ISNSCCON 2016, Tiruchy: Abstracts: Acute Kidney Injury

AK1: An Unusual Case of Poisoning with AKI

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Aim:A 40 years aged lady with alleged history of consumption of insecticide [AGADI-SC] on 20/09/2015at 9am presented with h/o GTCS, 4 episodes at 4pm admitted at private hospital and was treated conservatively .On day two she developed anuria and she was initiated on hemodialysis and referred to our centre for further management.

Materials and Methods: Patient was evaluated and supported with hemodialysis .Biopsy was done in view of non-recovering AKI

Results: Haemoglobin:10 g/dL, total leucocyte count:7800/cumm, platelets: adequate, serum creatinine: 6.2mg/dL, total serum bilirubin:1.8mg/dL, direct bilirubin: 0.4mgdL, indirect bilirubin:1.4mg/dL, SGOT-118IU/L. SGPT-76IU/L, ALP-655IU/L, serum albumin-2.8g/dL, serum CPK: 1119→82 micrograms per liter,serum LDH: 631 IU/L, corrected calcium - 7.2mg/dL, serum phosphorus: 4.1mg/dL, USG abdomen: RK-9.8 x 4.1cm,LK-9.7 x 3.8cm, bilateral grade 1 echo texture, color Doppler of renal vessels:- normal study,

REPORT NO: FSLS(AS)/5150788001	DATE OF ISSUANCE OF REPORT: 21/10/2015
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CUSTOMER DEATAILS:	SAMPLE DETAILS:
ISSUED TO: **M/s. National Institute of Nutrition** National Institute of Nutrition Tarnaka, Hyderabad.	NAME OF SAMPLE: Sample BRAND/ GRADE/ VARIETY:NA BATCH NO/ LOT NO/ CODE: Leelamma ✓ DATE OF MANUFACTURING: NA DATE OF EXPIRY: NA QUANTITY OF SAMPLE RECEIVED: ~3 mL MODE OF PACKING: In sealed bottle SEAL DETAILS: Intact. Seal No: NA ANY OTHER INFORMATION: Nil

SAMPLE NOT DRAWN BY FSLS(AS)

TEST DETAILS AND RESULTS:

REGISTRATION DATE: 14/10/2015	ANALYSIS START DATE: 15/10/2015	ANALYSIS COMPLETED DATE: 16/10/2015

S. No.	TESTS	Limit Of Quantification	UNIT	RESULT
1	Fipronil (Including Fipronil sulphide and Fipronil Sulfone)	0.01	ppm	0.42

Remarks:

1) Samples tested on Received Basis.
2) Method: Liquid-Liquid Extraction
3) Instrument used : LC-MS/MS (Make: Agilent Technologies, Model: 6460).

***** End of Report ****

Renal Biopsy:Light microscopy: 11 glomeruli. Glomeruli are normal. Extensive tubular cell necrosis with cytoplasmic swelling and vacuolation and intracellular inclusions with intratubularred cell casts. There is tubular dilation with flattening of tubular epithelium, loss of brush border, loss of basolateralinfoldings and blebbing of apical cytoplasm. There is loss of individual tubular cells with gaps along tubular basement membrane. Immunofluorescence microscopy: No immune deposits.Final Diagnosis:Fipronil poisoning with Hepatitis and AKI – III

Discussion: Patient was given 10 sessions of hemodialysis and after 4 weeks,there is improvement in urine output to 2L per day and serum creatinine at discharge was3.1mg/dL.Presently patient serum creatinine normalized to 0.9mg/dL.Fipronilis a broad spectrum N Phenyl Pyrazoleinsecticide.Fipronil is toxic to insects by ingestion or contact.Fipronil blocks GABA A gated chloride channels in the central nervous system.Disruption of GABA A receptors by fipronil prevents the uptake of chloride ions resulting in excess neuronal stimulation and death of the target insect.Fipronilsulfone,the primary biological metabolite is reportedly 6 times more potent in blocking vertebrate GABA gated chloride channels than fipronil.Fipronil also causes lipid peroxidation,oxidative stress and histopathological changes in liver and kidney which could be due to toxic effect of fipronil associated with generation of free radicals.

AK2: Lung ultrasound B line Score reliably predicts Hydration Status in Acute Kidney Injury Patients in Intensive Care Unit undergoing Renal Replacement Therapies

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Introduction and Aim: Lung ultrasound has now been considered a valid and fast method that allows quantification and monitoring of extravascular lung water (EVLW). There is paucity of such studies in ICU patients. Bioimpedanceanalysis (BIA) is a validated tool for EVLW but is not easily available.The aim of this study is to test the hypothesis that lung B line score is a reliable surrogate of hydration status in acute kidney injury patients in ICU needing RRT.

