Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

DOI: 10.1111/ajt.16710

Reduced humoral response to mRNA SARS-CoV-2 BNT162b2 vaccine in kidney transplant recipients without prior exposure to the virus: Not alarming, but should be taken gravely

To the Editor:

We greatly appreciate the time taken by S. Mossad[1] to point out issues that are crucial in the field of transplant recipients' vaccination.

The SARS-CoV-2 vaccines have been widely endorsed by solid organ transplant societies and are recommended with a high priority to all transplant recipients and their immunocompetent household members.[2] Nevertheless, there is a concern related to a potential reduction in the efficacy of the vaccine due to the chronic immunosuppression state.

We agree with S. Mossad that reduced response to vaccination in transplant recipients is not surprising, hence, his statement that our results are "no cause for alarm" is even more inconsistent. Our study is the first step of urgently needed data acquisition in the area of immune response to SARS-CoV-2 vaccine in transplant recipients, with a focus on the humoral part of the response. Cellular and humoral immune response are interrelated parts of protective immune response and the importance of both parts should not be underestimated. Although our study does not cover the full spectrum of vaccine-induced immune response, our results demonstrated a clear decline in anti-spike neutralizing antibody production in kidney transplant recipients, while similar recent studies done on healthy health-care workers[3–5] or end-stage renal disease patients on chronic dialysis treaments[4,5] demonstrate positive antibody response in more than 95%.

The aims of our study were not only to highlight the decreased humoral response in immunocompromised patients, but, and not less importantly, to define the most vulnerable individuals among kidney transplant recipients (i.e., older age, triple immunosuppression, high-dose steroid treatment, regimen that includes MMF). Those patients should be the target for implementation of potential strategies to improve vaccine immune response. Our findings were not identical to the cohorts with reduced immune response to other vaccines, as cited by S. Mossad.[1]

We believe that building confidence in the COVID-19 vaccine should be based on further data acquisition from all the immune response pathways, but until then, vaccinated transplant recipients should not assume immunity before precise testing of immune response and should be advocated to continue adherence to diligent mask use, hand hygiene, and social distancing.

KEYWORDS

clinical research / practice, complication: infectious, infectious disease, kidney transplantation / nephrology, vaccine

DISCLOSURE

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

Ayelet Grupper
Helena Katchman

Organ Transplantation Unit, Tel-Aviv Medical Center Tel-Aviv, Israel and Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel
Email: ayeletg@tlvmc.gov.il

ORCID

Ayelet Grupper https://orcid.org/0000-0002-5590-9428

REFERENCES

1. Mossad S. Reduced humoral response to mRNA SARS-Cov-2 BNT162b2 vaccine in kidney transplant recipients without prior exposure to the virus. No cause for alarm. *Am J Transplant*. 2021;https://doi.org/10.1111/ajt.16687
2. American Society of Transplantation COVID-19 Vaccination Guidance. http://www.myast.org/sites/default/files/AST-COVID-PtVaccine-3.18.21-final.pdf. Accessed March 21, 2021.
3. Favresse J, Bayart JL, Mullier F, et al. Early antibody response in healthcare professionals after two doses of SARS-CoV-2 mRNA vaccine (BNT162b2) [published online ahead of print]. *Clin Microbiol Infect*. 2021;S1198-743X(21)00224-X.
4. Grupper A, Sharon N, Finn T, et al. Humoral response to the Pfizer BNT162b2 vaccine in patients undergoing maintenance hemodialysis [published online ahead of print]. *Clin J Am Soc Nephrol*. 2021.
5. Yanay NB, Freiman S, Shapira M, et al. Experience with SARS-CoV-2 BNT162b2 mRNA vaccine in dialysis patients [published online ahead of print]. *Kidney Int*. 2021:S0085-2538(21).