CLINICAL NEPHROLOGY- ORAL PRESENTATIONS

CNO1. Renal manifestations of Dengue Viral infection – A single center study from South India

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Introduction Dengue virus infection is endemic in tropical countries like India. The classical presentation includes fever, hepatomegaly, thrombocytopenia related bleeding disorders and plasma leakage. Dengue induced renal manifestations like proteinuria, hematuria in the absence of thrombocytopenia, rhabdomyolysis and acute kidney injury (AKI)imposes heavy burden of illness in terms of morbidity and mortality. A retrospective study was conducted to investigate the incidence, characteristics and clinical outcome of renal manifestations among dengue patients.

Materials and Methods: A total of 2416 dengue patients (2012–2015) were retrospectively evaluated and were stratified into renal manifestations and non renal manifestations, renal manifestations were further sub classified as AKI and non-AKI groups by using AKIN criteria. Two groups were compared by usingappropriate statistical methods.The nadir or peak of the levels of liver enzymes and complete blood counts during hospitalization were also recorded. The recording of underlying diseases was based on the medical records. Proteinuria was defined as urinary protein appearing >1+ (30 mg/dl) by dipstick test.AKI was defined by Acute Kidney Injury Network (AKIN) classification

Results: There were 231 patients (9.56%) with renal manifestations, of which 167 (72.29 %) were males.Most of the patients, 135(58.44%) with renal manifestations were aged between 15 – 30 years. Comorbid conditions like diabetes mellitus, hypertension and ischemic heart disease seen in 10 (4.31%), 11 (4.76%) and 6 (2.59%) patients with renal manifestations. Proteinuria was seen in 231 patients (9.56%), nephrotic range proteinuria seen in 5 patients (2.16 %). AKI seen in 82 patients (3.4%) , with AKIN-I, AKIN-II and AKIN-III in 58(70.73 %),19(23.17%) and5(6.09%)patients, respectively. Leukopenia, thrombocytopenia and transaminitis seen in 101 (43.72 %), 197 (83.28 %) and 206 (89.1 %) patients respectively. Death was seen in 7 patients (3.03%)with AKI.

Conclusion: The incidence of renal manifestations as in proteinuria, hematuria and AKI is high as 9.59% among dengue patients, and those with AKI portended significant morbidity, mortality, longer hospital stay and poor renal outcomes. Our findings suggest that AKI in dengue is likely to increase healthcare burden that underscores the need of clinicians' alertness to this highly morbid and potentially fatal complication for optimal prevention and management of this fatal disease.

CNO2. Outcome of isolated antenatal hydronephrosis (ANH) in a tertiary care hospital

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Aim: To determine the etiology and outcome of isolated ANH

Material and methods: We have reviewed the medical records of infants with ANH who had a minimum one year follow-up in Department of Pediatric Nephrology, Dr Mehta Children's hospital, Chennai between the period of January 2009 to December 2014.

We excluded infants with incomplete medical records. We have retrospectively analyzed the infants with ANH with ultrasound scans, spot urine protein/creatinine ratio, blood pressure measurement, eGFR, DMSA, Diuretic renogram and micturating cysto-urethrogram (MCU).The study protocol was reviewed and then approved by the institute ethical committee

Results: Out of ninety two infants, 16(17.4%) were female, and 76(82.6%) were males. Twelve (13.04%) had antenatal history of oligohydramnios. Mean gestational age of antenatal detection was 30.3 wks (SD±4.52) with minimum of 21 weeks and maximum of 34 weeks. Mild, moderate and severe ANH were documented in 47(51.1%), 27(29.3%) and 18(19.6%) respectively.

Of the 92 infants, 27(29.3%) had pelvic ureteric junction obstruction (PUJO), 10(10.8%) had VUR, 20(21.7%) had resolved hydronephrosis by the age of 12 months and 35(38%) had persistent hydronephrosis by the age of 12 months.

Twenty (21.7%) infants had completely resolved by the age of 12 months of which 18(90%), 2(10%) belonged to mild, moderate ANH respectively.

Twenty seven infants with PUJO, pyeloplasty was done. The mean age for surgery was 9.2±2.8 months with mean APD measurement was 23±2.5mm. Out of 27, 11(40.7%), 16(59.2%) infants belonged to moderate and severe ANH (p-0.04) respectively.

Twenty two (23.9%) infants had UTI within one year of age and 12 (54.5%) had recurrent UTI. Mean age of UTI was 5.5(SD±2.2) months and 19 (86.3%) had positive sign of inflammation in DMSA (p-0.03).Twenty two infants with UTI, 12(54.5%), 7(31.8%), 3(13.6%) belonged to severe, moderate and mild ANH (p-0.05) respectively.

Ten infants (10.8%) had vesico ureteral reflex (VUR) of which 6(60%) had UTI .Out of 10 infants with VUR, 6(60%) and 4(40%) were of moderate and severe ANH respectively.

