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.

population. Figure 1. shows the disease trend along follow-up with emphasis on pre and post vaccination program.

Results: A total of 308 patients (44%) presented COVID-19 disease related symptoms; 184 patients tested positive (26%), 60% were men (p=0.03). Forty-one patients with confirmed disease died (22%) along follow-up. After three months of completing vaccination programs, 9 patients (1.2%) got infected. Infected patients presented the disease after a median time of 32 days after completing vaccination scheme. Disease severity was mild in majority of patients, 2 patients died (1.1%) and there were no re-infections cases reported. There was a clear trend of declining cases and disease severity after vaccination programs were completed.

Figure 1. COVID-19 disease incidence along follow-up in population studied

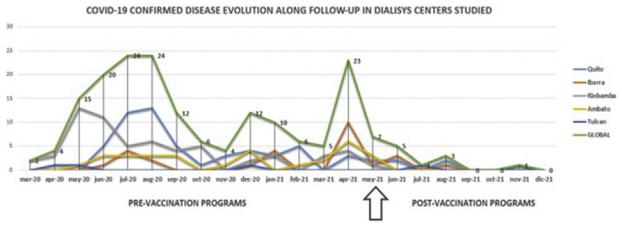

Table 1. Mean Anti-spike antibody titers in HD patients studied and non-CKD population and its distribution in percentiles.

VARIABLES	HD POPULATION (n=50)	CONTROLS (n=24)	P value
Immunization time (days)	127 (± 21)	137 (± 1,2)	NS
*Antibody titers (U/ml)	1335,8 (305-2500)	1139,9 (115-1988)	NS
Percentiles distribution.	Antibody titers (U/ml) / % patients in percentile range		
10	122,3 / (16%)	78,2 / (12%)	
20	280,8 / (12%)	122,7 / (21%)	
30	551,9 / (12%)	209,5 / (4%)	
40	609,4 / (4%)	1013,6 / (12%)	
50	909,1 / (8%)	1234,2 / (4%)	
60	1625 / (4%)	1467,9 / (9%)	
70	1900 / (2%)	1767,3 / (9%)	
80	2050 / (2%)	2127 / (4%)	
90	2350 / (2%)	2375 / (4%)	
100	2500 / (38%)	2500 / (21%)	

Conclusions: COVID-19 disease was more frequent in men with a 22% of mortality in those HD patients with confirmed disease. The high trend of COVID-19 disease incidence went downhill after completing standard vaccinations programs, however, positive and fatal cases were reported in vaccinated patients which could alert of a lack of response and efficacy of standard vaccination schemes on certain HD patients whose characteristics are needed to be explore and studied to adjust future vaccinations schemes in these growing population. Preventive measures must be encouraged strictly for at least one more month after completing vaccination scheme.

No conflict of interest

POS-915

DETERMINANTS OF MORTALITY OF COVID-19 INFECTION IN HEMODIALYSIS PATIETS: DATA FROM A TERTIARY CARE INSTITUTE IN SOUTH INDIA

SOLOMON, D*[1], Paulpandian, V[1], Ravindran, K[1], Kamalakannan, G[1], Shaji, S[1], Srinivasan Kannan, B[1], Aruyerchelvan, C[1], Thanigachalam, D[1], Ramanathan, S[1], Tanuj Moses, L[1], Natarajan, G[1]

[1]Madras Medical College, Nephrology, Chennai, India

Introduction: Chronic kidney disease (CKD) patients in view of their immunocompromised status are highly vulnerable in contracting Covid -19 infection, as well as developing severe disease. The Covid-19 pandemic has affected the hemodialysis population more significantly in both the waves causing high mortality. This study aimed at analysing determinants of mortality in CKD patients with COVID who underwent hemodialysis.

Methods: This is a prospective observational study of maintenance hemodialysis patients and those with acute deterioration of renal function warranting hemodialysis support affected with covid-19 infection. We included patients admitted during both waves of the covid pandemic (2020-2021). Demographic data, comorbidities, COVID severity and outcome were studied. Clinical profile, course and outcome were compared between two waves of COVID (First wave: April 2020- January 2021, Second wave: May 2020- July 2021).