Material and Methods: A prospective observation study was conducted on 226 acute kidney injury (AKI) patients in ICU needing RRT.
Exclusion criteria were Age <18years, pregnant, amputees, cardiac pacemakers, pre-existing lung diseases and ascites. Lung B line score as per validated technique , BIA measurements and baseline data were collected pre and post dialysis. Lung B line score and other covariates were fitted into a regression model using BIA as the standard test. Based on BIA delta hydration relative (HS rel), patients were divided into normohydration and hyperhydration using a cut-off of 15%.

Results: A linear regression model in predialysis state showed that only Lung B line score could significantly predict lung water (const 8.79, Coef.0.203, p value 0.00). In the postdialysis state Lung B line score perfectly predicted lung water (const 9.98, Coef. 0.261; p value 0.00).Bland Altman plots showed good agreement between Lung B line and hydration status (BIA) pre and post dialysis. The Lung B line score>15 nearly perfectly predicted hydration status in both pre and post dialysis states.

Discussion: Lung B line score is a good surrogate of EVLW and reliably predicts reflects hydration status pre and post dialysis in AKI patients.

AK3. A Study on Acute Kidney Injury following Snake Bite Envenomation

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Aim: This study was conducted to 1) estimate the incidence of snake bite induced acute kidney injury (AKI) and 2) to determine the clinical predictors for acute kidney injury in these patients.

Materials and methods: This prospective study was carried out at Kasturba Hospital, Manipal, Karnataka, India over a period of 3 years. A total of 343 patients with snake bite envenomation were studied of which 89 patients developed AKI (Group A) and 254 (Group B) did not. History, examination findings, laboratory results and outcomes were recorded and compared between the two groups.

Results: The incidence of snake bite induced AKI was 25.9% in our study. In group A, 64 (71.9%) patients were male and in group B, 159 (62.6%) patients were male. The mean age was 47.2 years in group A and 53 years in group B. Out of 343 patients, 302 had cellulitis, 205 had bleeding tendencies, 89 had oliguria, 46 had neuroparalysis, and 43 had hypotension at presentation. Viper bite was the commonest among both groups and it was seen in 80 (89.9%) patients in group A and in 167 (65.7%) patients in group B. After multivariate analysis, time interval between snakebite and anti-snake venom administration (P <0.0001), hypotension at presentation (P<0.0001) andprolongedprothrombin time (P = 0.001) were significant independent predictors of AKI. Of the patients in group A, 62 (69.6 %) patients required hemodialysis and 5 patients has HUS and were treated with plasma infusion. Of the 89 patients with AKI; 26 expired, 5 developed CKD and the others recovered normal renal function.

Discussion: Snake bite induced AKI developed in 25.9% of patients in our study and is an important cause of morbidity and mortality (29.2% in our study). Viper bite is the commonest cause. Factors associated with AKI are interval between snakebite and anti-snake venom administration, hypotension and prolonged prothrombin time.

Abstract to be a considered for: a free paper or a poster session

AK4:Clinical profile of Geriatric Acute Kidney Injury in a tertiary care centre from South India

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Introduction: The incidence of acute kidney injury (AKI) is high in the elderly, who comprise of an ever-growing segment of the population. Elderly patients pose a different set of diagnostic and therapeutic challenge owing to their associated co-morbidities. AKI in elderly is associated with an increased risk of mortality and morbidity like prolonged length of stay and progression to chronic kidney disease. Data regarding the clinical profile of AKI in elderly from south Indian population is limited. Hence we present this analysis of the etiological and prognostic factors associated with AKI in elderly population from south India.

Aim: To study the clinical profile and outcomes of geriatric AKI.

Methods: It was a cross sectional prospective observational study conducted in a tertiary care teaching hospital from Bangalore, during the period from May 2011 to October 2012. Institutional ethical committee clearance was obtained. Informed consents were obtained from patients who fulfilled the inclusion criteria. Elderly patients > 60 years of age with features of AKI [RIFLE criteria]1 at admission & those who developed AKI following hospital admission were included in the study. Demographic details, detailed medical history, comorbid conditions, etiological factors, prognostic factors and outcomes were collected. Statistical analysis was done using SPSS software.

Results: 200 patients fulfilled the inclusion criteria and were enrolled into the study. The mean age was 70 years 6 months. 59% of them were males & 41% were females. Peak incidence of AKI was in age group 60-69 years. Diabetes was seen in (44%), hypertension in (35%), IHD in (19%), and COPD in (12 %) of cases. 91% patients had AKI at admission and the rest developed during hospitalisation. Average duration of hospital stay was 7 days. Etiological factors for AKI are grouped as medical (87%), surgical (11%), gynaecological (2%). Sepsis was the most common etiology of AKI among medical causes. Among sepsis, pneumonia and urosepsis were the commonest causes of AKI. Medical AKI had a better outcome compared to surgical causes of AKI. 56(28%) patients required dialysis. 44 patients received HD and 12 received PD. The Overall mortality in the study group was 15%. Mortality among oliguric AKI (25%) was higher than in non oliguric (5%) patients with a significant p value of 0.002. Similarly mortality rate was higher among post-surgical AKI rather than in AKI due to medical causes [P value <0.001], and in patients who required dialysis had a higher mortality rate compared to patients with less severe grades of renal failure in our study.

