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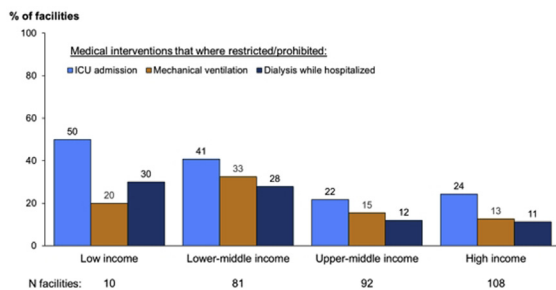
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Introduction: The COVID-19 pandemic has caused significant disruption to chronic hemodialysis (HD) care across the globe. Patients receiving chronic hemodialysis (HD) are highly vulnerable in all settings. It is unknown whether the COVID-19 pandemic has disproportionately affected the care of the vulnerable chronic hemodialysis (HD) patients, particularly in low- and lower-middle income (LLMIC) settings. We aimed to identify global inequities in HD care delivery during the COVID-19 pandemic.

Methods: The International Society of Nephrology (ISN) and Dialysis Outcomes and Practice Patterns Study (DOPPS) conducted a global online-survey of HD units in late 2020 to ascertain practice patterns and resources relevant to dialysis care during the COVID-19 pandemic. Sample HDUs included: (1) DOPPS sites in China (April – May 2020), (2) a random sample (20 HDUs if > 40 / country; all HDUs if < 40) stratified by region and HDU population (November 2020 – March 2021), and (3) an open invitation via ISN's membership list and social media (March 2021). In May 2020, DOPPS and ISN agreed in revising and extending the survey to countries not participating in DOPPS, including low- and middle-income countries. Responses were stratified by country income according to the World Bank classification.

Results: Surveys were returned from 412 facilities in 78 countries: 15(4%) in Low Income Countries (LIC), 111(27%) in Lower-middle Income Countries (LMIC), 143 (35%) in upper-middle income countries (UMIC) and 139(34%) in high income countries (HIC). Respondents reported that diagnostic tests were not available or of limited availability in LIC (62%) and LMICs (68%) as compared to UMIC (33%) and HIC (20%). Severe shortages of PPE were reported in higher proportions in LIC (43%) and LMIC (24%) as compared to UMIC (4%) and HIC (10%). Patients missed HD treatment in LIC (64%) and LMIC (66%) as compared to UMIC (30%) and HICs (6%). Restrictions in access to HD, ICU care and mechanical ventilation among hospitalized patients testing positive for SARS-CoV-2 were reportedly higher in LIC and LMIC as compared to UMIC and HIC. (Figure 1)

Figure 1: Medical interventions that were restricted or prohibited for chronic dialysis patients admitted to the hospital with COVID-19, by World Bank country income



Mortality among chronic HD patients with COVID-19 increased inversely across country income groups, with > 30% mortality reported in 20% of HDUs in HICs compared with 50% of HDUs in LICs.

Staff reported paying out-of-pocket for PPE more frequently in LIC (58%) and LMIC (76%) as compared to UMIC (53%) compared to HIC (21%).

Patients were more likely to pay out-of-pocket for diagnostic tests in LMIC (40.2%) compared to LIC (14%), UMIC (6%) and HIC (2%).

Conclusions: Striking global inequities were identified in HD care during the pandemic. Higher reported mortality in patients treated with chronic HD in LLMIC is likely multifactorial, reflecting poorer access to diagnosis and care of COVID-19, as well as greater disruptions to HD delivery. Urgent action is required to address these inequities which disproportionately affect LLMIC settings thereby exacerbating pre-existing vulnerabilities which may contribute to poorer outcomes.

Conflict of interest

Potential conflict of interest:

Global support for the ongoing DOPPS Programs is provided without restriction on publications by a variety of funders. Funding is provided to Arbor Research Collaborative for Health and not to Mr. Bieber directly. For details see <https://www.dopps.org/AboutUs/Support.aspx>

POS-969

IMPACT OF VACCINATION ON CLINICAL OUTCOME OF HOSPITALISED END STAGE KIDNEY DISEASE PATIENTS WITH COVID-19 INFECTION. A SINGLE CENTRE EXPERIENCE

TEH, CY*¹, Govindan, S¹, Wong, HS¹, Yakob, S¹

¹Hospital Selayang, Nephrology, Selayang, Malaysia

Introduction: Severe acute respiratory syndrome coronavirus-2 (Covid-19) was first identified at Wuhan, China in 2019. Since then it has become a pandemic and poses a huge threat to global health. In order to curb this, the Malaysian government has implemented the National Covid-19 Immunisation Programme since February 2021, prioritising high risk individuals including the end stage kidney disease (ESKD). However, the efficacy of Covid-19-vaccination in this population has limited evidence. Thus, the objective of this study is to evaluate the clinical effectiveness of Covid-19-vaccination amongst ESKD.

