Answering Reviewers

Dear reviewer,

Thank you for taking the time to review the manuscript.

As regards your comments:

1-

It would be of extra value if the authors added some data regarding the possible impact of vaccination against covid-19, as there are some preliminary data as well as the concerns generated from the application of the vaccines.

We added the following paragraph:

The first covid-19 vaccines were given in the United States in December of 2020. The vaccines used new technology with messenger RNA. These vaccines were originally targeted for the geriatric population and later to those of high risk, eventually making it down to the general public. Amongst this population of high risk were those immunocompromised where those with organ transplants reside.

Many studies were published in regards to this population. Renal function should be closely monitored after the vaccine as there is an increased chance of rejection especially if booster vaccines may be required. [1]. Because this group is immunocompromised there was concern that their body would not be able to elicit an appropriate response to make antibodies. A study published in Kidney International showed that 85% of patients had made the appropriate antibodies in 6 months after the vaccines [2]. Another study in Germany demonstrated 22% of the post renal transplant patients had antibodies, but were only tested 2 weeks out.[3] . The efficacy is not very clear in this immunocompromised population. The best solution would appear to be to get the vaccine, but still abide by other appropriate precautions such as social distancing, face coverings, and hand hygiene.[4]

2-

Regarding the potential effects of various medications used I would recommend updating the paper with a few position papers recently published and making more clear their potential benefits or proven deficiencies.

We added the following phrase with a very recent reference:

In patients who have received the vaccine and had worsening kidney function. Pulsatile steroids were given to a patient who's creatinine was increased and showed marked improvement. [1]

3-

It is also important to mention that regarding tocilizumab there is a risk of overimmunosuppression and flares of latent .CMV infections

We added the following paragraph:

One of the major concerns with patients after transplants is an infection, given the immunocompromised state due to medications. One-third of patients who received tocilizumab had a reactivation of CMV, but this was not much higher than the control group. This is suggestive that the immunocompromised state from the steroids and

critical illness may be more contributory to this viral activation. Thrombotic complications such as venous thrombosis or cerebrovascular events, were also very similar to the control groups. Tocilizumab seems to be safe overall, similar to COVID-19 patients among solid organ transplant and non- solid organ transplant patients[49].
(5)

Citation

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2) Ikizler TA, Coates PT, Rovin BH, Ronco P. Immune response to SARS-CoV-2 infection and vaccination in patients receiving kidney replacement therapy [published online ahead of print, 2021 Apr 20]. *Kidney Int*. 2021;S0085-2538(21)00391-4. doi:10.1016/j.kint.2021.04.007

3) Korth J, Jahn M, Dorsch O, Anastasiou OE, Sorge-Hädicke B, Eisenberger U, Gäckler A, Dittmer U, Witzke O, Wilde B, Dolff S, Kribben A. Impaired Humoral Response in Renal Transplant Recipients to SARS-CoV-2 Vaccination with BNT162b2 (Pfizer-BioNTech). *Viruses*. 2021; 13(5):756. https://doi.org/10.3390/v1305075

4) Basic-Jukic N, Jelicic I. SARS-CoV-2 infection after two doses of mRNA vaccine in renal transplant recipients. Transpl Infect Dis. 2021 Apr 29:e13628. doi: 10.1111/tid.13628. Epub ahead of print. PMID: 33915005.

5) Pereira MR, Aversa MM, Farr MA, Miko BA, Aaron JG, Mohan S, Cohen DJ, Husain SA, Ratner LE, Arcasoy S, Uriel N, Zheng EX, Fox AN, Tsapepas DS, Emond JC, Verna EC. Tocilizumab for severe COVID-19 in solid organ transplant recipients: a matched cohort study. Am J Transplant. 2020 Nov;20(11):3198-3205. doi: 10.1111/ajt.16314. Epub 2020 Oct 15. PMID: 32946668; PMCID: PMC7537322.

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