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Prognostic value of random urine sodium in predicting outcomes of patients with acute decompensated heart failure

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Background & Aim: Heart failure is an urgent public health need being the leading cause of hospitalization and an important cause of morbidity and mortality in the world. The science of prognostication attempts to identify patient's clinical and biological characteristics that are associated with poor outcome. Risk prediction in patients admitted with acute decompensated heart failure remains a challenge hence this study was conducted to determine association between urine Na^+ level of patients admitted for acute decompensation of heart failure and outcome.

Method: All patients >19 years old admitted at the Philippine Heart Center for acute decompensation of heart failure with normal creatinine level at admission and with consent to participate were included in the study. Random urine sodium level was determined during first 24 hours of hospitalization. Patients were then followed up and clinical outcomes noted.

Results: Study included 150 patients which were grouped into three groups. First group included 31 patients with low urine Na^+ <30 mmol/L, 48 patients in the second group with normal urine Na^+ 31-90 mmol/L and 71 patients in the third group with high urine Na^+ >90 mmol/L. Baseline characteristics of the three groups were similar. The primary composite outcome of death occurred in 42 patients (28%): 42 patients (58%) in the 1st group, 11 patients (22%) in the 2nd group and 18 patients (25%) in the 3rd group which was statistically significant (p=0.002). Readmission rate did not differ statistically (p=0.889).

Conclusion: This study showed that there is an association between random urine sodium level and mortality of patients admitted for acute decompensation of heart failure. Low urine sodium level (uNa^+<30 mmol/L) is associated with poor outcome. Use of urine sodium is attractive because of its low cost and is widely available.

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