Methods: This is a single centre prospective observational study, reviewing data of adult ESKD patients with covid-19 infection admitted to nephrology ward in Hospital Selayang, Malaysia from 15th July 2021 till 14th August 2021. Demographic and clinical information were extracted from electronic medical records. Disease severity is classified as mild disease (category 1-3) and severe disease (category 4-5). Clinical outcome is defined as alive or death upon discharge. NHS Covid-19 Decision Support Tool score (NHS Score) developed to assist triaging and resource allocation based on age, gender, frailty scale and comorbidities; score of more than 8 is associated with poor prognosis. Clinical frailty scale of 1 to 3 is classified as fit and more than 3 as frail. Multiple logistics regression was performed to identify the odds of full vaccination in disease severity and in-hospital mortality. Data were analysed using IBM SPSS Statistic version 26 with p<0.05 considered as significant.

Results: A total of 95 patients were identified, with mean age of 57 ± 12.5 years and 68.4% of them are fit (1-3) based on clinical frailty scale. Majority on haemodialysis as renal replacement therapy (RRT) (n=88, 92.6%), predominated by male (n=56, 58.9%) and 60% were Malay (n=57).

For vaccination status, 36.8% (n=35) of this cohort completed 2 doses of vaccination, 28.4% (n=27) received 1st dose and 34.7% (n=33) were vaccination-naïve. Upon admission, 65.3% (n=62) were in severe disease and 36.8% (n=35) has NHS Score of more than 8. None of the severe disease received immunomodulator.

Full vaccination status was found to be significantly associated with mitigation of severe Covid-19 disease after adjusting for possible confounding factors (adjusted Odds ratio [aOR] 0.167, 95% confidence interval [CI] 0.066-0.421), equivalent to vaccine effectiveness of 83.3%. Age, gender, ethnicity, clinical frailty scale, mode of RRT and NHS score are not significantly associated with disease severity.

In-ward mortality was significantly associated with Covid-19 disease severity (aOR 0.107, CI 0.028-0.408) with p=0.001 and vaccination status (aOR 0.209, CI 0.066-0.668) with p=0.008. Full vaccination had reduced risk of death by 79%. ESKD with mild disease had a lower risk of death by 89% compared with those with severe disease. Age, frailty score, NHS score, ethnicity, mode of RRT and gender are not significantly associated with mortality.

Conclusions: Adult ESKD patients whom completed 2 doses of vaccination has significant good clinical outcome with mild disease and lower risk for in-hospital mortality.

No conflict of interest

POS-970

PREVALENCE OF SARS-COV-2 INFECTION IN HAEMODIALYSIS PATIENTS- A RETROSPECTIVE STUDY

VORA, A*¹, Raman, A¹

¹Sunshine Hospital, Nephrology, Secunderabad, India

Introduction: Although SARS CoV-2 infection primarily causes respiratory illness with variable clinical presentation; other organs are also damaged by the virus, kidney being one of the major site of complication. Haemodialysis patients are a major risk group to contract the infection and often associated with high morbidity and mortality. In this study we describe the clinical characteristics and outcomes of SARS

CoV-2 illness in chronic kidney disease patients on maintenance haemodialysis.

Methods: All patients of Chronic kidney disease on maintenance haemodialysis admitted with SARS-CoV-2 illness over a period of 14 months from 1ST April 2020 to 30th June 2021 were included in this study. SARS-CoV-2 illness was documented with HRCT chest and RT-PCR test. The demography, basic disease, clinical manifestation, laboratory data, treatment modalities and outcomes were retrospectively analysed.

Results: A total number of 50 patients on maintenance haemodialysis were admitted with SARS-CoV-2 illness of which 36 (72%) were males and 14 (28%) were females in the age group of 18-80 years.

The basic disease causing End Stage Kidney Disease was Diabetic Nephropathy in 24 patients (48%), IgA Nephropathy in 6 patients (12%), Hypertensive Nephrosclerosis in 1 patient (2%), Chronic Interstitial Nephritis in 7 patients (14%), ADPKD in 2 patients (4%), Lupus Nephritis in 1 patient (2%), Focal Segmental Glomerulosclerosis in 1 patient (2%), Chronic Glomerulonephritis in 6 patients (12%) and Membranous Nephropathy in 2 patient (4%).

The most common presenting symptoms were fever (74%), dyspnea (60%), cough (24%), lose motions (12%), loss of smell (16%), hematuria (8%), fatigue (10%) and malena (2%).

