Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

doses, the durability of protection, and the contribution of cellular immunity.

No conflict of interest

POS-974

AVAILABILITY AND PRIORITIZATION OF COVID-19 VACCINES AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE AND KIDNEY TRANSPLANT - A GLOBAL SURVEY BY THE INTERNATIONAL SOCIETY OF NEPHROLOGY

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Introduction: Given the inequities in access to COVID-19 vaccination and the heightened vulnerability of patients living with advanced chronic kidney disease (CKD) or kidney transplant (KT), it is important to ascertain the availability, readiness, and prioritization of COVID-19 vaccines for this population globally.

Methods: Collaborators from ISN, DOPPS, and Global Kidney Health Atlas (GKHA) developed the survey, which was administered electronically to individuals in 174 countries representing all 10 ISN regions of the world between 2 July and 4 August 2021. Purposive sampling was undertaken to include at least one stakeholder in the kidney community per country, identified through the GKHA database, national societies, or ISN regional boards.

Results: 118 responses were received from 99 countries across all 10 ISN regions, giving a country response rate of 99/174 (57%). At least one vaccine was available in 96/99 (97%) countries. Oxford-AstraZeneca vaccine was available in all regions. Pfizer (9/10), Moderna (8/10), Johnson & Johnson (8/10) and Sputnik V (8/10) vaccines were also widely available.

Healthcare workers were the most common high-priority group for vaccination, being eligible within the first 2 phases in 91% of countries. Patients living with stage 4/5 CKD, dialysis, or KT were vaccinated during the first two phases in 51%, 71%, and 62% of countries respectively. Among 67 countries with >1 dialysis modality available, patients receiving in-centre haemodialysis (ICHD) were prioritized for vaccination over those receiving peritoneal dialysis (PD) or home HD (HHD) in 14 (21%). Vaccines were administered in the ICHD unit in 27 (33%) countries, most often by dialysis staff (16/27, 59%) and/or specially trained vaccination teams (15/27, 56%). Vaccination was performed before HD (6/27, 22%), after HD (10/27, 37%), on non-dialysis days (5/27, 19%), or without specific timing (6/27, 22%). The proportion of patients vaccinated varied greatly in different regions (Table 1). Overall, at least 50% of patients receiving ICHD, PD or KT were estimated to be fully vaccinated at the time of the survey in 55%, 64% and 51% of countries, respectively. The most common barriers to vaccination of patients (sometimes, frequently or always) were vaccine hesitancy (63/82, 77%), vaccine shortages (52/82, 63%) and vaccine mass distribution challenges (41/78, 53%), followed by lack of prioritization of patients with kidney disease (32/79, 41%), insufficient number of vaccination centres (26/81, 32%), lack of formal vaccination programs (15/81, 19%), staff shortages (15/79, 19%), and high out of pocket costs (4/81, 5%) (Figure 1). Vaccines were provided free of charge, sponsored by the government, in all countries except for one, they were paid for by the patient's insurance.

Conclusions: Despite the global availability of COVID vaccines, there is substantial worldwide variability in the prioritization of, approach to, and successful achievement of vaccination in patients with advanced CKD or KT. Key barriers identified in many countries were vaccine hesitancy, shortages and distribution challenges. Greater solidarity is required globally and locally to ensure equitable access to vaccination for patients living with CKD and KT worldwide, especially with the recent consideration of a third booster for this high-risk group.

No conflict of interest

POS-975

SEROLOGIC RESPONSE TO THE MRNA-1273 AND BNT162B2 COVID-19 VACCINES IN DIALYSIS PATIENTS

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Introduction: Differences in immunogenicity between mRNA COVID-19 vaccines have not been well characterized in the dialysis population. The objective of this study was to compare the SARS-CoV-2 antibody response in chronic dialysis patients following BNT162b2 and mRNA-1273 COVID-19 vaccination.

