Conclusions: The COVID-19 pandemic had worldwide devastating outcomes for vulnerable groups such as CKD patients. In our study, we demonstrated that CKD and ESRD is associated with a higher incidence of mortality and MACE in COVID-19. By understanding the clinical course of these patients, clinicians may better anticipate and attempt to improve outcomes during inpatient visits.

TH-PO914
Efficacy of COVID-19 Vaccination in Dialysis Patients: A Prospective Multicenter Study
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Background: Dialysis patients are considered to be at increased risk for SARS-CoV-2 infections. Thus, they were prioritized for early vaccination. However, early data suggested that seroconversion rates may be lower in this population, consistent with the reduced response rate to vaccination against hepatitis B, pneumococcus or influenza. The objective of this study was to evaluate the efficacy of COVID-19 vaccines in this cohort with respect to seroconversion, and to identify potential risk factors for nonresponse.

Methods: We conducted a prospective, multicenter study in chronic hemodialysis patients at 4 dialysis facilities in central Germany, starting April 2021. Blood samples were taken prior to 1st vaccination, before 2nd vaccination, 7-14 days after 2nd vaccination, as well as 60 and 120 days after full vaccination for long-term follow-up. At any study time point, results of COVID-19 antigen tests and clinical symptoms were assessed. Similarly, data was obtained for 1st or 2nd booster vaccination. Blood samples for antibody titers were drawn – if applicable – at day 30, 90, 150 and 210 following booster vaccination. To identify potential risk factors, data including underlying condition, comorbidities, lab results, seroresponse to hepatitis B vaccination, immunosuppression and other medications was assessed. Antibody response was defined above a value of 7.1 BAU/l.

Results: After 2 vaccinations, 288 individuals were evaluated; of these, 270 (93%) developed an adequate antibody response. Although the majority of patients had received a mRNA vaccine, there was no significant difference in the allover response rates compared to vector based vaccines. Age and immunosuppressive medication were found to be significant risk factors for nonresponsiveness to COVID-19 vaccination (p<0.05). Infections dropped following immunization. Of note, 6 months after full vaccination, antibody titers significantly declined. Both, 1st and 2nd booster doses resulted in an increase of antibody titers: during the omicron wave, no COVID-19 associated hospital admissions were observed.

Conclusions: COVID-19 vaccination is effective in hemodialysis patients. Like in the general population, only age and immunosuppression are risk factors for not responding to vaccination, thereby having a potential impact on outcome, especially for the wave to come.

TH-PO915
Humoral Responses in the Omicron Era Following a Three-Dose SARS-CoV-2 Vaccine Series in Kidney Transplant Recipients Caitrionna M. McEvoy,1 Queenie Hu,2 Kentó T. Abe,2 Kevin Yau,2 Matthew J. Oliver,2 Adeera Levin,4 Anne-Claude Gingras,4 Michelle A. Hladunewich,2 Darren A. Yuen,1 ‘St. Michael’s Hospital Keenan Research Centre for Biomedical Science, Unity Health Toronto, Toronto, ON, Canada; 2Division of Nephrology, Department of Medicine, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; 3UBC Division of Nephrology, St. Paul’s Hospital, Vancouver, BC, Canada; 4Lumenfield-Tennenbaum Research Institute, Toronto, ON, Canada.

Background: Kidney transplant recipients (KTR) have a diminished response to SARS-CoV-2 vaccine in comparison to immunocompetent individuals. Deeper understanding of the antibody response in KTRs following third-dose vaccination would enable identification of those who remain unprotected against Omicron and require additional treatment strategies.

Methods: We profiled antibody responses in KTRs pre- and at one and three months post-third-dose SARS-CoV2 mRNA-based vaccine. Anti-spike and anti-RBD IgG levels were determined by ELISA. Neutralization against wild-type, Beta, Delta and Omicron (BA.1) variants was determined using a SARS-CoV-2 spike pseudotyped lentivirus assay.

Results: 44 KTRs were analysed at 1 and 3 months (n=26) post-third-dose. At one month, the proportion of participants with a robust antibody response had increased significantly from baseline, but Omicron-specific neutralizing antibodies were detected in just 45% of KTRs. Median anti-spike and anti-RBD antibody levels declined at 3 months, but the proportion of KTRs with a robust antibody response was unchanged. 38.5% KTRs maintained Omicron-specific neutralization at 3 months. No clinical variables were significantly associated with detectable Omicron neutralizing antibodies, but anti-RBD titers appeared to identify those with Omicron-specific neutralizing capacity.

Conclusions: Over 50% of KTRs lack an Omicron-specific neutralizing response 1 month following a third mRNA-vaccine dose. Among responders, binding and neutralizing antibody responses were well preserved at 3 months. Anti-RBD antibody titers may be a useful identifier of patients with detectable Omicron neutralizing antibody response.

TH-PO916
Factors Associated With Reduced Anti-SARS-CoV-2 Antibody Responses After mRNA Vaccination in Kidney Transplant Recipients on Belatacept Ayman Al Jard,1 Leela Morena,1 Jamil R. Azzi,2 Jay A. Fishman,3 Leonardo V. Riella,1 ‘Massachusetts General Hospital, Boston, MA; 2Brigham and Women’s Hospital, Boston, MA.

Background: Antiviral antibody responses to SARS-CoV-2 vaccines are reduced in kidney transplant recipients (KTRs) on belatacept compared to those not on belatacept. However, factors associated with lower odds of developing antibody responses in KTRs on belatacept are not known.

Methods: We conducted a retrospective multicenter cohort study of all KTRs on belatacept who received three mRNA vaccine doses at our institutions, where all KTRs on belatacept had anti-SARS-CoV-2 receptor-binding domain (RBD) antibodies measured by the Roche Elecsys immunoassay. The primary outcome was development of anti-RBD antibodies after the third vaccination.

Results: 58 KTRs on belatacept were included. Median age was 62 and 69% were female. 78% were on prednisone, 60% on mycophenolate, 11% on mTOR inhibitors and 9% on azathioprine. After the third vaccine, 32/58 KTRs (55%) developed anti-RBD antibodies (Fig. 1A) with a median level of 3.3U/mL (Fig. 1B). Using univariate logistic regression, we found that age≥2, prednisone use, and no prior SARS-CoV-2 infection are associated with lower odds of developing anti-RBD responses after vaccination (Fig. 1C). These associations remained significant in the adjusted multivariable model (Fig. 1D). We also evaluated correlation between anti-RBD antibody levels and the number of days between vaccination and the most recent belatacept infusion for each vaccination but did not find an association between the two (Fig. 1E-G).

Conclusions: Prednisone use, age≥60, eGFR<45ml/min/1.73m², and no history of SARS-CoV-2 infection are associated with lower odds of anti-RBD antibody responses after vaccination in KTRs on belatacept.