Results: Of the 939 patients studied, 705 patients (75%) were admitted and dialysed during the first wave and 234 patients (25%) were admitted during the second wave. During the first wave, the mean age was 52.4 years and the gender ratio was 2.5. Factors which significantly contributed to the mortality in the first wave include Diabetes- 73(59.3%), oxygen requirement during hospital stay- 90(73.1%), more than 50% lung involvement- 62(50.4%) and acute worsening of renal function due to covid infection- 40(32.5%). During the second wave of covid, the mortality rate was higher (N: 67;28.6%) compared to first wave (N:123, 17.4%). The mean age was 51.6 years and the gender ratio was 2.39. The factors which contribute to the mortality in the first wave also caused significant deaths in the second wave which include Diabetes- 38(57%), requirement of oxygen- 65(97%), acute deterioration of renal function necessitating hemodialysis - 28(41.8%) as well as higher degree of lung involvement- 34(50.7%). The other two factors which were more prevalent among the death population include delayed presentation to the hospital (more than 3 days)- 47(70.1%) and presence of covid related symptoms at the time of admission- 67(100%).

FACTORS	FIRST WAVE		SECOND WAVE	
	EXPIRED N=123 (17.4%)	SURVIVED N=582 (82.6%)	EXPIRED N=67 (28.6%)	SURVIVED N=167 (71.4%)
Age Mean Range	58.4 yrs 29-86	51.1 yrs 13-85	52.8 yrs 30-77	51.1 yrs 9-84
Sex Males Females	90 (73.1%) 33 (26.8%)	413 (70.9%) 169 (29%)	48 (71.7%) 19 (28.3%)	117 (70.06%) 50 (29.9%)
Median dialysis vintage	18 months	18 months	24 months	18 months
Diabetes Mellitus	73 (59.3%) **p-0.001**	235 (40.4%)	38 (57%) **p-0.026**	68 (40.7%)
Hypertension	89 (72.3%) p-0.131	470 (80.7%)	49 (73%) p-0.127	137 (82.1%)
Acute worsening of renal function	40 (32.5%) **p-<0.001**	86 (14.8%)	28 (41.8%) **p-<0.001**	30 (17.9%)
Late presentation (>3 days)	62 (50.4%) p-0.392	318 (54.6%)	47 (70.1%) **p-<0.001**	62 (37.1%)
Symptomatic illness	89 (72.3%) p-0.765	411 (70.6%)	67 (100%) **p-<0.001**	144 (86%)
Oxygen requirement	90 (73.1%) **p-<0.001**	232 (39.8%)	65 (97%) **p-<0.001**	62 (37.1%)
More than 50% lung involvement	62 (50.4%) **p-<0.001**	102 (17.5%)	34 (50.7%) **p-<0.001**	20 (12%)

Conclusions:

- · Covid-19 infection has caused significant mortality (20%) among CKD patients undergoing hemodialysis.
- · Second wave has caused more deaths (28.6%) compared to the first wave (17.4%).
- · The statistically significant factors associated with mortality during both the waves include Diabetes mellitus, acute worsening of kidney infection due to the inflammatory mediators of covid infection, oxygen requirement during hospital stay and higher degrees of lung involvement by CT chest (>50%).

- · Delayed presentation to the health care unit and symptomatic illness at admission also significantly contributed to mortality in the second wave of covid.

No conflict of interest

POS-916

MORTALITY RATE AND ASSOCIATED RISK FACTORS IN HOSPITALISED COVID-19 PATIENTS WITH KIDNEY DISEASE

SUKESH, H*[1], Arul Arumugam, P[1], Ahmad, NI[1], Ibrahim, FH[1], Then, RF[2], Goh, BL[1]

[1]Hospital Serdang, Department of Nephrology, Selangor, Malaysia, [2]Hospital Sungai Buloh, Internal Medicine, Selangor, Malaysia

Introduction: After 2 years, the COVID-19 virus continues to ravage the world. Initial studies have shown increased susceptibility of chronic kidney disease patients to severe infection and mortality. We aim to determine the risk factors for inpatient mortality amongst hospitalised COVID-19 patients with kidney disease.