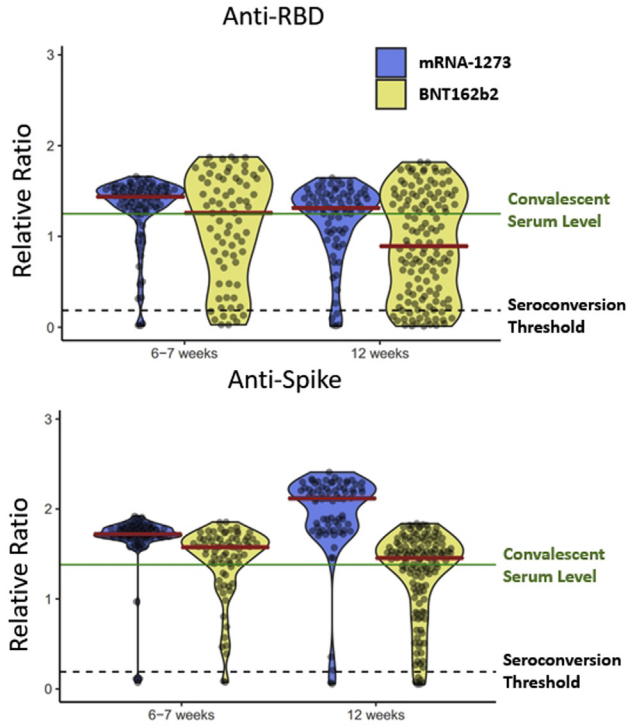
Methods: This was a prospective observational cohort study at two academic centres in Toronto, Ontario, Canada. In 239 dialysis patients receiving two doses of the BNT162b2 (Pfizer-BioNTech) or mRNA-1273 (Moderna) COVID-19 vaccine. SARS-CoV-2 IgG antibodies to the spike protein (anti-spike), receptor binding domain (anti-RBD), and nucleocapsid protein (anti-NP) were measured in participants 6-7 weeks following two dose vaccination and at follow-up at 12 weeks following two dose vaccination. Comparison was made to the median convalescent serum SARS-CoV-2 IgG antibody levels from 211 patients with known prior COVID-19 which have been used to define correlates of protection.

Results: Among 144 patients receiving BNT162b2, median age was 72 (interquartile range, 60-78), 32% were female, and 4% had prior RT-PCR confirmed COVID-19 while the 95 patients receiving mRNA-1273 had a median age of 62 (interquartile range, 55-67), 26% were female, and 5% had prior COVID-19.

At 6-7 weeks following two dose vaccination, high rates of seroconversion for anti-RBD and anti-spike were observed in both vaccine groups. In patients receiving BNT16b2 65/73 (89%) had anti-RBD seroconversion, 71/73 (97%) had anti-spike seroconversion, while among patients receiving mRNA-1273, 85/88 (97%) had anti-RBD seroconversion, and 85/88 (97%) had anti-spike seroconversion. In patients receiving BNT162b2, only 38/73 (52%) had anti-RBD reaching the median convalescent serum level in comparison to 70/88 (80%) receiving mRNA-1273. Similarly, 54/73 (74%) of patients receiving BNT16b2 and 84/88 (95%) receiving mRNA-1273 attained the convalescent serum level of anti-spike.

At 12 weeks post two dose vaccination, seropositivity was maintained in 115/134 (86%) for anti-RBD and 128/134 (96%) for anti-spike in those receiving BNT162b2. In patients receiving mRNA-1273 seropositivity was 67/72 (93%) for anti-RBD and 69/72 (96%) for anti-spike. Anti-RBD levels were significantly lower at 12 weeks post vaccination in patients receiving BNT162b2 compared to mRNA-1273 with 50/134 (37%) receiving BNT162b2 reaching convalescent serum levels in comparison to 45/72 (63%) of patients receiving mRNA-1273 ($p=0.001$). Similarly, 77/134 (57%) of patients receiving BNT162b2 reached convalescent levels of anti-spike in comparison to 68/72 (94%) receiving mRNA-1273 ($p<0.001$).

Serologic evidence of natural COVID-19 infection detected through anti-NP was similar between vaccine groups with 14/134 (10%) receiving BNT162b2 and 4/72 (6%) receiving mRNA-1273 seropositive for anti-NP at 12 weeks.



Conclusions: In dialysis patients mRNA-1273 appears to elicit a stronger SARS-CoV-2 serologic response in comparison to BNT162b2 with increased durability at 12 weeks. The clinical significance of differences in mRNA vaccine immunogenicity on vaccine effectiveness in preventing COVID-19 warrants further investigation and may have implications for ongoing vaccination efforts.

Conflict of interest

Potential conflict of interest:

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POS-976

A DESCRIPTIVE STUDY ON COVID-19 IN END STAGE KIDNEY DISEASE ON DIALYSIS IN SABAH BORNEO, MALAYSIA

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Introduction: Coronavirus disease 2019 (COVID-19) emerged in late 2019 and rapidly spread worldwide including Malaysia. Since then, COVID-19 has become a worldwide pandemic, with numbers rising to 219 million cases reported as of September 2021 and with almost 4.5 million deaths. Unfortunately, a major outbreak of COVID-19 occurred in Borneo Malaysia in late September 2019 and rapidly spread among patients on dialysis. COVID-19 infection represents a special threat to the end stage kidney disease (ESKD) population with their multitudes of comorbidities and vulnerabilities to infections. The overall estimated case fatality rate of ESKD patients with covid-19 was approximately 3.6 times the global average (4.98%). We aim to study the demographic, clinical manifestation, laboratory parameters and clinical outcome of COVID-19 disease in ESKD patients on dialysis in Sabah Borneo, Malaysia.

