DEVELOPMENT OF CHRONIC KIDNEY DISEASE FROM SNAKE BITE INDUCED ACUTE KIDNEY INJURY- RISK ASSESSMENT

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Introduction:- Snake bite related AKI is a very common incident in our country which often p4rogresses to CKD. Till now there is no such approved biomarker predicting AKI to CKD transition. This is a prospective cohort study that evaluated different renal functional and injury biomarkers and assessed their role in predicting the risk of progression to CKD.

Study methods:- This is a prospective cohort study conducted at Dept of Nephrology, NRSMCH from July 2018 to Jan 2020. After collecting blood and urine samples following biomarkers measured- plasma and urine KIM1, NGAL and serum cystatin c. Data expressed as mean ± standard error and diagnostic performance of each biomarker in predicting CKD transition assessed by area under receiver operator characteristic curve (AUC-ROC).

Study results:- All the plasma and urinary markers were significantly altered after renal injury. Inflammation and stress level were remain elevated over the follow up time period. In the follow up of 42 patients, 14 patients showed <90 ml/min/1.73m2 estimated glomerular filtration rate, 18 patients showed higher urinary microprotein (>50mg/L), 14 patients showed elevated plasma creatinine (>1.2 mg/dl) and 16 patients showed hematuria at different follow up time periods up to 6 months. At the end of follow up, 15 patients (35.71%) showed signs of persistent renal insufficiency indicating long term renal impairments. NGAL and KIM1 both in plasma and urine and plasma Cystatin C were altered significantly in the studied groups. Plasma and urinary NGAL, plasma KIM1, and plasma Cystatin C were significantly elevated in the different time point of follow up period. AUC-ROC analysis showed a modest diagnostic performance for these markers.

Conclusions:- It can be concluded that these markers can be an early biomarker for detection of CKD from SAKI