

Oral Presentation - 32

Role of Neutrophil Gelatinase-Associated Lipocalin in Predicting Acute Kidney Injury in Snakebite Victim

Subramanian Senthilkumaran¹, Ponnai Thirumalaikolundusubramanian², Narendra Nath Jena³

¹ Department of Emergency & Critical Care Medicine, Sri Gokulam Hospital and Research Institute, Salem, India

² Department of Internal Medicine, Chennai Medical College and Research Center, Trichy, India

³ Department of Emergency Medicine, Meenakshi Mission Hospital & Research Centre, Madurai, India

Abstract

Background: Acute Kidney Injury (AKI) remains a significant cause of morbidity and mortality in viper bite victim which is reflected by rise in serum creatinine. However, serum creatinine is an unreliable biomarker in early stage. Neutrophil gelatinase-associated lipocalin (NGAL) has emerged as an early marker for ischemic and toxic renal injury.

Objectives:

1. To find out the status of NGAL in the viper bite victims.
2. To compare the efficacy of blood NGAL against serum Creatinine in the diagnosis of the early stages of AKI
3. To determine the appropriate cut-off value NGAL to diagnosis of AKI among the ethnic population of southern India.

Methods: This is a prospective study involving 72 viper bite victims who were free from other co-morbidities and other causes for AKI were included in this study. All the patients included in this study had base line serum creatinine and plasma NGAL was estimated within 4-12 hours by standard methods. Hourly urine output, serial serum creatinine were monitored until the patient was transferred out of ICU.

Results: Plasma NGAL had a high sensitivity (95%) for detecting AKI in viper bite victims when it is still at the preventable stage. However, the cut-off value of plasma NGAL at ≤ 60 ngm/ dl was found to have low specificity (6 %). The receiver operator characteristic (ROC) curve for plasma NGAL, yielded sensitivity of 95% and specificity of 85% at the cut-off value of 252 ngm/dl, which is therefore recommended as the appropriate cut-off value to substantiate the early diagnosis of AKI with reasonable accuracy.

Conclusions: NAGAL seems to diagnose AKI earlier than serum creatinine in viper bite victims.