Received: 12 July 2022 | Accepted: 13 July 2022

DOI: 10.1111/liv.15369

Liver INTERNATIONAL WILEY

LETTER TO THE EDITOR

Vaccination against SARS-CoV-2 in liver transplant recipients: The game is still long and the outcome is uncertain

Dear Editor,

We thank Dr Sookaromdee et al. for the positive comments on our paper.[1] We demonstrated that a positive anti-SARS-CoV-2-s-RBD antibody response after the third BNT16b2 vaccine dose was detected in more than 90% of liver transplant patients (LT), and more than 80% of them developed a median antibody titre >100 U/ml. After a median post-vaccination follow-up of 4 months, a very low rate of SARS-CoV-2 symptomatic infections were recorded and, more importantly, all of them presented a benign clinical outcome. In the pre-vaccination era, mortality rate in LT patients due to SARS-CoV-2 infection was 19%, and 30% of patients required intensive care.[2] These differences strongly confirm the indisputable clinical utility of anti-SARS-CoV-2 vaccination in LT patients. We agree with Dr. Sookaromdee et al. that some of our patients may have had an asymptomatic SARS-CoV-2 infection, since they were not periodically tested by RT-PCR on nasopharyngeal swabs. After the third dose of BNT16b2 vaccine, about two thirds of infections in immunocompetent patients are asymptomatic, but they can be transmitted to others.[3] It is not known whether immunosuppressed patients may have a higher rate of asymptomatic infections or can transmit the infection more easily or for a longer period. Thus, studies focusing on this issue are urgently needed in LT patients. A further challenging topic is to evaluate the efficacy of the third vaccine dose in protecting LT patients for both the disease and the infection caused by new Omicron subvariants. In immunocompetent patients, SARS-CoV-2 BA.1, BA.2, BA.2.12.1 and XD spike variants have an increased propensity to evade neutralizing antibodies induced by three doses of BNT162b2 vaccine, and that BA.4/5 variants are much less efficiently neutralized by the vaccine.[4] It can be hypothesized that the vaccine-induced immunogenicity against these emerging viral variants may be further reduced in immunosuppressed patients. Recent data indicate that the administration of a fourth BNT162b2 vaccine dose in immunocompetent patients was associated with high protection against hospitalizations and deaths during a surge associated with the Omicron variants.[5] This suggests that LT patients should be prioritized in receiving the fourth anti SARS-CoV-2 vaccination dose, waiting for the efficacy and safety data of the updated versions of the mRNA vaccines. We can conclude that the first half of the match ended in our favour, but the opponent is very dangerous and there is still a lot of time to play to be sure we have won the match.

Pierluigi Toniutto[1]
Annarosa Cussigh[2]
Sara Cmet[2]
Edmondo Falleti[1]

[1]*Hepatology and Liver Transplantation Unit, Department of Specialized Medicine, Udine University Hospital, Udine, Italy*
[2]*Clinical Pathology, Udine University Hospital, Udine, Italy*

Correspondence
Pierluigi Toniutto, Hepatology and Liver Transplantation Unit, Department of Specialized Medicine, Udine University Hospital, Udine, Italy.
Email: pierluigi.toniutto@uniud.it

ORCID

Pierluigi Toniutto https://orcid.org/0000-0002-2566-3041

REFERENCES

1. Toniutto P, Cussigh A, Cmet S, et al. Immunogenicity and safety of a third dose of anti-SARS-CoV-2 BNT16b2 vaccine in liver transplant recipients. *Liver Int*. 2022. doi:10.1111/liv.15331
2. Webb GJ, Marjot T, Cook JA, et al. Outcomes following SARS-CoV-2 infection in liver transplant recipients: an international registry study. *Lancet Gastroenterol Hepatol*. 2020;5(11):1008-1016.
3. Spitzer A, Angel Y, Marudi O, et al. Association of a Third Dose of BNT162b2 vaccine with incidence of SARS-CoV-2 infection among health Care Workers in Israel. *JAMA*. 2022;327(4):341-349.
4. Kurhade C, Zou J, Xia H, et al. Neutralization of omicron sublineages and Deltacron SARS-CoV-2 by 3 doses of BNT162b2 vaccine or BA.1 infection. *Emerg Microbes Infect*. 2022;1-18.
5. Muhsen K, Maimon N, Mizrahi AY, et al. Association of receipt of the fourth BNT162b2 dose with omicron infection and COVID-19 hospitalizations among residents of long-term care facilities. *JAMA Intern Med*. 2022. doi:10.1001/jamainternmed.2022.2658

© 2022 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd.