After 24 hrs, mean serum creatinine level was found 1.70±0.48 mg/dl and 1.15±0.20 mg/dl in group I and group II respectively. After 48 hrs, mean serum creatinine level was 2.62±0.88 mg/dl in group I and 1.14±0.20 mg/dl in group II. After 24 hrs and after 48 hrs, mean serum creatinine level was significantly ($p<0.05$) higher in group I than group II. In group I, serum creatinine level at baseline vs after 24 hrs and baseline vs after 48 hrs was statistically significant ($p<0.05$). Based on the Receiver Operator Characteristic (ROC) curve NGAL level had an area under curve 0.882 which gave a cut off value of ≥185.90 ng/ml, with 75.0% sensitivity and 100.0% specificity for prediction of AKI (Figure I). Eight patients were AKI positive among them 6 (75.0%) patients were NGAL positive and 2 (25.0%) were NGAL negative. All non AKI patients (34 patients) were NGAL negative. Negative not significant Pearson's correlation (r=-0.042; p=0.921) was found between serum creatinine level after 6 hrs with post operative NGAL in AKI patients. Positive significant Pearson's correlation was found between serum creatinine level at 24 hrs (r=0.488; $p<0.05$) and 48 hours (r=0.817; p=0.013) with post operative NGAL in AKI patients.

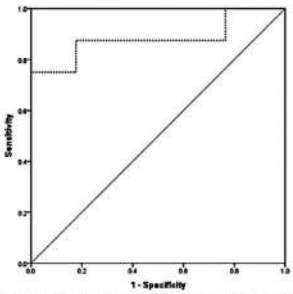

Figure I: Receiver-operator characteristic (ROC) curve of NGAL level for prediction of AKI.

Conclusions: Diagnosis of AKI was delayed by 24-48 hrs by serum creatinine measurement. This study has demonstrated that level of urinary NGAL concentration at 6 hours post CPB increased before the increase of serum creatinine level and urinary NGAL is an early predictor of AKI in adult CABG patients.

MON-221

ROLE OF IRON IN SNAKE VENOM INDUCED ACUTE KIDNEY INJURY AND IT'S SEVERITY IN EXPERIMENTAL MODEL.

Mishra, R*[1]

[1]Department of Physiology- University of Calcutta- 92- APC Road- Kolkata, Physiology, Kolkata, India

Introduction: Previous studies have reported that iron, an important micronutrient, have a major role in acutekidney injury (AKI) and chronic kidney disease. It acts by increasing oxidative stress andinflammation. Snake envenomation is one of the major responsible factors for producing AKI in ruralarea. So, in this study we have investigated whether the catalytic iron plays role in etiology andseverity of snake venom induced AKI. The focus of the study is to investigate the role of iron in SAKI pathogenesis and consequentdeterioration of kidney function by using Deferoxamine, an iron chelator drug.The focus of the study is to investigate the role of iron in SAKI pathogenesis and consequentdeterioration of kidney function by using Deferoxamine, an iron chelator drug.

Methods: To find out the role of iron in Russell Viper venom induced nephrotoxicity, male adult swiss albinomice were taken and RVV was injected intramucscularly at a dose of 30μg/100gm body weight. Aniron chelator drug, Deferoxamine was used for iron chelation by which might indicate the role of catalytic iron. 72 hours after envenomation inflammatory and stress parameters e.g. TC, DC, NO,TBARS activity, OSI, free iron were measured in plasma and renal tissue. Severity of renal injury was denoted by plasma creatinine and urinary microprotein level. Renal histology was done by H-E and picrosirius red staining. Anti TGF-β, anti CTGF antibody were used for IHC study. Images wereanalyzed with imageJ image analysis software. Data were represented as mean ± standard error of mean.

Results: The iron chelator significantly reduced the AKI markers, inflammation, oxidative stress levels and also reduced the level of plasma and tissue catalytic iron. These findings were supported by histological study. The severity of AKI was also significantly reduced by iron chelation as noted in fibrotic markers.Collagen deposition in renal tissue and level of TGF-β and CTGF were significantly increased after envenomation and were reduced by the Deferoxamine treatment.

