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Editorial

Vaccinating Our Hemodialysis Patients for COVID-19

All the available evidence support vaccinating end-stage kidney disease (ESKD) patients to protect them from infectious complications, and guidelines advocate counseling these patients on every occasion for vaccination.¹ These patients are at high risk of infection for various reasons such as multiple visits to healthcare facilities, crowded dialysis units, frequent needle pricks, impaired immunity, and blood transfusions. However, these patients do not always mount adequate antibody protection expected from the vaccines; so various modified regimens of vaccinations are recommended.¹ The three recommended vaccines for hemodialysis patients in our unit were – hepatitis B vaccine, pneumococcal vaccine, and influenza vaccine. A small unpublished survey at our dialysis unit found that all the patients had taken hepatitis B vaccine but one-third of the patient had not taken vaccines for pneumococcal and influenza. The lower rate of acceptance of the two vaccines was related to cost issues rather than other concerns.

Recently, vaccination has suddenly become the most popular concern of the patients. This is because we have been living in a chaotic pandemic period that has negatively affected all of us in many different ways and the pandemic appears to be endless with the only hope of vaccine providing adequate protection from the deadly effect of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The government of all the countries are in a race to procure adequate vaccines for their citizens and are obliged to provide them free or with some kind of incentive to all the people.

The ESKD patients are one of the most vulnerable populations as they are at risk of more frequent and severe Corona Virus Disease (COVID-19) and the outcome is unfavourable. Traveling to dialysis units in public vehicles, crowded dialysis units, and exposure to other patients and hemodialysis unit staff put hemodialysis patients up to 20 times higher risk than the general population.² The risk of mortality is also higher among hemodialysis patients.² For these reasons, we have been recommending the patients get the vaccines whenever they are available.

The dialysis patients who are sensitized to the need for vaccination, no doubt, are very receptive and curious about the SARS-CoV-2 vaccine. A nationwide survey of patients on hemodialysis in the United States (US) showed that vaccine hesitancy is lower in these patients (20%)³ than in the general population (35.4%).⁴ If we consider the finding that SARS-CoV-2 vaccine acceptance is almost 24% higher in low-and-middle-income countries than in the US, the acceptance of the vaccine in our hemodialysis patients will tend to be 100% if the cost will not be a factor.

Our government launched the SARS-CoV-2 vaccination program on January 27, 2020, and so far fully vaccinated 11.8% of the population. The available vaccines in Nepal are – Sinopharm (Vero cell) vaccine, Oxford Vaccine, and Janssen vaccine. These vaccines are approved and found to be effective against SARS-CoV-2 infection in the general population. The studies have not included ESKD patients and it's still not known how these vaccines behave in these patients.⁵

Pfizer vaccine is very effective in ESKD patients but not in kidney transplantation patients with some suggesting need for a third booster dose in kidney transplantation patients.^{5,6} The mRNA vaccines are said to be more effective than inactivated and viral-vectored vaccine⁷ but these vaccines are, at the moment, not available to our patients. A very small study in Indian ESKD patients⁸ suggested that ESKD patients benefitted from vaccination including the Oxford vaccine but the study is too weak to be quoted. In a letter to the editor published in *Kidney International*, Boongird et. al. showed some satisfactory responses to Vero cell among ESKD patients.⁹

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Some of the questions we need to seek answers to urgently for ESKD patients are

- Do ESKD patients benefit from the SARS-CoV-2 vaccine available and if they do, which one?
- With the available vaccine and recommended dosage, do ESKD patients mount an adequate response, or should they be modified?
- How long does the protection last and should ESKD patients be offered a booster dose any period after the primary vaccination?
- Should there be any safety concerns for any of the available vaccines?

At present, the patients are content and seem to understand that they need the vaccine more than answers to the questions. In our unit of hemodialysis, only a third of the patients have received the vaccine till now which is due to the unavailability of the vaccine rather than non-acceptance of the vaccine. The disease will stay with us and as we face the challenge, we will come with better tools for protection from the disease. We will understand the tools better and with more studies, we will come up with answers to all these questions.

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Editorial