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been placed to gauge the effectiveness of vaccination in preventing severe disease and death in ESKD patients with COVID-19 infection.

Methods: A retrospective observational study whereby we reviewed the electronic database of all dialysis-dependent patients who were admitted to four hospitals (Penang General Hospital, Seberang Jaya Hospital, Bukit Mertajam Hospital and Kepala Batas Hospital) in Penang, Malaysia for COVID-19 infection, from 1st March 2020 till 31st August 2021.

Results: There was a total of 153 admissions. 60 patients were admitted to Penang General Hospital, and the remaining 93 were admitted to the other three hospitals. 96 (63%) patients were male and 57 (37%) were female, with mean age of 59.5 ± 12.5 years. Five patients were on Continuous Ambulatory Peritoneal Dialysis (CAPD) while the others were on regular hemodialysis. 139 (90.8%) patients had hypertension, 123 (80.3%) had diabetes mellitus, and 41 (26.8%) had cardiovascular disease.

At presentation, most patients had mild disease and did not require oxygen supplementation. 31 (20.3%) were asymptomatic (Category 1), 65 (42.5%) had symptoms without pneumonia (Category 2) and 21 (13.7%) had pneumonia but did not require oxygen support (Category 3). A smaller but significant proportion required oxygen supplementation at presentation. 30 (19.6%) needed oxygen therapy (Category 4). 6 (3.9%) were critically ill, requiring high flow nasal cannula or invasive ventilation (Category 5).

Subsequently, during admission, their disease progressed. The number of Category 3 patients doubled to 45 (29.4%) and a larger proportion of patients had required oxygen supplementation, with 51 (33.3%) patients deteriorating to Category 4. There was a total of 31 deaths (20.3%).

During this study, Malaysia's National COVID-19 Immunization Programme was administering vaccines which required two doses (Sinovac, AstraZeneca and Pfizer-BioNTech vaccines). Most (85 patients, 55.6%) had not been vaccinated. 11 (7.2%) had received 1 dose, and 57 (37.2%) had completed 2 doses.

Patients who had been vaccinated fared better than their unvaccinated counterparts. 47.1% of unvaccinated patients required oxygen therapy (Category 4-5) at some point of their disease as opposed to only 25% of patients who had received at least one dose of vaccine (p value = 0.005). Among the mortalities, most (64.5%) had not been vaccinated.

Conclusions: ESKD is an important risk factor contributing to COVID-19 mortality. The mortality rate in ESKD patients with COVID-19 disease is high (20.3%) and most (64.5%) were not vaccinated. Patients who were unvaccinated had more severe disease.

No conflict of interest

POS-951

THE EVOLVING PRACTICE OF NEPHROLOGY DURING THE COVID-19 PANDEMIC IN BRUNEI DARUSSALAM



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Introduction: Brunei had success in combatting the first wave of the COVID-19 pandemic with no local transmissions for over a year, until August 2021 when we started experiencing the second wave. In the timespan of <2 months, the pandemic has led to significant changes to nephrology practice in the country. Looking after the vulnerable dialysis population amidst a rapidly evolving crisis requires a swift and adaptive response.

Methods: We describe here the development of current practice relating to the management of our kidney patients during the crisis.

Results: At the time of writing, there have been >6000 confirmed cases (1.5% of the general population). Hemodialysis (HD) patients (2.1%) are affected more than peritoneal dialysis (PD) patients (1.1%). Ensuring smooth operation of HD service during this crisis is resource intensive. We have adopted many evidence-based strategies (Figure 1) to reduce transmission in our HD units. 1 out of the 7 HD units in the country has been converted into a national quarantine HD unit which caters for patients under quarantine. Within this unit, we further risk stratify and segregate patients by different shifts and physical separation. The single side room in this unit is also used for dialysing COVID-19 patients in the community, while waiting for their admission to the National Isolation Center. Due to shortage of nurses, we reduce HD frequency to twice weekly, with monitoring for hyperkalemia and high interdialytic weight gain. Preliminary data has not shown any significant increase in incidence of hyperkalemia and hospitalizations for fluid