Methods: This is an observational cohort study involving all patients diagnosed with COVID-19 infection with kidney disease in the first quarter of 2021. Kidney disease refers to end stage kidney disease, chronic kidney disease and acute kidney injury. Relevant clinical and demographic data was extracted from the electronic medical records and statistical analysis was conducted using SPSS version 26. Multivariate logistic regression was performed to determine risk factors associated with mortality amongst patients with kidney disease.

Results: Of 414 COVID-19 patients, 165 (39.9%) had kidney disease [25.5% end stage kidney disease (ESKD), 4.2% chronic kidney disease (CKD) and 70.3% acute kidney injury (AKI)). 56 of them died, giving an inpatient mortality rate of 33.9% in patients with kidney disease compared to 17.1% from all COVID-19 admissions. Although statistically not significant, ESKD had the highest mortality rate at 42.9% followed by AKI, 31% and CKD, 28.6% ($p = 0.365$). In those with AKI, significantly fewer patients died (64.3% vs 73.4%, $p = 0.008$). Majority of patients with kidney disease who died, were of older age group (66 ± 10.4 vs 54 ± 14.6, $p < 0.001$), male (78.6% vs 61.5%, $p = 0.035$) and presented with category 5 infection (28.6% vs 19.3%; $p = 0.009$). A higher proportion were Chinese, 44.2% followed by Malays, 31.9% and Indians, 27.8% ($p = 0.340$). 66.1% were on mechanical ventilation while 51.8% were managed in the intensive care unit. Significant associations to death in kidney disease include lethargy with an odds ratio (OR) of 2.11 (1.09-4.09); $p = 0.026$ and low nadir absolute lymphocyte count [OR 0.197 (0.080-0.486), $p < 0.001$]. Others are raised serum creatinine [OR 1.001(1.00-1.001), $p = 0.02$), peak serum sodium [OR 1.127(1.061-1.196), $p < 0.001$], C-reactive protein [OR 1.004(1.001-1.008), $p = 0.007$] and ferritin [OR 1.0 (1.0-1.0), $p = 0.007$]. A significant number of patients with kidney disease who died also sustained myocardial infarction compared to the survivors (12.5% vs 3.7%, $p = 0.046$). Multiple logistic regression predicted older age, premorbid CKD & ESKD, raised peak serum sodium, admission category of illness 4 & 5, mechanical ventilation and unknown epidemiology link to increase mortality risk (Table 1) in patients with COVID-19 infection with kidney disease.

Table 1. Multiple logistic regression of risk factors for mortality due to COVID-19 infection in patients with kidney disease.

Factor	aOR	95% CI	*p*-value
Age	1.107	1.062 - 1.155	<0.001
Premorbid CKD & ESKD	4.545	1.556 - 13.279	0.006
Admission Category 4 &5	3.070	1.137 - 8.289	0.027
Peak Serum Sodium	1.126	1.039 - 1.220	0.004
Mechanical Ventilation	4.980	1.784 - 13.903	0.002
Epidemiology Link Unknown	2.946	1.166 - 7.446	0.022

aOR: adjusted odds ratio, CI: confidence interval, ESKD: End stage kidney disease, CKD: Chronic kidney disease

Conclusions: COVID-19 mortality rate remains high amongst those with ESKD, CKD and AKI. Older age, premorbid kidney disease, raised peak serum sodium, higher category of illness, mechanical ventilation and unknown epidemiology link increases its risk. Future studies should evaluate the incidence and outcome of COVID-19 infection in patients with kidney disease post vaccination.

