1]

Currently the Centers for Disease Control and Prevention does not routinely recommend a test of cure to determine when isolation for COVID-19 can be discontinued.[2] For patients with mild to moderate COVID-19, replication-competent virus has not been recovered after 10 days following symptoms.[3,4] Recovery of replication-competent virus between 10 and 20 days after symptom onset has been documented in some patients with severe COVID-19 and immunocompromised patients.[5]

Here we report a case of a 64-year-old white female with stage 5 chronic kidney disease secondary to Alport's syndrome. She works at a nursing home and tested positive for SARS-CoV-2 by the rapid qualitative antigen test (using the Sofia SARS antigen FIA kit) 24 h after developing body aches and fever. She never developed any respiratory symptoms and her fever subsided within 1 day without any specific therapy. Six weeks later, she was called for a deceased donor kidney transplant organ offer.

As part of our workup upon admission to the hospital, a nasopharyngeal specimen was collected for SARS-CoV-2 testing, which was positive. Cycle threshold (CT) values on the Roche cobas SARS-CoV-2 assay for the *ORF1a/b* and *E* gene targets were 35.5 and 30.3, respectively (for our laboratory a CT of <38 and <45 is considered positive for the respective gene targets). It has been shown that CT values >30 indicate low viral load.[6] Since she was asymptomatic for more than 6 weeks, negative chest X-ray, and had a high cycle threshold on PCR, we believe that this was a detection of residual SARS-CoV-2 RNA in the absence of active infectious viral particles. Given the assessment that active viral replication was unlikely, we proceeded with a kidney transplant with 3 mg/kg of thymoglobulin as induction. After the procedure, the patient was placed in the regular transplant floor without COVID-19 restrictions. She has been maintained on triple immunosuppression therapy as per our standard protocol with prednisone, mycophenolate mofetil, and tacrolimus. Our trough goals have been 7–10 ng/ml for the first month, and 5–7 ng/ml since then. She remains asymptomatic without any fever or signs of infections at a 4-month follow-up from the time of transplantation.

This is the first case of a patient with a past history of COVID-19 and detectable SARS-CoV-2 RNA by PCR at the time of kidney transplantation with thymoglobulin induction. A similar scenario was reported in a liver transplant candidate with positive COVID-19 testing at the time of transplant. Patient was asymptomatic and had a prior COVID-19 exposure 6–10 weeks earlier. Patient underwent liver transplant without any reported infectious complications.[7] Our case highlights kidney transplantation may be safely carried out in asymptomatic patients with a persistently positive SARS-CoV-2 PCR. A limitation of our case is the absence of a posttransplant COVID-19 PCR, and a relatively short 4-month follow-up. Based on this case and current literature, our transplant center changed its policy of re-testing patients who have been diagnosed with COVID-19. Patients are placed active on the list if they are 6 weeks from the initial positive COVID-19 and at least 4 weeks without symptoms. Patients will not be tested again with another PCR before transplant if they are within 3 months from the initial positive test. Additional experience in a larger patient group and non-kidney transplantation are needed to determine the safety of this approach.

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clinical research/practice, infection and infectious agents – viral, infectious disease, kidney transplantation/nephrology, patient safety, recipient selection

DISCLOSURE

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