

## **Abstract:**

**Objectives:** This study aim to determine the possibility of using serum UA and kidney function (CrCl, serum creatinine, BUN) as predictors of in hospital mortality and MACE in acute STEMI patients.

**Background:** AMI remains one of the most significant causes of death worldwide among cardiovascular diseases, and patients with AMI have a higher mortality rate during the first month following an event, especially during in-hospital stays. serum UA was found to be an independent risk factor for both cardiovascular and renal diseases. Furthermore, serum UA was found to be a strong marker of cardiovascular diseases including acute and chronic heart disease, heart failure and stroke. Reduced kidney function is a major risk factor with both increased risk for cardiovascular morbidity and mortality

**Methods:** Our study included 50 patients of acute STEMI patients take fibrinolytic therapy (streptokinase) in critical care department. Serum uric acid, serum creatinine, urea and creatinine clearance were measured on admission, after 48 hour and predischarge.

**Results:** In our study the mean age of the whole cohort was ( $62.50 \pm 22.50$  years). Age, left ventricular dysfunction and hypertension were significantly higher among non survival group of patients ( $P < 0.05$  for all). From univariate analysis, it was found that mean UA level on admission was higher among non-survival group as compared to survival group ( $11.43 \pm 2.91$  versus  $6.09 \pm 1.89$ ) ( $p < 0.001$ ). UA after 48 hour from admission was also significantly high ( $p = 0.006$ ). Regarding renal function, it was found that elevated BUN and impaired CrCl on admission is associated with increased in hospital mortality ( $69.52 \text{ ml/min} \pm 21.59$ ,  $P < 0.001$ ) ( $29.250 \text{ ml/min} \pm 9.067$ ,  $P < 0.001$ ) respectively. It was found by discriminant analysis statistics using step wise approach, serum UA and BUN variables on admission were best predictors of in hospital mortality independent of other conventional risk factors, the Wilks' Lambda 0.45  $p < 0.001$ , Sensitivity 87.5%, specificity 95.2%.

**Conclusion:** There was significant prognostic correlation between serum UA, BUN on admission and in hospital mortality among patients with acute STEMI who take fibrinolytic therapy (streptokinase). These can be a powerful, simple, inexpensive and accurate prognostic marker in these group of patients.

**Key words:** Creatinine clearance (CrCl); Major adverse cardiac events (MACE); Acute myocardial infarction (AMI); Uric acid (UA); ST-elevation myocardial infarction (STEMI); Blood urea nitrogen (BUN).