No conflict of interest

POS-917

COVID-19 CAUSED CHRONIC KIDNEY DISEASE

Viazelda, AT*[1], Rudiansyah, M[2]

[1]Internal Medicine Residency Program- Department of Internal Medicine, Faculty of Medicine- Universitas Lambung Mangkurat / Ulin Hospital, Banjarmasin, Indonesia, [2]Division of Nephrology and Hypertension- Department of Internal Medicine, Faculty of Medicine- Universitas Lambung Mangkurat / Ulin Hospital, Banjarmasin, Indonesia

Introduction: COVID-19 pandemic is a global condition where respiratory disorders caused by SARS-CoV-2 infection are novel things and caused multi-organ damage. This including kidney damage even after negative SARSCov2 by swab. COVID-19 occurred inflammation conditions that could worsen kidney.[1] It is very important to consider the condition of patients who hospitalized with COVID-19 became a chronic kidney disease (CKD) and elevated creatinine serum. It was reported from a study at Yale University in March 2021, that patient after recovery from COVID-19, has decreased kidney function up to 32% and increased staging of AKI.[2]

Methods: We present the case of a 51years-old man with complaint is swelling of the body. The patient has a history of suffering from COVID-19 with swab PCR about 3 months prior being diagnosed as kidney disorders. In January 2021, he was admitted for COVID-19 for 2 weeks in Boejasin Hospital Pleihari, Indonesia, until the swab was negative. He complained his body get bigger and increased of fatigue after COVID-19. He came to Ulin Hospital Banjarmasin, April 17, 2021, the blood pressure was 180/100 mmHg, without dyspnea, and normal of oxygen saturation. The hemoglobin level was 8.7 g/dl, urea 254 mg/dl, and creatinine 22.8 mg/dl. The urinalysis was proteinuria 2+, glycosuria 1+, microscopic hematuria 1+, leukocyte sediment 4-8, and erythrocyte sediment 3-5. In January 2021, the ultrasound showed normal kidney, and current ultrasound showed blurriness in parenchymal cortex of kidney that indicated a chronic parenchymal disease bilateral. Patient was diagnosed a CKD stage V and underwent renal replacement therapy with hemodialysis.

Table 1. Laboratory Examination

Blood Test

Laboratory	14/4/21	15/4/21	17/4/21	Reference	Value
HEMATOLOGY					
Hemoglobin	8.7			14.0-18.0	g/dL
Leukocyte	5.7			4.0-10.5	ribu/uL
Erythrocyte	2.97			4.10-6.00	juta/uL
Hematocrite	25.4			42.0-52.0	Vol%
Thrombocyte	118			150.000-450.000	/uL
MCV	85.5			75.0-96.0	Fl
MCH	29.3			28.0-32.0	Pg
MCHC	34.3			33.0-37.0	%
Diff. Count					
Basophile%	0.3			0 - 1	%
Eosinophile%	13.1			1.0-3.0	%
Neutrofil%	52.5			50.0-81.0	%
Limfosit%	14.3			20.0-40.0	%
Monosit%	9			2.0-8.0	%
Ureum	254	179	80	0-50	mg/dl
Creatinine	22.8	15.05	5	0.72-1.25	mg/dl
ELECTROLYTE					
Natrium	133	134		136-145	mEq/L
Kalium	5.8	4.3		3.5-5.1	mEq/L
Chlorida	107	104		98-107	mEq/L
Osmolarity	316			285-295	mOsm/kg

Urine Test

URINALYSIS	14/4/21	
MACROSCOPIC		Reference
Colour	Yellow	Yellow
Clearance	Cloudy	Clear
Specific gravity	1.015	-
pH	7.0	-
Ketone	Negative	Negative
Protein-Albumin	2+	Negative
Glucose	1+	Negative
Bilirubin	Negative	Negative
Blood	1+	Negative
Nitrite	Negative	Negative
Urobilinogene	0.2	0.1-1.0
Leukocyte	1+	Negative
Urine Sediment		**Reference**
Leukocyte	4-8	0-3
Erythrocyte	3-5	0-2
Epithelia	1+	+1
Crystal	Negative	Negative
Cylinder	Negative	Negative
Bacteria	Negative	Negative
Other	Negative	Negative