Methods: Retrospective observational cohort multicenter study including all ESKD patients on regular maintenance dialysis diagnosed with COVID-19 admitted to designated COVID-19 hospitals in Sabah from 1stSeptember to 30thNovember 2020. The primary outcome was to evaluate the demographic, clinical manifestation, laboratory parameters and clinical outcome of COVID-19 disease in ESKD. Secondary outcome was to assess risk factors between those that died and survived. Data was analyzed using SPSS version 26. Logistic regression models were used to detect the factors associated with mortality.

Results: A total of 88 patients were included, 65.9% being male, with a median age of 58 years (IQR 44,63); with 42% having diabetes mellitus, 40.9% with hypertension. 85 patients (97.7%) were on hemodialysis and only 3 on peritoneal dialysis. Median dialysis vintage was 43.5 months (IQR 16,85). 81.8% of them are dialyzed using a permanent vascular access. The mortality rate was 14.8%. 72.8% were admitted with covid category 3 and below, with 18 patients (20.5%) being admitted into intensive care unit (ICU) and 8 patients requiring mechanical ventilation. 19 patients (21.6%) developed hospital acquired infection and 9 (10.2%) had episodes of cardiac arrythmia. Median admission stay in hospital was 12 days (IQR 8, 16). Independent risk factor for mortality were admission into ICU (p<0.01, OR 53.43), category 5 on admission (p= 0.021, OR 40), mechanical ventilation (p=0.001, OR 15), investigation on admission like albumin (p=0.01, OR 0.88), C-reactive protein (CRP) (p= 0.008, OR 1.01), and D-dimer (p=0.01, OR 2.42); in addition with repeated investigations on day 7 of admission such as ALC count (p=0.02, OR 0.01), Hemoglobin (Hb) count (p=0.03, OR 0.62), CRP (p<0.01, OR 1.02), D-dimer (p=0.01, OR 3.27).

Univariable logistic regression analysis of risk factor associated with death in ESRD

Variable	OR	95% CI	P
Age, yr	1.04	0.95- 1.14	0.38
Male	1.88	0.47- 7.40	0.37
Dialysis vintage	1.00	0.98-1.01	0.73
Diabetes mellitus	0.39	0.17- 1.32	0.13
Hypertension	1.52	0.28- 8.13	0.62
Ischemic Heart Disease	2.12	0.57- 7.94	0.27
Stroke	1.04	0.11- 9.45	0.97
Pulmonary disease	0.15	0.02- 1.18	0.07
Dyslipidemia	1.63	0.19- 14.12	0.65
BMI > 30	2.51	0.30- 21.08	0.39
Admission to ICU	53.43	9.80- 291.19	< 0.01
Mechanical ventilation	15.00	3.00- 74.81	0.001
Category on admission			
Cat 1			
Cat 2	2.00	0.11- 35.41	0.636
Cat 3	2.06	0.20- 21.34	0.541
Cat 4	8.00	0.87- 73.68	0.066
Cat 5	40.00	1.75-914.78	0.021
Admission bloods			
WBC	1.11	0.99- 1.24	0.06
ALC	0.57	0.23- 1.39	0.21
Neutrophil	1.00	0.98-1.02	0.90
Hemoglobin	0.81	0.60- 1.09	0.17
Platelet	1.00	0.98-1.00	0.25
Albumin	0.88	0.79- 0.97	0.01
Lactate dehydrogenase	1.00	0.99- 1.00	0.35
CRP	1.01	1.00-1.02	0.008
D-dimer	2.42	1.20- 4.88	0.01
Day 7 admission bloods			
WBC	1.17	1.01-1.35	0.04
ALC	0.01	0.01-0.18	0.02
Neutrophil	1.23	1.06- 1.45	0.008
Hemoglobin	0.62	0.39- 0.97	0.038
Platelet	1.00	0.99- 1.00	0.57
Albumin	0.79	0.67- 0.92	0.004
Lactate dehydrogenase	1.00	1.00- 1.01	0.036
CRP	1.02	1.00- 1.03	0.006
D-dimer	3.27	1.22- 8.75	0.018