A study to assess the determinants and outcomes of acute kidney injury among patients admitted to critical care units of a tertiary care hospital of Udupi district

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"Abstract-

BACKGROUND: Acute Kidney Injury (AKI) in the intensive care unit (ICU) portends worse outcomes and leads to high mortality. Early identification of high-risk patients can improve their outcomes and may reduce ICU mortality rate. Critical care nurses routinely examine the patient to identify the early onset of AKI but more methods of identification are required.

OBJECTIVE: To identify the determinants and outcomes of acute kidney injury among critically ill patients.

METHODS: This study was a cross-sectional survey of patients attending ICU during a period of 3 months. Patients were divided into two groups based upon their outcomes (AKI/non-AKI, fatal/non-fatal cases). Data were collected from the medical records and from the patients or their representatives. Risk factors of AKI and mortality were identified by using regression analysis.

RESULTS: A total of 500 patients (mean age: 55.27± 15.84 years, male: 58.2%) were included in the study. The mean length of ICU stay was 14.4 ± 3.3 days. AKI was observed in 266(53.8%) patients with varying severity including AKIN-I in 86/266 (45%), AKIN-II in 60/266 (22.5%) and AKIN-III in 120/266 (45%) cases. Hypertension (OR 2.28 p=0.004), Ischemic heart disease (OR 5.236 p<0.001), vasopressor support on admission (OR 1.54 p 0.001) were found to be associated with AKI. Overall mortality in this study was 133 (26.6%). Sepsis (OR 3.2 p<0.001) and Pneumonia (OR 0.264 p 0.023) as causes of ICU admission were the significant predictors of AKI in this study.

CONCLUSION: AKI is found among half of the patients attending ICU and significantly associated with in-hospital mortality. Early identification of high-risk patients can be useful to reduce the burden of AKI and mortality in ICU.

Keywords: Acute Kidney Injury, AKIN, Sepsis"