OBJECTIVES

Patients with chronic renal failure are at a higher risk of cardiac event and have poorer outcomes. Early diagnosis and treatment of cardiac disease are important to improve their survival. The objectives were to determine the superior cardiac marker to predict all-cause mortality at 6 years, and to determine their optimal cut off values.

METHODS

A prospective observational study was carried out. Patients were included if they presented to the ED with a chief complaint of chest pain and had chronic renal failure, defined as a serum creatinine of more than 130 umol/L. Creatine kinase (MB), Troponin T and Troponin I (using both Abbott and DxI-Beckman assays) were performed on the blood specimens drawn. All-cause mortality was traced from review of the patients’ case records and checking of the registry of deaths.

RESULTS

Seven hundred and fifty patients were recruited with a median age of 67. 60.2% of the study population were male. 87.5% of the population had CKD stage 4 and 5, with 32.4% on dialysis. The mortality rate at 6-year was 44.8%. Significant predictors were age (p<0.0001), absence of hypertension (p=0.006) and history of previous ischemic heart disease (p=0.025). Troponins T and I have higher AUC for all-cause mortality as compared to creatine kinase (MB). Troponin T had higher AUC when compared to troponin I by both Abbott and DxI assays. A cut-off of 0.08ug/L for troponin T had an AUC of 0.590 (sensitivity 54.8%, specificity of 58.2%, p<0.0001).

CONCLUSIONS

Troponin T is the superior cardiac marker for prognosticating all-cause mortality, with a higher cut-off recommended for patients with chronic renal failure, further research is necessary to examine the effect of previously known troponin, serial troponin testings and utilizing troponin levels to guide therapy.