



Vacunas

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Letter to the editor

Recommendation of a fourth SARS-CoV-2 vaccine dosage in vulnerable individuals, yes or not?



Recomendación de una cuarta dosis de vacuna frente a SARS-CoV-2 en individuos vulnerables: ¿sí o no?

Dear Editor,

Recent studies suggested that even three doses of the Moderna SARS-CoV-2 vaccine could not be able to elicit an adequate immune response in kidney transplant recipient cases.^{1,2} Although administration of the Pfizer and AstraZeneca vaccines might be able to provide a robust immune protective response against the alpha variant, the effectiveness of these vaccines against the delta variant was three to five less than the alpha variant even in immunocompetent individuals.^{3,4} However, the Israel's prime minister Naftali Bennett recommended the fourth dose of the COVID-19 vaccine to health-care workers and people older than 60 years on Jan 2, 2022. Previous reports revealed that seroconversion rate was about 50% in solid organ transplant recipients even after a third dose.⁵ Thus, establishment of long-term immune response in immune-deficient population could be helpful in significant reduction in COVID-19 mortality rate in these vulnerable subjects. Till now, there is doubt about effectiveness of a fourth SARS-CoV-2 vaccine dose for immune-compromised patients.

In recent, Kamar et al., investigated the effectiveness of a fourth dose of Pfizer BioNTech COVID-19 vaccine for recipients of a solid organ transplant in France, they found that a fourth SARS-CoV-2 vaccine dosage was able to elicit a slight upgraded humoral response in participants with a weak response after 3 doses but not in patients with no response after 3 doses.⁶ Alejo et al. showed that a fourth dose of SARS-CoV-2 vaccine could result in increasing immune response in 50% of patients with negative as well as all solid organ transplant recipients with low-positive titers after 3 doses of the Pfizer or Moderna.⁷ In addition, Benotmane et al., recently revealed the high portion (up to 80%) of kidney transplant recipients have a weak immune response after three doses. Meanwhile, a fourth dose of the Moderna vaccine caused a significant increase in neutralizing antibody response against the

delta variant.⁸ Indeed, the evaluation of available documents exhibited that a fourth dose of SARS-CoV-2 vaccine appears to be increased both humoral and cellular-based immunity response even in immune-compromised patients with no response after 3 doses. The results of Abbasi et al. were confirmed by the results of previous reports on the efficacy of a fourth SARS-CoV-2 mRNA-vaccine in promotion of immune response in kidney transplant recipients who have a weak response after 3 doses.⁹

In summary, our report indicated the effectiveness of a fourth SARS-CoV-2 vaccine dose in immune-compromised individuals with a weak antibody response after three doses. In addition, the fourth booster vaccine was well tolerated. However, there is no knowledge regarding durability of antibody levels. On the other hand, seroconversion rate was varied among vulnerable subjects with no response after three vaccine doses. The implementation of hand hygiene, face masking, physical distancing, as well as administration of monoclonal antibodies could be efficient prophylaxis in immune-deficient patients with no response to three doses of SARS-CoV-2 vaccine.

Conflict of interest

None to declare.

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