Mean eGFR was 113.48ml/min/1.73m2 (SD±15.9) at the age of 12 months.

Proteinuria was noted in 13(72.2%) out of 18 infants with severe ANH, 17 (62.9%) out of 27 infants with moderate ANH and 23(48.9%) out of 47 infants with mild ANH at 12 months of age (p-0.336)

Conclusion: Infants with severe grade of ANH needs surgical correction for the resolution.

Urinary tract infection was seen predominantly in severe and moderate ANH

CNO3. Rituximab Therapy in Glomerular Disease – Our Experience

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Introduction: The central role of B cells in the pathogenesis of immune mediated glomerular diseases has made it a possible therapeutic target. Accordingly, rituximab is gaining popularity in the treatment of such diseases, albeit its efficacy and safety remains to be established. We aim to provide our experience with rituximab therapy and outcomes in our center.

Materials & Methods: A retrospective study of patients who were administered rituximab in our center for various indications was done. Clinical data including diagnosis, biopsy details, treatment administered, response and incidence of side effects among patients were noted.

Results: 22 patients were administered rituximab in our center. The most common indication was nephrotic syndrome (n=10) out of which 7 were steroid resistant. At one month, 3 patients had partial remission while 4 had attained complete remission. Steroids were tapered to low dose maintenance in 2 cases while immunosuppression was withdrawn altogether in two. At six months, three patients had sustained complete remission and among the partial responders one had a relapse. 5 patients were treated for lupus nephritis, one patient had shown improvement. Three were treated for recurrence of FSGS post transplant, only one showed partial response. Two patients had pauci-immune vasculitis, one of whom responded to therapy. One case of TTP responded, while one patient with Immunoglobulin type gamma 4-related disease did not respond. Three patients developed infection related complications post infusion therapy out of which one succumbed, while leucopenia was seen in two cases.

Conclusion: The use of rituximab can be considered as a possible adjunct or alternative treatment option in certain scenarios. In nephrotic syndrome it may have a role in reducing exposure to and hence toxicity of steroids / calcineurin inhibitors.

CNO4. Spectrum of Renal Abnormalities in Moderate & severe Psoriasis– A long debated association

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Introduction : Psoriasis is an immune-mediated chronic inflammatory disorder of the skin. Association with kidney disease has been debated for a long time. There have been case reports of glomerular diseases like IgA nephropathy, Membranous nephropathy, Secondary Amyloidosis seen in association with psoriasis. Moderate to severe Psoriasis has been linked to CKD independent of traditional risk factors.

Aims : To evaluate the prevalence and type of renal abnormalities in patients with psoriasis

Materials and Methods: This was a prospective observational study.100 patients with moderate to severe psoriasis - based on PASI(Psoriasis Area Severity Index) Score >10 on follow up at Dermatology OPD from Jan to July 2016 constituted the study population.100 equal controls were chosen.Patients were subjected to clinical examination, urine analysis,other appropriate lab investigations and imaging with Ultrasonography. Frequency analysis, percentage analysis were used for categorical variables and continuous variables were calculated using mean and standard deviation. Significance in categorical data were assessed using Chi-Square test. The data analysis was computed with IBM.SPSS 23.0 Version.

Results:

Parameter	**Cases**	**Controls**	**P**
N (Total 102)	100	100	
Mean Age (years)	45	47	
Disease duration **3 to 5 years** **6 to 10 years**	 58 % 35 %		
PASI Score **10 .1 – 15(moderate)** **>15.1 (severe)**	 39% 40%		
Urine Albumin 1 +	7%	6%	NS
Urine blood 1+, 2+	5 %	0%	NS
Urine Microalbumin	2 %	2 %	NS
Urine Spot PCR	0%	0%	NS
Mean Blood Urea	22.63 mg/dl	22.3 mg/dl	NS
Mean Sr. Creatinine	0.86 mg/dl	0.84 mg/dl	NS

The most common clinical presentation of Psoriasis was the chronic plaque type, seen in 84 %. 78% patients with moderate to severe psoriasis were treated with Methotrexate, 11% with biologicals, 3% with Cyclosporine A and 7 % received only topical steroids and emollients. All the renal abnormalities observed in our study group was seen in patients on Methotrexate.

Conclusions:

1. Chronic kidney disease in psoriasis is a rare entity.
2. Though there were no tell tale signs of glomerular dysfunction in our group of psoriasis patients, some urinary abnormalities were observed in a minority. These patients require long term follow up.
3. Routine screening of patients with renal function tests may become an important part of the armamentarium in the management of chronic psoriasis.

CNO5. Pregnancy Related Acute Kidney Injury: A single center experience

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Introduction: Pregnancy Related Acute Kidney Injury (PRAKI) may comprise up to 25% of the referrals to dialysis centres in developing countries and is associated with substantial maternal and fetal mortality.