Conclusions: The iron chelator ameliorates venom induced nephrotoxicity and reduces its severity by delaying theonset of fibrosis along with inflammation and oxidative damage. So it can be concluded that ironplays a role in SAKI and its severity.

MON-222

URINARY NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN (nGAL) IN EARLY ACUTE KIDNEY INJURY (AKI) PREDICTS PROGRESSION AND NEED FOR DIALYSIS

NANDAGOPAL, N*[1], Annigeri, R[1], s, R[2], Rao, S[1], Kc, P[1], s, B[1], Vadamalai, V[1], Seshadri, R[1]

[1]Apollo Hospitals- Chennai, Nephrology, chennai, India, [2]Apollo Hospitals-Chennai, Nephrology, Chennai, India

Introduction: Predicting the progression of acute kidney injury (AKI) and need for renal replacement therapy (RRT) in early stages of AKI would be a useful bedside tool for clinicians, especially in resource-limited countries to optimize resource utilisation. We tested the predictive value of urine neutrophil gelatinase-associated lipocalin (NGAL) measured in the AKI stages 1 and 2, to predict progression of AKI and need for RRT.

Methods: We analysed 288 patients of AKI diagnosed based on KDIGO criteria, who had measurement of urine NGAL (uNGAL) in AKI stages 1 (n=202) and 2 (n=86), admitted to a tertiary care hospital in South India. The progression of AKI was defined as the progression to a higher stage of AKI with a rise of at least 0.5 mg/dl in serum creatinine from the time of measurement of uNGAL or need for RRT. The outcomes studied were progression of AKI, need for RRT and hospital mortality.

Results: The mean age was 61.5±13.4 years and 78% were males. Sixty-two patients (21.5%) had progression of AKI, 55(19%) required RRT and hospital mortality was seen in 77(27%). The uNGAL (ng/ml) was 1778±2325 in progressive AKI and 399±1019 in non-progressive AKI patients ($p<0.001$). Similarly, uNGAL (ng/ml) was 1921±2432 in patients who ultimately received RRT and was 408±1007 in patients who did not receive RRT ($p<0.001$). The area under the curve (AUC) of receiver operating characteristic curve (ROC) for uNGAL to predict progression of AKI was 0.79 and to predict the need for RRT was 0.78. The cut-off uNGAL value of 1000 ng/ml to predict progression of AKI had sensitivity of 49.2% and specificity of 90.2%, whereas to predict need for RRT, the sensitivity was 52% and specificity was 90%.

Strengths: Ours is a large study from a developing country, where AKI demography may be different from developed countries.

Limitations: Ours is a single center study and needs validation from other centers in developing countries.

Conclusions: Urine NGAL, when measured in early stages of AKI, was a strong predictor of progression of AKI and need for RRT. A cut-off uNGAL value of 1000 ng/ml is a reliable specific marker of progression of AKI and requirement of RRT when measured in AKI stages 1 and 2.

MON-223

CHANGES IN MERCAPTURATES OF CYSTEINE-DISULFIDES ASSOCIATE TO ACUTE KIDNEY INJURY INDUCED BY CISPLATIN AND GENTAMICIN

Gonçalves-Dias, C[1], Soto, K*[1,2], Sancho-Martinez, SM[3], Correia, MJ[1], Coelho, NR[1], Prieto, M[3], Monteiro, EC[1], López-Hernández, FJ[3], Pereira, SA[1]

[1]CEDOC- Chronic Diseases Research Centre- NOVA Medical School/Faculdade de Ciências Médicas- Universidade NOVA de Lisboa, Translational Pharmacology, Campo dos Mártires da Pátria- 130- 1169-056 Lisboa, Portugal, [2]Hospital Fernando da Fonseca, Nephrology, Lisboa, Portugal, [3]Institute of Biomedical Research of Salamanca IBSAL & University of