

INCIDENCE OF AKI IN HOSPITALIZED COVID 19 PATIENTS

EXPERIENCE FROM A SINGLE TERTIARY CENTER FROM RURAL INDIA

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Demographic and Clinical Characteristics: -

Study population: tumkur district, karnataka From July 2020 to December 2020, 1370 patients admitted to our hospital with COVID 19. Of these, 1252 were used in the analysis cohort after excluding the patients as per criteria. Median age of the patients was 53 with IQR of 42-62 and 69% of them were males. 41% patients had diabetes, 35% had hypertension, 2.6% (n = 33) had prior history of CKD, 8% had CAD, 3% had COPD, and 195 patients (15.6%) required ICU. Total of 1186 patients (95 %) got discharged and 66 patients (5%) died during hospitalization.

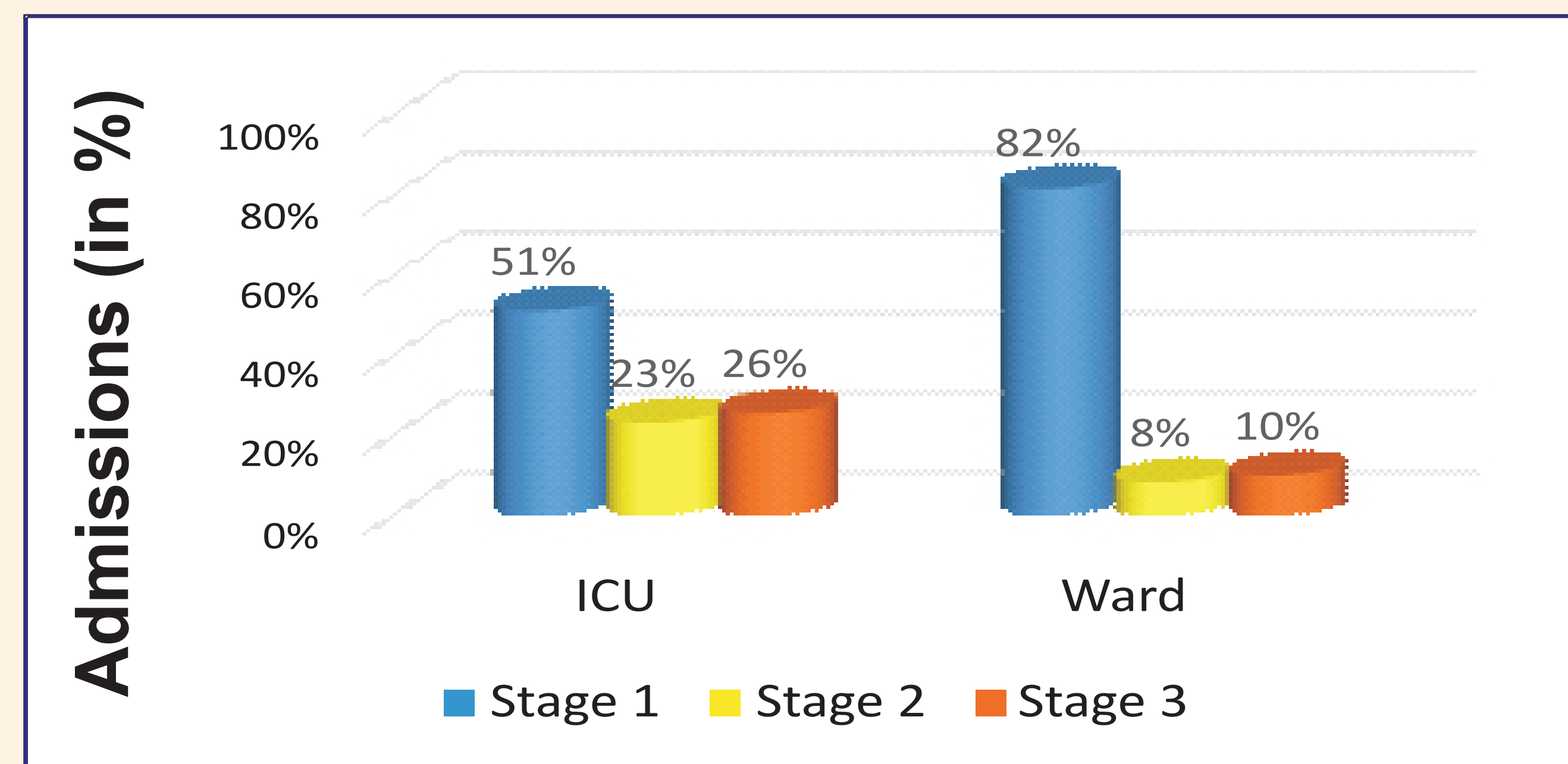


Fig.1 : Distribution of patients as per place of admission and AKI stages

Incidence and Severity of AKI: AKI occurred in 103 patients (8.2%), & 71 (68.9%) patients had stage 1, 15 (14.6%) patients had stage 2 and 17 (16.5%) patients had stage 3. 41.7% of ICU patients had experienced AKI with proportions of 51.1%, 23.2%, and 25.5% respectively for stage 1, 2, 3 as shown in FIGURE 1. The number of patients requiring dialysis support at some point was 7 which represent 6.7% of total AKI patient.

Inclusion criteria: All adults ages above 18yrs who are admitted in our hospital with COVID-19 infection which was diagnosed based on clinical presentation, microbiological confirmation and radiographic lung abnormalities.

Exclusion criteria: We excluded COVID-19 patients from our study if they were on maintenance hemodialysis, patients who were hospitalized for less than 48hrs of admission.

AKI and Outcomes: Patients who had AKI were more likely to have ICU admissions (41% vs 13.2% P<0.001), require ventilator support (NIV/invasive) 20% vs 7 (P<0.001)%. Duration of stay in hospital is also higher among patients with AKI. In-hospital mortality rate among patients with AKI (21%) was markedly higher than those patients without AKI (4%)

Predictors of AKI: independent predictors for AKI among the hospitalized patients with COVID 19 are age, HTN, CKD, IHD, and hypoxia on admission. Patients with high inflammatory markers such as WBC count, NLR, CRP, LDH, and D-dimer are associated with high incidence of AKI.

Treatment and Outcome	AKI	No AKI	Total	P-value
Mechanical Ventilator	20 (19.4%)	52 (4.5%)	72 (5.8%)	<0.001
NIV	22 (21.4%)	83 (7.2%)	105 (8.4%)	<0.001
ICU	43 (41.7%)	152 (13.2%)	195 (15.6%)	<0.001
Duration of stay	6 (4-9)	5 (4-6)	5 (4-6)	<0.001
Death	22 (21%)	44 (4%)	66 (5%)	<0.001

Table 1: Treatment and Outcomes in patients with AKI and without AKI

Recovery of AKI: - At the time of discharge, 47 of 103 (45.6%) had recovery of AKI and 34 of 103(33.9%) did not have complete recovery.

Conclusions: Renal involvement in the form of AKI or acute worsening of CKD was seen among patients with COVID 19 infections. Presence of AKI is a mortality predictor for patients with COVID. Age, HTN, CKD, IHD, and hypoxia on admission are high risk factors for AKI in SARS COV2 infection.