overload. Antigen rapid tests are used before each HD session, either as drive-through (Figure 2), on-site or self-testing at home. As of today, we have used more than 4000 kits, with 100% sensitivity and 99.8% specificity. We successfully lobbied the government to reopen the operating theatres just for PD catheter insertion. PD is prioritized over HD in all incident patients initiating on dialysis. We also extend this initiative to convert existing HD patients to PD. The current capacity allows us to insert 4 PD catheters per week, as opposed to 1-2 cases per month before the current crisis. By the end of 2021, we are expecting >60% increase in the PD prevalence. New patients are trained on CAPD instead of APD due to the shorter training time required. This is done in-person but also supplemented by use of telehealth. Routine blood tests, kt/v and PET are deferred. All transplants are suspended. Clinics are reduced to only urgent cases. Virtual clinics using telehealth are being explored, to ensure continuity of care. Patients on Recormon are taught to self-inject, and the remaining are converted to Mircera to reduce their clinic visits. Another important initiative is the prioritization of COVID-19 vaccination for our dialysis population. This is done through in-center vaccination and setting up a vaccination team to cater for the CKD, PD and transplant patients. With this initiative, we have boosted the full 2 doses vaccination rate from <5% before the second wave to >70% in less than 2 months.

Advice patients to stay at home and not turn up at dialysis facility if unwell.
Ensure triaging (contact/travel history, fever, influenza-like illness) before allowing entrance into the facility.
Security checkpoints to ensure no patients on quarantine order are allowed entry to the facility.
Physical distancing in waiting areas.
Every patient to use a fixed station throughout, preferably with the same nurse, for ease of contact tracing if needed.
Compulsory wearing of surgical masks by all patients throughout the HD sessions.
Discouraged to eat or drink throughout the HD sessions.
No visitor policy.
Educate all staff on the importance of hand hygiene and use of personal protective equipment (PPE).

Figure 1

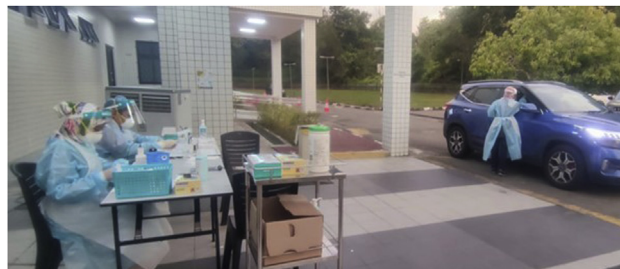


Figure 2

Conclusions: The lasting effect of COVID-19 will continue to impact all aspects of nephrology. As we move into uncharted territory, we need to explore creative ways with flexibility and clear strategies, to implement dialysis care and for emergency preparedness in the future.

No conflict of interest

POS-952

COVID-19 AND IMPACT ON PATIENTS AND STAFF IN TANKER FOUNDATION



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Introduction: In terms of morbidity and mortality, the SARS COVID-19 infection had a tremendous impact on Indian healthcare. The illness has resulted in a high number of hospitalizations with well documented renal consequences. Moreover, because of this illness, patients with pre-existing conditions, such as chronic kidney disease, are more likely to have negative results. Here we present the results of COVID-19-positive, end-stage renal disease patients and the consequences of the pandemic on staff services in a charity-run haemodialysis centre.

Methods: This observational study was conducted at Tanker Foundation.

All patients undergoing dialysis (126) + the employees working at the haemodialysis units (107) were included in the study.

Statistical analysis was performed using SPSS version 26 (IBM, New York).

