

# PREVALENCE, CLINICAL CHARACTERISTICS AND OUTCOMES OF PATIENTS WITH COVID-19 ASSOCIATED ACUTE KIDNEY INJURY – A TERTIARY CENTRE EXPERIENCE FROM SOUTH INDIA

Sathiyar Dheivendran, Deepak Kumar Selvanathan, Balasubramaniam T, Senthil kumar RP, Manoj kumar, Arthi M

## BACKGROUND:

The recent COVID-19 pandemic has caused a deleterious effect on health and all organ systems. The quintessential manifestation of renal involvement is acute kidney injury (AKI). However there is limited data on AKI epidemiology and outcomes in covid 19 patients in Indian setup. In our study, we aim to estimate the prevalence, clinical profile and short term outcomes such as mortality and acute kidney disease (AKD) at discharge in patients with Covid-19 associated AKI.

## METHODS:

This was a retrospective observational study amongst hospitalized COVID-19 patients admitted at our tertiary care centre between April 1 and December 31, 2021. All patients who developed AKI, acute worsening of preexisting chronic kidney disease and renal transplant recipients with acute graft dysfunction were included. ESRD on maintenance hemodialysis were excluded. Regression analysis was done to study the risk factors associated with mortality and AKD.

## RESULTS:

Out of 12,450 hospitalized patients with COVID-19, 578 (4.6%) patients developed AKI. Mean age was 58 years, out of which 60.7% were males. Comorbidities include DM (59.5%), hypertension (4.9%), CAD (35.3%), old CVA (23.5%), COPD (19.4%), CLD (11.2%) and pre-existing CKD (32.9%). Patients having KDIGO Stage 1, 2 and 3 AKI were 15.5%, 20.5% and 63.8% respectively. RRT was warranted in 40.7%, out of which 24.6% underwent hemodialysis (HD) and 16.1% acute intermittent peritoneal dialysis (PD). Severity of Covid-19 was classified as mild, moderate, severe, and very severe in 35.6%, 32.8%, 15.7% and 15.7% respectively depending on CT severity. The need for mechanical ventilation was 22%, ICU admission was 64% and inotropic support was 17%. Mean duration of hospital stay was 9±3.2 days Overall mortality in patients with AKI was 28.5% and in those requiring HD was 61.2% and in those on acute intermittent PD was 32.1%. AKI resolved in 35.6%. Among survivors without preexisting CKD, 28.7% patients had AKD at the time of discharge. The need for inotropic support, mechanical ventilation, hemodialysis, acute intermittent PD and preexisting CKD were the multivariate predictors of mortality. Diabetes mellitus, need for hemodialysis and inotropic support were multivariate predictors of AKD.

## CONCLUSION:

The prevalence of AKI in our study population was low (4.6%). Mortality in Covid-19 associated AKI was 28.7% and it was particularly high in patients with pre-existing CKD, hypoxemia, hypotension at presentation, higher CT severity, secondary sepsis, stage 3 AKI, and in those requiring mechanical ventilation and RRT. It is found that higher the severity of AKI, worse the prognosis. Among survivors, a significant percentage had AKD at the time of discharge.