Conclusions: AKI in elderly presents with varied manifestations. Sepsis is the most common cause of AKI in elderly with high morbidity and mortality. Oliguria, post-surgical AKI, and need for dialysis were independent predictors of mortality in study.

AK5: One Year Follow up Study of Outcome in cases of Acute Kidney Injury

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Introduction: Even though most cases of AKI are reversible within weeks of occurrence, data from recent observational studies suggest an association between AKI and subsequent CKD. This is due to incomplete healing process. Observational studies have shown that, acute kidney injury leads to new CKD, progression of existing CKD, an increased long term risk of ESRD, and excess mortality.

Materials and methods: A prospective study was conducted among patients who were 13-60yrs of age, admitted with acute kidney injury in Dept. of internal medicine, Govt. TDMC, Alappuzha during March 2013 to August 2014. And they were followed up for a period of 1 year. Patients with history of CKD, Systemic hypertension, Diabetes mellitus, Cardiac failure and chronic liver disease were excluded from the study.

Results:88 cases of acute kidney injury were studied. 60% were males. Infections like Leptospirosis and Cellulitis were the most common etiology. 27 patients (31%) had e GRF <60ml/min/1.73m2 at 3 months of follow up and 21 patients (24%) had e GFR of <60ml/min/1.73m2 at 1 year follow up. Renal biopsy was done in 21 cases among those who had persistent low GFR at 3 months. 6 were not willing for renal biopsy. Ig A Nephropathy was the commonest pathology identified biopsy followed by tubular necrosis.

High level of proteinuria (>300mg/day) and presence of active urinary sediment at presentation were associated with more risk of development of CKD. Those in the age group of >40 years also had more risk of development of CKD. Initial S. Creatinine level, Urine output and requirement of hemodialysis at presentation were not associated with subsequent development of CKD.

Conclusion: From the study it is concluded that simple markers like level of proteinuria and presence of active urinary sediment at presentation may predict the risk of persistent renal damage and development of CKD. The limitation of the study was a small sample size. There were a significant number of drop outs on follow up.

AK6: The Etiological and Clinical Profile of Acute Renal Failure in Medical causes of Tropical diseases in Adults and factors that predict the outcome

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Aim: Aim of this study is to determine the etiological and clinical profile of acute renal failure in medial causes of tropical diseases in adults and factors that predict the outcome.

Materials and methods: It is a prospective observational study conducted in King George hospital from October 2010 to February 2012. Inclusion criteria: included 100 cases Medical causes of tropical diseases. Exclusion criteria (1) Patients with evidence of CKD.(2)Those with contracted kidneys.(3)Age less than 15 years.Detailed history was taken according to the proforma. Vitals like respiratory rate, pulse rate, temperature blood pressure were noted daily. I/o chart was maintained. Laboratory tests like renal function tests, blood and urine cultures were done. Viral serology for HIV, HB Sag, HCV, were done. Smear for MP, leptospira, and dengue IgM Abs were done. Bleeding time, clotting time, prothrombin time and FDP were done in selected cases. Renal ultrasound was done to know about the sizes echotexture and any evidence of scarring .Renal biopsy if AKI persist beyond 3 weeks.After admission serum creatinine was repeated every 2 days during hospital stay and during the follow up every 3 weeks till the end of 3 months.

Results: Males are 64% and females are 36%. Leading symptoms were oliguria (81%), pedaledema (36%), vomiting (61%), fever (72%), cough (16%), shortness of breath (42%), jaundice(43%).Hypertension was present in 22%.Malaria 40%, Leptospirosis 6%, diarrhoea associated 12%, PIGN 8%, Snake bite 12%, sepsis 16%, Poisons and drugs 6%. Factors predicting outcome: Mortality observed was 8%. irreversible renal failure was seen in 2% . partial renal failure was seen in 2% .complete recovery was seen in 86%. leading causes of mortality are sepsis in 25%, snake bite 25%, malaria 25%, diarrhoea 25%.mean age of patient who died 44 years and who were alive were 49.49 years.Sepsis was significantly associated with poor out comes compared to malaria, snake bite, PSGN, leptospirosis, poisoning. ($p=0.01$) Malaria was not significantly associated with poor out comes. ($p>0.05$).Snake bite was not significantly associated with poor out comes.Leptospirosis was not significantly associated with poor out comes. ($p>0.05$).Laboratory:leucocytosis significantly associated with poor out comes. ($p=0.001$) Presence of severe anaemia was significantly associated with poor out comes compared to normal renal function. ($p<0.05$) Serum bilirubin >15 mg/dL was significantly associated with poor out comes compared with normal out comes. Serum calcium, phosphorus, sodium, uric acid are not significantly associated with poor out comes when compared with normal.