HRCT Chest revealed a CORADS score of 5 (28%), 4 (20%), 3 (28%), 2 (18%), 1 (6%). 20 (40%) patients were admitted in ICU and 30 (60%) in wards. 14 patients (28%) required face mask, 13 patients (26%) required mechanical ventilation, 6 patients (12%) required NIV, 6 patients (12%) required HFO and 11 patients (22%) did not require any mode of ventilation.

43 patients (86%) underwent haemodialysis via arteriovenous fistula, 2 patients (4%) via arteriovenous grafts and 5 patients (10%) via permacath. 8 patients (16%) underwent continuous renal replacement therapy, 11 patients (22%) underwent sustained low-efficiency dialysis and 31 patients (62%) underwent conventional haemodialysis.

47 patients (94%) were treated with steroids and 27 patients (54%) were treated with remdesivir for a mean period of 3 days. Mortality was seen in 17 patients (34%). The average duration of hospital stay in those who recovered was 8 days. The most common cause of death was septic shock.

Conclusions: The prevalence of SARS-CoV-2 infection in our haemodialysis patients was less as compared to the general population. Fever, dyspnea, cough and lose motions were the most common presenting symptoms. Mortality was significant in those requiring ICU admission and mechanical ventilation.

No conflict of interest

POS-971

RECURRING COVID-19 IN PATIENT WITH END STAGE RENAL DISEASE – A CASE OF PROBABLE REINFECTION

WAN DAUD, WR* 1



Introduction: Malaysia has been hit with third wave of pandemic COVID-19 since September 2020 till date with sudden surge of cases which mainly involved the vulnerable group with comorbidities. Dialysis dependent End Stage Renal Failure (ESRF) patient are at high risk for COVID-19 infection and its unfavorable sequelae. They are relatively immunosuppressed and had frequent encounters with health care setting, hence increase the risk for persistent exposure and recurrent infection. However, the persistence or recurrent positivity in immunocompromised patient poses a dilemma in regard to the infectivity status and future protection in this population.

Methods: We report a case of 50-year-old patient a who are dialysis-dependent ESRF and Hepatitis B infection, with history of COVID-19 infection in February 2021 diagnosed after his nasal swab RT-PCR positive with cycle threshold (CT) value of 32.9. He was screened after had prolonged exposure to a COVID-19 infected patient at the dialysis center. However, he was asymptomatic and admitted for isolation purposes. He was retested on nasal swab RT-PCR on day 14 before return to his dialysis center—it was negative.

Later, he managed to complete his vaccination as scheduled. At his third month post infection, he was tested again for nasal swab RT-PCR due to multiple exposure to COVID-19 infected patient while in dialysis center. The result was positive with CT value of 36.8. He reported not having any COVID-19 related symptoms. During the hospitalization, qualitative serological testing measuring antibody against SAR-CoV-2 was tested- SAR-CoV-2 IgG antibody was positive and SAR-CoV-2 IgM antibody was negative. He was allowed home on day 10.

Results: We described a case of dialysis dependent ESRF who developed a COVID-19 infection after recovered well from his first episode with clinical resolution based on his negative RT-PCR test result. Despite receiving his full vaccination in between episodes, he was infected for the second time. Reinfection is still possible however the possibility, frequency, infectivity, and severity on subsequent infection is yet to determine, especially in this cohort of population. The antibody data need to be interpreted with caution. Although we believe this is a probable case of reinfection, we cannot rule out the possibility of false positive result or cross reaction with another coronaviruses. Neither we cannot rule out the possibility of recurrent as we have lack of information on the viral strain. Multiple determinants including clinical factors and socio-economic status play a role in determining the humoral response and the heterogeneity in antibody production in dialysis dependent patient. Thus, genomic sequencing analysis plays a role in diagnosis, identify the variant, determine the risk assessment, and provide a support strategy in managing COVID-19 infection especially in dialysis dependent patient. However, with the limited resources, the immediate strategies need to be empowered to strengthen the management of COVID-19 infection in this population.

Conclusions: This case represents the probability of reinfection with COVID-19 in dialysis dependent patient. Further understanding on the risk of reinfection, the humoral response in dialysis dependent patient and accurate laboratory support yet need to be explored, for better management strategies.

No conflict of interest

POS-972

RECURRING COVID-19 IN PATIENT WITH END STAGE RENAL DISEASE – A CASE OF PROBABLE REINFECTION



WAN DAUD, WR*¹, Mustafar, R¹, Periyasamy, P², Kori, N²

¹University Kebangsaan Malaysia Medical Center, Nephrology Unit- Medical Department, Kuala Lumpur, Malaysia, ²University Kebangsaan Malaysia Medical Center, Infectious Disease Unit- Medical Department, Kuala Lumpur, Malaysia

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