Results: One hundred twenty-six patients received dialysis regularly in charity-run centres during the research period, and all of them tested

positive at some point. 19 (17.7%) of the 107 employees tested positive for the virus. A total of 3 patients tested positive despite receiving both doses of vaccination. The mean age was 50.46 years, and most of them were men (78.5%). The most common co-morbidity was hypertension (95.2%), followed by diabetes (28.5%). Before being tested positive, patients had been on dialysis for an average of 49.6 months. Most of the patients were hospitalized (99.2%) after being diagnosed with Covid-19. The mean duration of hospitalization was 9.72 days. Of 126 patients on haemodialysis who tested positive for Covid-19, 31 (24.6%) patients expired. Compared to those who survived the illness, the Covid-19 positive patients who died were older (56.64 ± 13.15) vs 48.45 ± 11.5 , $p = 0.001$) and had shorter dialysis vintage (mean 37.67 vs 54 days, $p = 0.05$).

Conclusions: In conclusion, our investigation indicates the increased incidence of COVID-19 infection in populations undergoing haemodialysis. Out of 126 patients undergoing dialysis, all of them tested positive at some point, and the patients who died were older than those who survived (56.64 ± 13.15) vs 48.45 ± 11.5 , $p = 0.001$). Despite nationwide lockdown and disruptions in transportation, we were able to continue our healthcare services at charitable haemodialysis centres without any interruption.

No conflict of interest

POS-953

READMISSION AND OUTCOME AFTER INITIAL HOSPITAL DISCHARGE AMONG END-STAGE KIDNEY DISEASE PATIENTS WITH CORONAVIRUS DISEASE 2019



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Introduction: Early readmission post-hospitalization from coronavirus disease 2019 (COVID-19) has been associated with poor outcomes in the general population and imposes a burden on the healthcare system. To date, there have been limited data on long-term outcomes and readmission after COVID-19 infection in end-stage kidney disease (ESKD) patients. This study aims to determine the rate, causes, risk factors and outcome of 30-day readmissions post-hospitalization in ESKD COVID-19 patients.

Methods: This is a single centre retrospective observational cohort study. ESKD patients who tested positive by polymerase chain reaction (PCR) testing of a nasopharyngeal sample for COVID-19 admitted to nephrology ward Hospital Selayang from 1st May 2021 till 31st July 2021 were recruited. Readmission was defined as a new hospital admission within 30 days of discharge. Demographic, clinical and laboratory data were obtained from the hospital information system.

Results: During the study period, 142 ESKD patients were admitted with COVID-19. During initial hospitalization, 25.4% ($n=36$) patients died. Among the 106 survivors, 16 patients (15%) were readmitted within 30 days of discharge. The majority of patients were male (68.8%, $n=11$), Malay ethnicity (75%, $n=12$) with mean age of 56 ± 13 years old. Hypertension (100%) and diabetes mellitus (50%, $n=8$) were the two major comorbidities present.

The mean time from discharge to readmission was 15.6 ± 7.4 days. The causes of hospital readmission were pneumonia (37.5%, $n=6$), long-covid (25%, $n=4$), bacterial infection (25%, $n=4$) and venous thromboembolism (VTE) (12.5%, $n=2$).

Readmitted patients had a shorter initial hospital length of stay (LOS) compared to those with a single hospitalization with a median of 13 days (Inter Quantile Range (IQR) 12-18) vs 18 days (IQR 13-25). The median LOS upon re-hospitalization was 8 days (IQR 5-10).

Patients who were on pharmacological VTE prophylaxis during index hospitalization have an 88.6% reduced risk of readmission with OR=0.114 (95% CI: 0.034, 0.385). The mortality rate during readmission was 31% with age ≥ 60 years associated with an increased rate of mortality ($p=0.03$).

Comorbidities, COVID-19 disease category, radio-imaging severity, ICU admissions and usage of steroids were not found to have a significant impact on mortality or LOS and risk of readmission.

Conclusions: The 30-day readmission rate is high amongst ESKD COVID-19 survivors primarily due to pneumonia with high mortality in patients aged more than 60 years. The use of anticoagulants is associated with a reduced rate of readmission.