Discussion: Common symptoms were fever, vomiting, jaundice.Most common causes of AKI were Malaria, Sepsis, Snake bite.Mortality was 8%,Irreversible&Partial renal failures 2%&2%, Complete recovery 88%.Sepsis, serum bilurubin>15mg/dl, Leucocytosis, severe anaemia associated with poor out comes.

Abstract to be a considered for: a free paper or a poster session

AK7: Study on the Incidence and Outcome of Acute Kidney Injury in patients with Acute Pancreatitis

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Aim & Objectives:1. To identify the incidence of acute kidney injury in patients admitted with acute pancreatitis.
2. To determine the severity of acute kidney injury in these patients based on the KDIGO (Kidney Disease Improving Global Ooutcome) criteria, based on urine output andthe serum creatinine level.
3. To assess the mode of management and outcome of the renal dysfunction in these patients.

Materials and methods: Study design**:** Cross sectional study.
Study period**:** January 2015 to June 2015
Case definition: Patient diagnosed to have acute pancreatitis clinically,based on the Atlanta classification: Presence of two among the following three criteria is considered.
1. Abdominal pain suggestive strongly of pancreatitis
2. Serum Amylase or Lipase activity at least 3 times greater than the upper limit of normal.
3. Characteristic finding of acute pancreatitis on trans-abdominal ultrasound scan or CT scan.

KDIGO AKI definition

Stage	Serum creatinine	Urine output
1	1.5-1.9×baseline or ≥0.3 mg/dl (≥26.5 mmol/l) increase	<0.5 ml/kg/h for 6-12 h
2	2.0-2.9×baseline	<0.5 ml/kg/h for >12 h
3	3.0×baseline, or increase in serum creatinine ≥4.0 mg/dl (≥353.6 mmol/l), or initiation of RRT, or decrease in eGFR <35 ml/min/1.73 m² for patients <18 years	<0.3 ml/kg/h for ≥24 h or anuria for ≥12 h

Exclusion criteria**:**1. Patients having chronic pancreatitis presenting with acute severe pancreatitis.
2. Patients with known CKD.
Sample size: 100patients .Grouped into two 1)Acute pancreatitis (AP) with Acute kidneyinjury(AKI) 2) AP without AKI. Pulse, blood pressure, urine output, blood urea, serum creatinine, blood sugar, liver function test, serum calcium and complete blood count checked for all patients
Statistical methods:Descriptive statistics was done for all data and were reported in terms of mean values and percentages. Suitable statistical tests of comparison were done. Continuous variables were analysed with the unpaired t test. Categorical variables were analysed with the

Chi-Square Test and Fisher Exact Test. Statistical significance was taken as $P < 0.05$. The data was analysed using SPSS version 16.

Results: The incidence of AKI in Acute pancreatitis in this study was 32%.29 males and 3females among 32 pancreatitis with a mean age of 41.97 years. Majority of the Patients who developed AKI were alcoholic (78.13%), followed by carcinoma pancreas. The increased incidence of diabetes in AP with AKI Group compared to the AP without AKI Group is statistically significant (p value0.0041). In patients belonging to AP with AKI Group, the majority were alcoholics(n=27, 84.34%).Majority of the AP with AKI group patients had stage 1 according to the KDIGO guidelines (n=26, 81.25%) followed by stage 2 (n=4, 12.50%) and stage3(n=2,6.25%).93.75% patents managed conservatively,2 cases needed hemodialysis, mortality was 12.50%..The increased mean serum creatinine, decreased mean urine output levels in AP with AKI Group compared to AP without AKI Group is statistically significant. The association between the study groups, systemic hypertension, smoking, elevated serum amylase, serum lipase level not statistically significant.

Conclusions: 1. In this study one third of patients with acute pancreatitis developed acute kidney injury.
2. Based on the KDIGO staging of acute kidney injury, majority of the patients were in stage-1.
3. Diabetes mellitus and ethanol use were significantly related with development of AKI.
4. Amylase and Lipase level did not correlate with the incidence of AKI.
5. Majority of patients with AKI due to acute pancreatitis recovered completely at discharge.
6. Dialysis support was required only in a minority of patients.
7. Mortality was low.

AK8: Pattern Of Acute Kidney Injury and its Outcome seen in medical wards in a tertiary care referral hospital

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Introduction: In hospitals requiring acute care admissions, Acute Kidney Injury (AKI) affects 5-7 % of patients. In critical units it accounts for 30 % of admissions. AKI is associated with a increased risk of death, particularly in patients admitted to the critical care unit where the hospital mortality exceeds 50%.

Aim of the study: 1. To study the pattern of AKI seen in medical wards in our tertiary care hospital.

