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Risk Factors Associated with Mortality among Chronic Kidney Disease Patients on Regular Hemodialysis Presenting in Emergency Services

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Objectives: To find some of the reasons for which patients with CKD visit the emergency room and the reasons for their mortality

Methods: A cross-sectional study was done in the emergency room of Tribhuvan University Teaching Hospital, Kathmandu, Nepal. We conducted this study from 1 May 2018 to 31 October2018 among the adult CKD patients under regular hemodialysis. We used a convenience sampling method. Three hundred patients were included. We studied the following variables: patient's age, sex, risk factors, laboratory parameter during the emergency visit (viz. hemoglobin, pH, serum bicarbonate level, and potassium level), emergency hemodialysis, blood transfusion, and clinical outcome during emergency room stay.

Results: We enrolled 300 patients in the study. The mean age was 45.04 years in the mortality group and 45.69 years in the survival group 152 (50.7%) of patients had hypertension. Mean hemoglobin was 6.52gm% (SD = 1.93). Mean hemoglobin in survivor and the non-survivor group was 6.59 gm% and 5.58 gm% respectively. Serum creatinine was 1220.87 micromol/l and 1064.01 micromol/l in mortality and survivor group respectively. Likewise, serum potassium was 6.13 mEq/l and 5.74 mEq/l among mortality and survivor groups respectively. Binary logistic regression showed significant association ($p < 0.05$) of anemia, emergency dialysis and presence of sepsis with the mortality. There was significant correlation of presence of comorbidities, anemia, serum creatinine, serum potassium level, and sepsis with mortality. Area under the Receiver Operating Curve to predict mortality among CKD patients was 0.660 for potassium and 0.598 for serum creatinine.

Conclusions: Anemia, increased serum creatinine, and hyperkalemia was significantly correlated with mortality in chronic kidney disease Therefore, we should address these factors during the management of CKD patients.