

LETTER TO THE EDITOR

Response to Letters regarding “Re-infection with SARS-CoV-2 in solid-organ transplant (SOT) recipients: Incidence density and convalescent immunity prior to re-infection”

Dear Editor,

We would like to reply to the letter from Sookaromdee and Wiwanitkit¹ concerning our publication “Re-infection with SARS-CoV-2 in solid-organ transplant (SOT) recipients: Incidence density and convalescent immunity prior to re-infection.”²

We thank the authors for their letter, which highlights a major knowledge gap in both normal and compromised hosts—the incidence of severe acute respiratory syndrome coronavirus 2 re-infection with Omicron-lineage variants. Our retrospective study was conducted prior to Omicron-lineage viruses, which have shown stronger immune evasion characteristics compared to prior variants in mechanistic studies and large cohort studies in the general population.³ Since preformed humoral immunity is crucial to prevent infection, we expect the incidence of re-infection to be much higher in the Omicron-lineage era than prior.

Many Omicron-lineage infections are asymptomatic in the general population⁴ and likely in many SOT recipients as well since disease severity among SOT recipients is also lower compared to prior variants.⁵ However, the true burden of asymptomatic infections and re-infections have not been well characterized with recent variants—in either SOT recipients or normal hosts. Such outcomes are not tracked by many health departments or CDC and many mild infections may not even be reported if obtained via at-home testing.

Studying asymptomatic re-infections would be very resource intensive, requiring a prospective study design with nasopharyngeal PCR testing coupled with whole genome sequencing. The more clinically relevant outcome for the patient and health system is symptomatic re-infections that trigger a medical encounter. These patients would be most likely to benefit from monoclonal antibody or oral anti-viral therapies. Additionally, comparisons with the general population would be more feasible as discussed above.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FUNDING INFORMATION

The authors received no specific funding for this work.

Stephen Morris¹

Giselle Guerra^{2,3} 

Yoichiro Natori^{1,2} 

¹Division of Infectious Disease, Department of Medicine, University of Miami Miller School of Medicine, Miami, Florida, USA

²Miami Transplant Institute, Jackson Health System, Miami, Florida, USA

³Division of Nephrology, Department of Medicine, University of Miami Miller School of Medicine, Miami, Florida, USA

Correspondence

Yoichiro Natori, Division of Infectious Diseases, University of Miami Miller School of Medicine, Miami Transplant Institute, Jackson Health System, 1801 N.W. 9th Ave., Suite 733, Miami, FL 33136, USA.

Email: yxn138@med.miami.edu

KEYWORDS

SARS-CoV-2, Re-infection, Solid Organ Transplant

ORCID

Giselle Guerra  <https://orcid.org/0000-0002-4098-4652>

Yoichiro Natori  <https://orcid.org/0000-0002-4938-125X>

REFERENCES

1. Sookaromdee P, Wiwanitkit V. Comment on “Re-infection with SARS-CoV-2 in solid-organ transplant recipients”. *Transpl Infect Dis*. 2022. <https://doi.org/10.1111/tid.13838>
2. Morris S, Anjan S, Pallikkuth S, et al. Re-infection with SARS-CoV-2 in solid-organ transplant recipients: incidence density and convalescent immunity prior to re-infection. *Transpl Infect Dis*. 2022. <https://doi.org/10.1111/tid.13827>
3. Johnson AG, Amin AB, Ali AR, et al. COVID-19 incidence and death rates among unvaccinated and fully vaccinated adults with and without booster doses during periods of Delta and Omicron variant emergence—25 U.S. jurisdictions, April 4–December 25, 2021. *MMWR Morb Mortal Wkly Rep*. 2022;71(4):132–138. <https://doi.org/10.15585/mmwr.mm7104e2>
4. Garrett N, Tapley A, Andriesen J, et al. High asymptomatic carriage with the Omicron variant in South Africa. *Clin Infect Dis*. 2022;ciac237. <https://doi.org/10.1093/cid/ciac237>
5. Cochran W, Shah P, Barker L, et al. COVID-19 clinical outcomes in solid organ transplant recipients during the Omicron surge. *Transplantation*. 2022. <https://doi.org/10.1097/TP.0000000000004162>