2. To study the outcome of AKI .

Materials and methods : We prospectively observed our patients hospitalized in our general medicine ward during January 2015 to August 2015 for any elevation in serum Creatinine as per KDIGO guidelines and symptoms suggestive of AKI. We excluded chronic kidney disease patients. Patients selected were subjected to symptom analysis, clinical examinations, appropriate laboratory investigations and imaging. The outcomes of the study were analysed using multi variate logistic regression analysis to predict recovery in AKI.

Observations: This was a prospective observational study. We observed 102 patients. 62% were males.Mean age was 49.9 ± 8.09. About 91 patients recovered (89%) and 11 patients deteriorated (11%). Majority of the recovered group patients belonged to the male gender (57.14%). In deteriorated group, majority belonged to male gender (81.82%)

Majority of the recovered group were from 31-50 years (n+45, 49.45%) with a mean age of 47.58. In the deterioration group, majority were from the same age group (n+7, 63.64%). The mean blood urea levels in recovered group were 70.2 mg/dl. in the deterioration group, it was 99.42 mg/dl. The mean s. creatinine levels in recovered group were 2.05mg/dl. in the deterioration group, it was 3.42 mg/dl. The mean urine output in recovered group was 783 ml/day in the deterioration group 445 ml/day. In recovered patients,sepsis was the major etiology (n+37,40.66%) and . in the deterioration group too sepsis was the major etiology (n=5,,45.45%). Hemodialysis was offered to (7.69%) 7recovered patients and to 8 deteriorated patients (72.72%). Peritoneal dialysis was offered to 1recovered patient (1.1%) and to 1 deteriorated patient (9.09%).

Multi variate logistic regression analysis was done with age > 40 years , male , peak urea >100 mg/dl,peak s. creatinine: 4.5 mg/dL, peak urine output <400ml/day and peak s.potassium: 5 mEq/L as independent values. Out of which, the risk of deterioration / non recovery in patients with AKI having peak s. creatinine> 4.5 mg/dL is 4.29 times significantly more than in patients with AKI having peak s. creatinine<4.5 mg/dL with statistical significance p-0.0039. The risk of deterioration / non recovery in patients with AKI having peak urine output values, 400ml/day is 2.45 times significantly more than in patients with AKI having peak urine output values > 400 ml/day with statistical significance p-0.0450.

Conclusions: 1.Common causes of AKI in this study include,sepsis,cardiovascular diseases,

drugs and poisons, and diarrhoeal disease in order of occurrence.
2.Among the patients who had AKI due to sepsis,Scrub typhus topped the list followed by Leptospirosis and Falciparum malaria.
3.Higher values of serum creatinine at admission and oliguria were the most significant factors that contributed to non recovery from AKI

AK9. Acute kidney injury and its outcomes in scrub typhus

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Introduction: We studied the clinical course of acute kidney injury (AKI) and outcomes as per AKIN criteria in scrub typhus.
Methods:A prospective case record-based study of scrub typhus was carried out from January 2012 to December 2014 in SVIMS hospital in South India. Patients were followed up until renal recovery or for at least 3 months after discharge. Univariate, chi-squared tests and multivariate logistic regression analyses were performed to identify the predictors of AKI.
Results: Scrub typhus was diagnosed in 28 patients. Applying AKIN criteria, 12(42.85%) were AKIN stage 3; 6 were AKIN2 (21.42%) and 10 patients in AKIN stage 1 (35.3%) respectively. Hemodialysis was required in 12 patients (42.85%). The case fatality rate in this study was 0 out of 28 (0%). 6 (21.42%) needed mechanical ventilator support. 2 patients (7.14%) were dialysis dependent after 3 months of follow up. Significant predictor of outcome was AKIN stage at presentation.
Conclusion: Scrub typhus should be part of the differential diagnosis of acute febrile illness with AKI. AKI in scrub typhus is usually mild, non-oliguric, and renal recovery occurs in most patients. AKIN stage was a significant predictor of outcome in scrub typhus.

AK10:Severe Acute Kidney Injury from acute pyelonephritis without predisposing factors for complicated UTI – First report from a tertiary care center in South India

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Aim: To study the clinico-pathological charactersitics of patients with acute kidney injury(AKI) resulting from acute pyelonephritis (APN) at a tertiary care center in south India.

Materials and methods: All consecutive patients diagnosed with AKI due to APN, based on renal biopsy, from October 2013 to October 2015 were included. Kidney biopsy suggestive of APN withatleast 1 of the 3 criteria's 1] Clinical features of APN (fever, flank pain, dysuria) 2] Significant Pyuria or Positive urine culture 3] Enlarged kidneys on USG or CT scan with perinephric stranding. Medical records of patients with APN were retrieved for review. Exclusion criteria: Age ≤ 18 years, kidney transplant recipients.

