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## LETTER TO THE EDITOR

# Kidney transplant with positive SARS-CoV-2 PCR: An avoidable risk

## To the Editor:

We read with interest the paper published by Murad et al.,<sup>1</sup> which has raised some issues that we would like to discuss.

We reported the first case in Spain of a kidney transplant (KT) recipient who developed COVID-19 before KT. Once the infection had resolved and the PCR was negative, he was included on the waiting list and transplanted 3 months later.<sup>2</sup> Four more KT recipients with a previous history of SARS-CoV-2 infection have been described. In most cases, including our patient, several consecutive negative PCRs were required before KT, and, in all, a negative result was provided immediately prior to the procedure.<sup>2</sup> Additionally, another patient with a positive PCR underwent liver transplantation due to acute liver failure, but in this case the transplant was urgent.<sup>3</sup>

SARS-CoV-2 PCR performed on a nasopharyngeal swab has up to 40% false-negative results, so one single negative test does not confirm the absence of infection. SARS-CoV-2 PCR has an important limitation in that it does not distinguish between infectious and noninfectious virus. Likewise, several studies suggest that the cycle threshold (CT) should not be used as the only tool to identify patients who may be infectious, since it has been demonstrated that viral growth could be obtained with a high CT. The probability of recovering virus from samples with CT >35 was about 8%, and no relationship was observed between CT value and symptoms.<sup>4</sup> KT is rarely an urgent procedure so, taking into account these recommendations, we decided to postpone the transplant in our patient until recovery had been confirmed with negative PCR.

Furthermore, in the case presented by Murad, no post-KT PCR was performed and the patient was placed in the regular transplant floor without COVID-19 restrictions. Hospital-acquired infection is associated with a greater mortality, probably because this subgroup has a higher comorbidity burden.<sup>5</sup> In September 2020, at the beginning of the second wave in Spain, we identified a cluster of COVID-19 cases in our inpatient unit. The outbreak began in a patient with negative PCR on admission. After this first nosocomial case, we performed PCRs every 72 hours in our hospitalized patients, finally detecting seven SARS-CoV-2-positive cases after a mean of 2.7 PCR tests. The mortality rate was 57.1%. Therefore, we recommend close monitoring of SARS-CoV-2 infection by PCR during the pandemic (we perform PCR before admission and weekly during hospitalization), in addition to the use of personal protection equipment, visiting restrictions, and private rooms if possible. To date, no other hospital-acquired COVID-19 cases have been identified.

Performing a transplant in a patient with a positive SARS-CoV-2 PCR may be an avoidable risk, unless the procedure is urgent or in more difficult-to-match patients, such as very highly sensitized recipients. Therefore, since the infection is more severe in transplant patients, especially if it develops during hospitalization, we believe that we must be cautious and minimize possible risks in the interests of the safety of the recipient and the rest of the transplant unit.

## KEYWORDS

clinical research/practice, infectious disease, kidney transplantation/nephrology, patient safety, patient survival

## DISCLOSURE

The authors of this manuscript have no conflicts of interest to disclose as described by the *American Journal of Transplantation*.

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## REFERENCES

1. Murad H, Dubberke E, Mattu M, et al. Repeat SARS-CoV-2 testing after recovery. Is a pre-transplant PCR necessary? *Am J Transplant.* 2021. <https://doi.org/10.1111/ajt.16506>. Online ahead of print.
2. Villanego F, Vigara LA, Torrado J, et al. SARS-CoV-2 infection on the kidney transplant waiting list: can a patient be transplanted after COVID-19? *Nefrologia.* 2021;S0211-S6995(21):1. <https://doi.org/10.1016/j.nefro.2020.12.003>. Online ahead of print.
3. Roupael C, D'Amico G, Ricci K, et al. Successful orthotopic liver transplantation in a patient with a positive SARS-CoV2 test and acute liver failure secondary to acetaminophen overdose. *Am J Transplant.* 2021;21(3):1312-1316. <https://doi.org/10.1111/ajt.16330>.
4. Romero-Gómez MP, Gómez-Sebastian S, Cendejas-Bueno E, et al. Ct value is not enough to discriminate patients harbouring infective virus. *J Infect.* 2020;S0163-S4453(20):30675-30677. <https://doi.org/10.1016/j.jinf.2020.10.017>. Online ahead of print.
5. Coll E, Fernández-Ruiz M, Sánchez-Álvarez JE, et al. COVID-19 in transplant recipients: the Spanish experience. *Am J Transplant.* 2021;21(5):1825-1837. <https://doi.org/10.1111/ajt.16369>.