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Systemic Immune-inflammation Index (SII) as Predictor of Mortality in Kidney Disease Patients with COVID 19 Infection

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Objectives: Inflammations plays important role in kidney disease. SARS-COV2 infection may trigger activation of multiple inflammatory pathways lead to cytokine storms that worsen the disease and is associated with higher mortality. This study aimed to investigate whether SII could be a predictor of mortality in kidney disease patients with COVID-19.

Methods: A cohort of kidney disease patients with COVID-19 admitted to Moewardi Public Hospital, Indonesia from April to November 2020 were retrospectively analyzed.

Results: 62 patients were included, in-hospital mortality was 35,5% (22 patients). The kidney conditions were, AKI 28 (45,2%), CKD 28 (40,3%), and Acute on CKD 4 (6,5%). Baseline SII at admission was significantly higher in patients who died compared to survived group ($P=0,034$). Pearson correlation test was significant with $p=0,034$. Further analysis was done to determine the differences in SII of each diagnosis of kidney disease. There were significant differences and correlations of SII in CKD Patients ($p=0.039$, CI: 95%) but not in AKI ($p=0.277$, CI:95%) and Acute on CKD ($p=0.552$, CI:95%). In Linear Regression test, SII were significantly associated with mortality ($p=0,039$, CI:95%) with total effect 37,3% on the mortality of kidney disease patient in COVID 19 infection.

Conclusions: SII has the potential to be utilized as a predictor of prognosis in CKD patients with COVID 19.