
COVID-19-associated Acute Kidney Injury in Hospitalized Patients: Incidence, Risk Factors and Outcomes in a Tertiary Care Center, Thailand

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Abstract

Background: Acute kidney injury (AKI) is common complication of COVID-19 and seem to be related with COVID-19 severity and outcomes. However, relatively little is known about the risk factors of AKI and outcomes among Thai hospitalized patients with COVID-19.

Objective: This study aimed to describe the AKI incidence, risk factors and renal outcomes in hospitalized COVID-19 patients with AKI.

Methods: The observational study involved a review of data from electronic health records of patients aged ≥ 18 years with diagnosed as COVID-19 pneumonia admitted to hospital from June 1 to September 30, 2021. We describe the frequency of AKI, dialysis requirement, and adjusted hazard ratios (adjusted HR) with AKI.

Results: A total of 966 hospitalized patients with COVID-19, AKI occurred in 170 (17.5%) patients. 23 patients (13% of all AKI) required dialysis. Multivariate logistic regression analysis revealed that pre-existing renal impairment (adjusted HR 1.74, 95%CI 1.03-2.93), inpatient diuretic use (adjusted HR 2.68, 95%CI 1.08-6.64), increase serum ferritin (adjusted HR 1.01, 95%CI 1.01-1.02), and presence of shock (adjusted HR 3.23, 95%CI 1.59-6.56) were independently associated with a higher risk for AKI. Discharged AKI patients, 44.7% had not recovered. In-hospital mortality in AKI patients was 54.1%. After adjustment for demographics, and laboratory values, the adjusted odds ratio for death was 11.5 (95%CI, 7.83-16.91).

Conclusion: AKI is common among patients hospitalized with COVID-19 and is associated with non-recovery of kidney function by the time of discharge. The main predisposing factor for the development of AKI are inpatient diuretic use, pre-existing renal impairment, more severe COVID-19 presentation.

Keywords: SARS-CoV-2; coronavirus 2019; kidney failure; diuretics; furosemide

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