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worldwide have been infected with COVID-19 since the outbreak. The clinical presentation is highly variable in symptoms, severity and organ involvement. COVID-19–related AKI is common in hospitalized patients, especially in those requiring intensive care unit management. It also has high impact on patients with ESKD on dialysis, kidney transplantation recipients and other CKD as they may be at higher risk of infection, associated morbidity and mortality. The renal damage in COVID-19 patients is the result of complex mechanisms induced directly and indirectly by SARS-CoV-2. The majority of reports strongly support that acute tubular injury (ATI) is the primary lesion driving AKI in COVID-19. A variant of focal segmental glomerulosclerosis called collapsing glomerulopathy has been defined, the entity now known as COVID-19 associated nephropathy (COVAN). Early report in USA showed that, on admission 20% had proteinuria, 18% had hematuria & 4% had combined proteinuria and hematuria. During hospitalization, 8% developed proteinuria, 13% hematuria & 5% combination of both. Our objective of this study is to identify the incidence of proteinuria and microscopic hematuria in COVID-19 patients admitted to Hospital Sultanah Bahiyah, Alor Setar.

Methods: This is a single centered, retrospective cross-sectional study examining the records of patients infected with COVID-19 admitted to Hospital Sultanah Bahiyah from August 13 till December 28, 2020. We have excluded patients with co-morbidity such as diabetes mellitus, hypertension, chronic kidney disease, liver cirrhosis, malignancy and pregnant individuals. These patients with COVID-19 infection had urine dipstick tests done upon admission.

Results: Among the 191 patients admitted, 31 patients were excluded from analysis due to preexisting co-morbidity. Hence a total of 160 patients were included in this study. The mean age was 34.6 years old, predominantly female patients (56.2%). The mean serum creatinine level was $69.5 \pm 16.6 \mu mol/L$. As shown in figure 1, patients were categorized into different severity of COVID-19 infection on admission, 46% were category 1 (n=87) , 22% were category 2 (n= 43) , 18% were category 3 (n= 35), 13 % were category 4 (n= 25), 1% were category 5 (n=1). The incidence of proteinuria and microscopic hematuria were 20.6% (n= 33) and 14.4% (n= 23) respectively on admission. The incidence of combined proteinuria and microscopic hematuria was 5.0% (n= 8). Table 1 and figure 2 demonstrate the number of patients with proteinuria, microscopic hematuria and both in each category of COVID-19 infection.
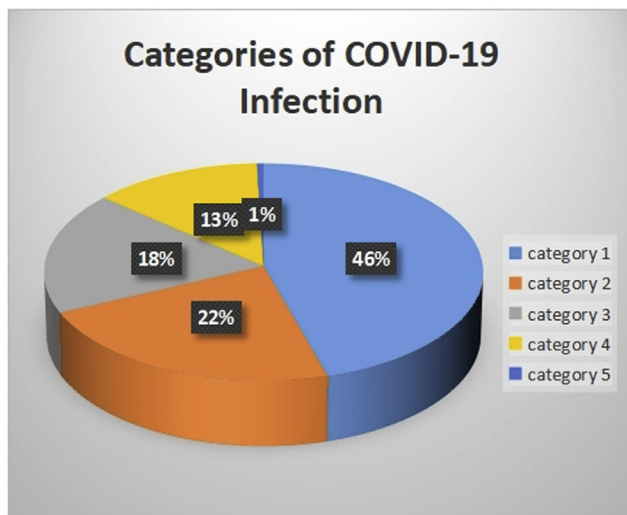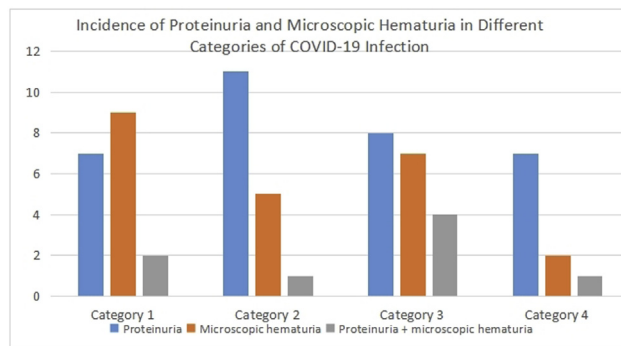
Figure 1:

Table 1:

Category	Proteinuria (n=33)	Microscopic hematuria (n=23)	Proteinuria + microscopic hematuria (n=8)
1	7 (21%)	9 (39%)	2 (25%)
2	11 (33%)	5 (22%)	1 (13%)
3	8 (24%)	7 (30%)	4 (50%)
4	7 (21%)	2 (9%)	1(13%)
5	0	0	0

Figure 2:

Conclusions: In our study, proteinuria and microscopic hematuria were relatively common in different categories of COVID-19 infection even without preexisting chronic illnesses. The incidence of proteinuria and microscopic hematuria in our study are comparable to other studies, but these didn't correlate with severity of COVID-19 infection. However, this study has significant limitations as it was a single center study. More data is needed to distinguish patients who had preexisting proteinuria and microscopic hematuria prior to presentation from those developed *denovo* in hospital.

No conflict of interest

POS-883

CLINICAL CHARACTERISTICS AND OUTCOMES OF ACUTE KIDNEY INJURY IN HOSPITALIZED PATIENTS WITH COVID-19: EXPERIENCE AT A MAJOR TERTIARY CARE CENTER IN PAKISTAN

YAQUB, S*[1], Hamid, A[1], Saeed, M[1], Awan, S[1]
[1]Aga Khan University, Medicine, Karachi, Pakistan

Introduction: Limited data is available from low-middle income countries on acute kidney injury (AKI) in patients hospitalized with COVID-19, its risk factors and associated outcomes. We aimed to determine the frequency and risk factors of AKI in hospitalized patients with COVID-19 and its impact on outcomes such as, length of hospital stay (LOS), need for kidney replacement therapy (KRT) and in-hospital mortality.

Methods: A retrospective observational study was conducted at a tertiary care center in Karachi, Pakistan from October to December, 2020. Data on demographics, comorbidities, medications, presenting clinical symptoms, therapies implemented and patient outcomes was collected from electronic and file-based medical records. AKI was defined according to KDIGO criteria.

Results: Of 301 patients admitted with COVID-19, AKI developed in 188 (62.5%). The peak stages of AKI were stage 1 in 57%, stage 2 in 14.9% and stage 3 in 27.7%. Of these, 15 (8%) required KRT. Patients requiring ICU admission (63.8% vs 34.5%), vasopressors (31.9% vs 5.3%) or mechanical ventilation (25% vs 2.7%) had a higher risk of AKI. Independent predictors of AKI were elevated blood urea nitrogen and creatinine (SCr) at the time of presentation, need for mechanical ventilation and use of anticoagulants. AKI, presence of proteinuria, elevated SCr at presentation, use of vasopressors and need for KRT were all significantly associated with in-hospital death and the likelihood of mortality increased with advancing stage of AKI.

Conclusions: AKI associated with severe COVID-19 in a Pakistani cohort was more frequent than Chinese, European, and North American data and the risk factors associated with its development were older age, presence of comorbid illnesses, proteinuria and higher levels of inflammatory markers. AKI was a strong independent risk factor for mortality, associated with a 7.7-fold increase in odds of in-hospital death. Moreover, patients with severe AKI (stage 3) had a greater likelihood of fatal outcomes compared to earlier stages or non-AKI patient groups.

Conflict of interest

Potential conflict of interest:

None