

Abstract Submission No.: A-0521**Study of Novel Biomarkers in early prediction of Snake Bite induced Acute Kidney Injury: A Systematic Review****Priti Solanky**¹, Nilesh Chavda²¹Department of Public Health, GMERS Medical College, Valsad, India²Department of Pharmacology, GMERS Medical College, Valsad, India

Objectives : Acute kidney injury (AKI) is a consequence following snakebite envenomization, leading to high morbidity and mortality if not intervened timely. Traditional biomarker for AKI is serum creatinine; however, newer biomarkers with high sensitivity and specificity have become available for early detection of AKI. As likelihood of mortality increases with higher stage of AKI, role of these novel markers in early prediction of snakebite induced AKI needed to be explored through this systematic review.

Methods : In this systematic review, databases searched were PubMed, Cochrane and Embase for the original studies published till 31st December 2023 using keywords based on formulated research question. After initial screening, out of 54 studies found, only studies involving patients developing AKI following snakebite and diagnosed with Kidney Disease Improving Global Outcomes (KDIGO) scale along with laboratory parameters were included. Out of identified 18 studies, 7 were further omitted based on exclusion criteria. Data extraction and analysis was performed on final selected 11 studies.

Results : Out of total 1023 patients of snakebite, 356 (34.8%) developed AKI. Clinical diagnosis of AKI was made using KDIGO criteria. Important biomarkers found were serum cystatin C (sCysC) (AUC-ROC: 0.78 to 0.95), urine neutrophil gelatinase-associated lipocalin (uNGAL) (AUC-ROC: 0.67 to 0.74, PPV 99.37%, $r=0.47$ & $p=0.001$) and urine clusterin (uClu) (AUC-ROC: 0.66 to 0.81). Other biomarkers included LDH, Angiotensin-1 (Ang-1), Vascular cell adhesion protein-1 (VCAM-1). Majority of the studies reported significance of novel biomarkers in early phase. After 8 hours, there was no significant difference between S.Creatinine levels and novel biomarkers. Hence novel biomarkers can be utilized for earlier detection of AKI where S.creatinine levels are not yet raised.

Conclusions : By early prediction of AKI, novel biomarkers can be helpful in early initiation of treatment and preventing further complications. Generating robust scientific evidence to establish their role is a current need to improve patient outcome.