Results: 21 patients were diagnosed to have AKI from APN of whom Eight (38%) were females; mean age of patients was 52.38 years (25-80 years). Fever, dysuria & flank pain were reported by 43%, 43% & 14% patients respectively. Significant pyuria was found in 17 (81%), 10 of which were culture positive; 7 (70%) were *Escherichia coli*, 1 (4.7%) each was *Klebsiella pneumoniae*, *Enterococcus faecalis* and *Streptococcus bovis* respectively. Seven (87%) of the gram negative isolates were sensitive only to aminoglycosides and carbopenem. The mean serum creatinine at admission and discharge was 7.3mg/dl and 4.2 mg/dl respectively. Kidney biopsy showed neutrophilic cast (n = 21, 100%) with moderate to extensive diffuse interstitial inflammatory infiltrate (n=20) and prominent eosinophils (n=12). 4 had diabetes, 2 had history of steroid intake (<10mg/d) for psoriasis and arthritis. No patient had HIV infection, renal stone disease, recurrent UTI in past, structural abnormalities or recent history of instrumentationof urinary tract.

Discussion:APN causing AKIis usually seen in elderly, with comorbidities or predisposing factors for complicated UTI. We report a relatively young patient population developing severe AKI from APN without significant predisposing factors for complicated UTI. The possibility of the uropathogen causing direct severe insult on the renal parenchyma without compromised host defenses is worth studying. This necessitates in-depth evaluation of known uropathogens for novel virulence factors.

AK11. Scrub Typhus and Acute Kidney Injury

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Aim: To study the clinical presentation , complications and outcomes of patients affected by scrub typhus related acute kidney injury.

Background: Scrub typhus is an important cause of acute febrile illness and acute kidney injury/ multi-organ dysfunction.

Materials and methods: Patients who presented to the department of Nephrology , Madras Medical College, Chennai between January 2012 and November 2105 with acute febrile illness , acute kidney injury and tested positive for IgM ELISA for Scrub typhus were included in the study. The clinical manifestations, laboratory data, complications and outcome in these patients were studied.

Results: Thirty eight patients were studied of whom 25 (65.78%) were male. Mean age of the patients was 48.10 years(19 – 75 years). All the patients presented with fever and renal failure. Eschar was seen in 28 (73.68%), jaundice in 18 (47.38%) and oliguria in 30 (78.94%) patients. Laboratory data including urine analysis, complete hemogram, DIC work up, LDH, creatinine kinase, liver function tests, urine culture and imaging were done. Twenty four patients (63.15%) presented with multi-organ dysfunction including liver failure 24 (63.15%) , acute lung injury 4 (10.52%) and CNS manifestations 12(31.57%). Thrombocytopenia was seen in 26 patients(68.42%). Twenty four patients(63.15%) required renal replacement therapy. Complete renal recovery was observed in 29 (76.31%) and 9(23.68%) patients expired .

Conclusion: Morbidity and mortality were high in those who developed multi-organ failure/ dialysis requiring renal failure. Patients were predominantly in renal failure AKIN Stage 3 and required renal replacement therapy. Mortality was high in multi-organ dysfunction and AKIN Stage 3 category.

AK12: Acute Pyelonephritis Presenting With Renal Failure In A Tertiary Care Centre

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Background: Acute pyelonephritis may be defined as infection of renal parenchyma and collecting system. Acute nonobstructive pyelonephritis was thought to be rarely a cause of acute kidney injury (AKI). Several recent studies have documented that presentation of acute pyelonephritis with AKI is not uncommon especially in diabetic patients.

Aim: To study the clinical profile of acute pyelonephritis presenting with AKI.

Materials & Methods: It is a retrospective study. Demographic profile, clinical and laboratory data including urine culture and treatment data including renal replacement therapy (RRT) were noted. The period of study was from November 2014 to October 2015. AKI was defined by AKIN staging. Patients with acute pyelonephritis without AKI were excluded from the study.

Results: Fifty six patients withacute pyelonephritis and AKI were included. Of them, thirty (53.6%) were males. Mean age of presentation was 55.58±11.38 years. Forty five patients (80.4%) were diabetics. Fifteen patients (28.6%) had pre-existing renal dysfunction and nine patients (16%) had evidence of urinary tract obstruction. Fever was present in 43 patients (76.8%), dysuria in 38 patients (67.9%), loin pain in 26 patients (46.4%), and oliguria in nine patients (16%). All patients had pyuria. Mean total count and serum creatinine at admission were 13114±6550 cells/cu.mm and 5.83±3.03 mg/dl respectively. Twenty five patients (44.6%) were in AKIN 3 at presentation. CT evidence of acute pyelonephritiswas present in all the patients. Bilateral involvement was present in 28 patients (50%) and emphysematous pyelonephritis was seen in 4 patients (0.7%). Culture positivity in urine was present in 33 cases (59%). Escherichia coli was the commonest organism grown, followed by klebsiellaoxytoca. Candida albicans was grown in 5 samples (0.9%). Mean serum creatinine at discharge was 3.31±1.94 mg/dl. Twenty eight cases (50%) required RRT. Recovery of renal failure was documented in 48 cases (85.7%). Mortality was 9%.

