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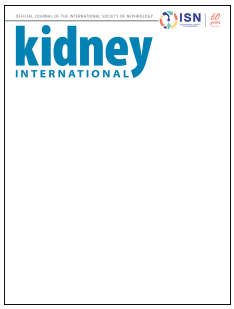

Better Late than Never: Eventual Seroconversion against SARS-CoV-2 in a Kidney Transplant Recipient after Repeated Immune Challenge and Monoclonal Antibody Therapy.

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PII: S0085-2538(21)00825-5

DOI: https://doi.org/10.1016/j.kint.2021.08.018

Reference: KINT 2750

To appear in: *Kidney International*

Received Date: 12 July 2021

Revised Date: 24 August 2021

Accepted Date: 26 August 2021

Please cite this article as: De Greef J, Devresse A, Albichr IS, Scohy A, Kanaan N, Georgery H, Belkhir L, Kabamba B, Yombi JC, Goffin E, Better Late than Never: Eventual Seroconversion against SARS-CoV-2 in a Kidney Transplant Recipient after Repeated Immune Challenge and Monoclonal Antibody Therapy., *Kidney International* (2021), doi: https://doi.org/10.1016/j.kint.2021.08.018.

Better Late than Never: Eventual Seroconversion against SARS-CoV-2 in a Kidney Transplant Recipient after Repeated Immune Challenge and Monoclonal Antibody Therapy.

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Keywords: SARS-CoV-2, Monoclonal Antibody

Funding: none

Disclosures: none

Kidney transplant recipients (KTRs) are disproportionately affected by COVID-19. In addition to limited therapeutic options, concerns have arisen regarding poor vaccine efficacy in this population.[1]

We report the case of a 64-year-old KTR treated with an association of tacrolimus, mycophenolate mofetil (MMF) and steroids who developed a second SARS-CoV-2 infection one year after a first COVID-19 episode, and 55 days after receiving his second BNT162b2-mRNA vaccine injection. Three days after the onset of isolated fever, high viral load of SARS-CoV-2 gamma variant was detected through RT-PCR in a nasopharyngeal swab (Table 1). MMF was interrupted and intravenous monoclonal antibodies (casirivimab 1200mg and imdevimab 1200mg, Regeneron, USA) therapy was given. Clinical and virological evolutions were favorable: viral load decreased <1000 copies/mL on day 8 and was eventually negative on day 28 after perfusion (Table 1). Interestingly, an anti-N native antibody seroconversion was observed on day 28 (Table 1). Notably, three serologic tests had been performed before the second SARS-CoV-2 infection (including one 43 days after the second vaccine dose injection) and were all negative for both anti-N and anti-RBD antibody.

Anti-SARS-CoV-2 monoclonal antibodies have shown promising effects in COVID-19[2], and preliminary results suggest efficacy in preventing severe disease after solid organ transplantation.[3] Our patient eventually mounted a natural immunity against SARS-CoV-2 in a context of repeated previous immune challenges and immunosuppression tapering. The effect of passive immunization on the development of protective immunity remains unknown.[4] Whether monoclonal antibodies infusion has promoted the development of natural immunity against SARS-CoV-2 remains to be investigated.

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Table 1: Evolution of SARS-CoV-2 viral load and anti-SARS-CoV-2 antibody titers after monoclonal antibodies therapy

	Day 0	**Day 8**	**Day 28**
Viral load (copies/mL)	10 264 225	570	0
Anti-N antibody (index)	0.083	0.221	7.74
Anti-RBD antibody titer (U/mL)	0.701	57 753	40 135

Day 0= day of monoclonal antibodies perfusion.
Positivity thresholds: anti-N antibody ≥1, anti-RBD antibody ≥0.8 U/mL (upper detection limit of the assay: 250 U/mL).