No conflict of interest

POS-954

COVID-19 IN PATIENTS ON PERITONEAL DIALYSIS



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Introduction: After first being identified in Wuhan, China in December 2019, the novel Coronavirus Disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 quickly became a global pandemic. In Malaysia, the general population mortality rate is approximately 1.63% whereas in dialysis patients the mortality rate goes up to 21%, almost similar as data in Italy at the height of the pandemic. In the Nephrology Department Hospital Kuala Lumpur, the Peritoneal Dialysis Units cater for approximately 430 patients on peritoneal dialysis. Hence, Covid 19 poses a significant risk to this population of patients.

Objective: This study aims to study the outcome of COVID-19 patients on peritoneal dialysis in Hospital Kuala Lumpur that may provide additional insights for healthcare providers in managing covid 19 patients.

Methods: This is a retrospective, cross sectional, retrospective study conducted in Nephrology Department, Hospital Kuala Lumpur. Study populations include all End Stage Kidney Disease patients who were admitted to for COVID-19 infection. Data were collected from March 2020 to September 2021.

Results: A total 649 patients with End Stage Kidney Disease (ESKD) were hospitalized for COVID-19. Forty-one patients (6.3%) were on peritoneal dialysis. Amongst peritoneal dialysis patients, mean age was 55 years old (SD= 12.5 years old). Majority of the patients had underlying diabetes mellitus and hypertension at 28 (68.3%) and 30 (73.2%) respectively. Thirty-one patients (81.6%) were of continuous ambulatory peritoneal dialysis (CAPD) whereas only 7 patients (18.4%) were on automated peritoneal dialysis (APD). Most of the patient were diagnosed at Category 1 ($n=12$, 29.3%) and Category 2 ($n=10$, 24.4%). Most of the patients were asymptomatic however for those who had symptoms, they presented with fever ($n=3$, 7.3%) and cough ($n=2$, 4.9%). Mean days of hospitalization was 10.4 ± 8.0 days. There were 145 (22%) End Stage Kidney Disease (ESKD) deaths in which 3 were Continuous Ambulatory Peritoneal Dialysis (CAPD) patients (0.005%).

Conclusions: In conclusion, we observed low numbers of peritoneal dialysis patients infected with COVID-19. In fact, most of them presented with mild or no symptoms at all and the number of deaths is much lower than patients on haemodialysis. Peritoneal dialysis should be considered as the modality of choice for renal replacement therapy as it is home based especially in this era of Covid 19 pandemic.

No conflict of interest

POS-955

THE INCIDENCE OF END STAGE RENAL DISEASE ON PERITONEAL DIALYSIS HOSPITALISED WITH COVID-19: SINGLE CENTERED STUDY



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Introduction: The pandemic of novel coronavirus disease 2019 (COVID-19) is posing a threat to all populations, including patients with kidney failure who require hemodialysis (HD) or peritoneal dialysis (PD). Our study demonstrated the incidence of patients with PD therapy hospitalised for COVID-19 infection and its outcome.

Methods: This was a retrospective single center study recruiting all end stage renal disease (ESRD) patient on peritoneal dialysis (PD) hospitalised for COVID-19 from March 2020 to August 2021 in Hospital Tengku Ampuan Rahimah, Klang, Malaysia. Baseline demographics and laboratory data within 48 hours of hospitalisation were recorded. The outcome of the COVID-19 infection in ESRD patients on peritoneal dialysis was recorded. The data was analysed using the Statistical Package for Social Science version 20.0 (SPSS Inc. Chicago, IL)

Results: We cohorted 38 patients with end stage renal disease on PD hospitalised with COVID-19 (22 males, 16 females). Their mean age was 55.37 ± 12.95 years. Nine of the 38 (23.7%) patients expired while 29 patients (76.3%) were discharged home. Mean length of hospital stay