Discussion: 1. Acute pyelonephritis presenting with AKI is common in diabetic patients.

2. Eighty four percent of patients had no urinary obstruction.

AK13: AKI in decompensated Chronic Liver Disease - Etiology and Outcome

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Aim: To study the etiology and outcome of acute kidney injury (AKI) in patients with decompensated chronic liver disease (DCLD)

Materials and methods: A prospective study of AKI in patients with decompensated chronic liver disease admitted from June to October 2015 was done . AKI was diagnosed and staged as per the revised international club of ascites (ICS-AKI) criteria. Patients with underlying chronic kidney disease were excluded. Demographic data, etiology, mode of renal replacement therapy and outcome were analyzed.

Results: Out of the 45 patients studied 40 were males. Age range was from 28 to 62 years (Mean-42 years). Seven patients had diabetes mellitus. Cause of AKI was multifactorial. Twenty six patients(57.7%) had hepato renal syndrome(HRS).Sepsis was the dominant cause in 13 patients(29%). Four patients had upper GI bleed. Nine patients had spontaneous bacterial peritonitis.

At presentation five patients had stage 1 AKI and twenty five patients had stage 2 and fifteen patients had stage 3 AKI. Ten patients developed AKI after hospital admission. Thirty eight (84.4%) patients received renal replacement therapy. Of these 32 patients (71.1%) received intermittent peritoneal dialysis(IPD). Six (13.3%) patients received IPD and hemodialysis

At one month follow up overall mortality was 73% (33/45). Mortality in patients requiring RRT was 86% (33/38).

Conclusion: Hepatorenal syndrome is the most common cause of AKI.The mortality rate of AKI patients is high despite having dialysis support.

AK14:Evaluation of Acute Interstitial Nephritis (AIN) due to Snake Envenomation

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Introduction: Acute kidney injury due to snake envenomation is a major health problem in developing countries. AIN as a cause of snake bite related AKI is rare and hence there is paucity of data on this.

Aim: To asses the clinical manifestations, laboratory profile and outcome in patients with snake envenomation related AKI showing acute interstitial nephritis in renal biopsy .

Materials and Methods: Patients admitted to the department of Nephrology Madras Medical College with snake bite AKI from August 2012 to October 2015 and renal biopsy showing acute interstitial nephritis were included in the study. Patients with pre-existing kidney disease were excluded. Clinical data including details of anti snake venom (ASV) administration were noted. Laboratory data including urinalysis,hemogram,coagulation profile and kidney biopsy were studied. Kidney biopsy was performed if renal failure was persistent for > 3 weeks.

Results: Fifty eight patients of snake envenomation underwent renal biopsy of which 9 (15%) showed acute interstitial nephritis. Of them 2 (22 %) were males. Mean age – 48 years. Six patients had received ASV. Renal failure developed after a mean duration of 38 hours (8- 96 hours). Six patients were oliguric. Mean serum creatinine at presentation was 6.0 mg/dl (range 2.8 -10 mgdl). Number of dialysis sessions required ranged from 4- 10. Renal biopsy revealed infiltration of lymphocytes and eosinophils in the interstitium and evidence of acute tubular injury. All patients received oral steroids for one month. Renal function recovered in all patients.

Conclusion: 1. Acute interstitial nephritis was noted in 15 % of biopsies of snake bite related AKI

2. The prognosis was good with 100% renal recovery.

3. Timely identification and steroid therapy are vital.

AK15: Clinico pathological features and outcomes in thrombotic microangiopathy (TMA) in pregnancy related AKI

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Aim: To study the clinico pathological features and outcomes of thrombotic micro angiopathy in pregnancy related AKI (PRAKI) patients**.**

Material &methods:It is a retrospective study. History clinical features and relevant investigations were noted. Patients with biopsy proven thrombotic micro angiopathy were included in the study.

Results: Retrospective analysis of PRAKI from August 2010- to November 2015 .Pregnancy related AKI occurred in 145 patients among whom 15(10%) patients had biopsy proven TMA. Age range: 19-35 years. 3(20%) were primigravida. seven (45%) patients had PIH. All patients presented in post partum period. Mean admission creatinine was 3.36 mg/dl. Fragmented RBCs were seen in 11 patients. 9(60%) patients had thrombocytopenia on admission. Kidney Biopsy showed only TMA in 6 (40%) patients. 7(45%) patients showed TMA with patchy cortical necrosis. 1(8%) patient had TMA with diffuse cortical necrosis. 1(8%) patient had TMA with collapsing glomerulopathy. All patients underwent hemodialysis. 14 (93%) patient underwent plasmapheresis. At discharge 12 (80%) were dialysis independent, 2(12%)were dialysis dependant, 1(8%) had normal renal function.

Discussion: TMA is an important cause of pregnancy related AKI. In our study the incidence of TMA was 8%. With early diagnosis and treatment adequate renal function can be maintained. There was no mortality associated with TMA.

AK16: An interesting case of Acute Kidney Injury following Pregnancy

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Introduction: Acute kidney injury due to cortical necrosis is a rare but serious complication of pregnancy.Thrombotic microangiopathy is an uncommon cause of acute cortical necrosis and the incidence of this entity is estimated to be 1 to 6 in one million population.We report a case of acute cortical necrosis in a female patient following pregnancy resulted from thrombotic microangiopathy.

Case report: A 26 year old G2 P1 L1 of 8 months gestational age was admitted with antepartum haemorrhage.An emergency LSCS was done and intra operative findings were consistent with diagnosis of abruptioplacenta.Patient had nil urine output since admission and the renal parameters were progressively elevating.Making a provisional diagnosis of acute kidney injury,hemodialysis was started.But patient continued to have persistently high blood pressure and decreased urine output.Peripheral smear showed microcytic hypochromic blood picture with anisopoikilocytosis,thrombocytopenia and schistocytes which was consistent with microangiopathichaemolyticanemia.LDH level was very high.PT,aPTT and fibrinogen levels were normal.A renal biopsy was taken which was reported as cortical necrosis with thrombotic microangiopathy.4 cycles of plasmapheresis and short course of steroids were given and patient improved dramatically and is on follow up now.

Conclusion: This case is being presented for the rarity of thrombotic microangiopathy as an aetiological factor for acute cortical necrosis and acute kidney injury.The condition carries a poor prognosis as most of the patients progress to end stage renal disease and may require renal transplant. A high index of suspicion is needed for ordering specific investigations and diagnosing this condition so as to start the treatment early.

AK17: A rare case of Acute Tubulointerstitial Nephritis following Multiple Hornet stings

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Introduction: Insect stings and bites usually cause local allergic reactions, direct toxic effects and rarely anaphylaxis. Acute renal failure is a rare complication of multiple stings. We report 2 cases of delayed onset acute kidney injury due to multiple wasp stings due to acute interstitial nephritis which is a rarer presentation.

Case report: Case 1: A 19 year old male presented with swelling of his body and decreased urine output since the last two days. Detailed history revealed multiple wasp sting injuries sustained 6 days back while climbing a coconut tree. Immediately after the stings there were only local reactions for which he was prescribed chlorpheniramine maleate and paracetamol tablets. On investigation, his urea and creatinine were 294mg/dl and 20.1 mg/dl respectively. 6 cycles of hemodialysis were instituted. Renal biopsy revealed acute tubulointerstitial nephritis. Intravenous steroids were given following which the patient recovered dramatically and renal functions returned to almost normal levels in 21 days with adequate supportive measures.

Case 2: A 35 year old male presented with swelling over his periorbital areas and both feet along with reduced urine output for 2 days. There was history of multiple hornet stings sustained at work 7 days back.. On investigation, his urea and creatinine were 118mg/dl and 9.2mg/dl and attained peak creatinine levels of 15.6mg/dl during the hospital stay. 3 cycles of hemodialysis givenand renal biopsy revealed acute tubulointerstitial nephritis. The patient responded well to intravenous corticosteroids. Both cases are on regular follow up.

Conclusion: Rare causes of acute renal failure like tubulointerstitial nephritis should be considered in a patient with persistent oliguria and azotemia following multiple hornet stings.Physicians should be aware of the rare possibility of delayed onset renal failure in multiple hornet sting injuries.

AK18: Clinical Profile And Treatment Outcome of Dialysis Requiring Acute Kidney Injury

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Background the spectrum of etiologies of acute kidney injury is diverse in different populations.There are limited data regarding the clinical and etiological profile and factors influencing the outcome from our part of the country.

Aim: To study the clinical profile of patients with acute kidney requiring dialysis & to evaluate their treatment outcome

.**Materials and methods**:An observational study in a prospective direction was undertaken over a period of one year among dialysis requiring acute kidney injury patients admitted in Government Medical college.

Results: Febrile AKI was the predominant cause of dialysis requiring AKI followed by sepsis.Mortality rate was 28%.The predominant cause was sepsis. The etiologies like sepsis,envenomation, obstructiveuropathy,complications like hypotension during HD,high TC and higher serum creatinine at presentation delayed the recovery of renal dysfunction.The presence of myocarditis,ICU admission, mechanical ventilation,comorbidities like systemic hypertension,underlying malignancy,surgical cause for AKI,delayed initiation of hemodialysis,complications during HD, age more than 60 years,lower pH,lower bicarbonate contributes to mortality.

Conclusion: Our study emphasizes the need for early identification of renal dysfunction in the risk and injury phases of acute kidney injury which would significantly decrease the morbidity and mortality associated with it.