Materials and methods: A prospective longitudinal observational study between February 2012 to February 2016.To evaluate the clinical, etiological and final outcome of AKI with special reference to pregnancy related acute kidney injury. AKI was diagnosed as per AKIN criterion with or without requiring hemodialysis.

Results: Total of the 624 patients were studied. Among them 124 (19.8%) patients had PRAKI. The mean age among PRAKI was 21±4 years.The mean duration of hospital stay was 9.41±7.3 days. Etiological factors include puerperal sepsis in 65 (52.4%), pregnancy induced hypertension in 30 (24.1%), 12(9.6%) patients had post partum hemorrhage, 7 (5.6%) ante partum hemorrhage, postpartum hemolytic uremic syndrome in 3 patients (2.41%) and miscellaneous causes was seen 7 (5.6%).

Biopsy was done on 22 patients who found to be oliguric or who needed dialysis support at the end of three weeks. Eleven showed acute tubular necrosis.Six of them had patchy cortical necrosis Two with features of acute interstitial nephritis Three patients had thrombotic microangiopathy. Out of 124, 101 (81.45%) patients recovered from acute kidney injury, 4 patient remained on dialysis and 2 patient had partial recovery from renal failure.

17 patients died with mortality rate of 13.7%. Out of these 9 patients died within 48 hours of admission. Sepsis, multiorgan dysfunction, coagulation abnormalities and retained products of conception were factors associated with mortality.

Conclusion: PRAKI is a significant cause of AKI in developing countries.Puerperal sepsis is the most frequent etiological factor and accounted for a majority of maternal mortality

CNO6. Histopathologic patterns in SRNS in Children

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Introductions: To determine the histological type of steroid resistant nephrotic syndrome in children and to find any deviation from local and international patterns

Materials and Methods: A retrospective analysis was done of all children (with age of onset between 1 to 16 years) with SRNS ,who underwent Renal biopsy over the last 4 (2012 -2016) years , presenting to department of nephrology of osmania general hospital.

Inclusion criteria were: (1) children up to age of 16yrs,not responding to steriods up to 8 wks. We excluded children with (i) underlying secondary causes, (ii) hepatitis B surface antigen (HBsAg) seropositivity, human immunodeficiency virus (HIV) seropositivity or anti HCV seropositivity, (iii) SDNS

All the patients(70) clinical , biochemical profile & histology(LM and IF) analysed

Results: The study group comprised of 70 children with SRNS.

1)60% were males: 40% females

2)65% pts were less than 10yrs of age, 22%(16) pts were less than 5yrs

3)45%(32) pts had HTN

4)98% pts had nephrotic range proteinuria (avg mean of 3 to 4g /day)

5)16% (11) Pts had mild to moderate renal insufficiency with grade 1 to 2 renal parenchymal changes on ultrasound

6) out of 70 pts , 40% pts(28) had FSGS, 42%(30) had MCD , 5.7%(4) pts had mesangio proliferative GN eith IgM deposits, 4%(3) pts with c3 glomerulopathy, 4%(3pts) had DMS, 1 pt had DPGN, 1 pt had membranous nephropathy

7)15.7% pts had IFTA OF 15 -20%

8) out of 11 pts withb renal insufficiency, 54% had FSGS(nos),18% Pts had c3 glomerulopathy, 9% had DPGN/MPGN on histology

Conclusion: Our study showed most common histopatholgy in SRNS is MCD ,followed by FSGS(NOS), IgM nephropathy, and C3glomerulopathy,

Pts with renal insufficiency in SRNS had FSGS (NOS) as most commom histopathology followed by c3 glomerulopathy, MPGN/DPGN

References:

1. Trautmann A, Bodria M, Ozaltin F, Gheisari A, Melk A, Azocar M et al. Spectrum of Steroid-Resistant and Congenital Nephrotic Syndrome in Children: The PodoNet Registry Cohort. Clinical Journal of the American Society of Nephrology. 2015;10(4):592-600.

2. Gulati S, Sural S, Sharma R, Gupta A, Gupta R. Spectrum of adolescent-onset nephrotic syndrome in Indian children. Pediatric Nephrology. 2001;16(12):1045-1048
3. Banerjee S. Steroid resistant nephrotic syndrome. Indian J Pediatr. 2002;69(12):1065-1069.

CNO7. Acute Kidney Injury and its outcome in Cirrhosis of Liver

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Aim: The aim of present study was AKI and its outcome in cirrhosis of liver
Materials and Methods: This was a prospective, observational study carried at King George hospital; Department of nephrology, Visakhapatnam, India from July 2015 to June 2016 and follow for 3 months. Patients with diagnosis of cirrhosis of liver were evaluated for the presence of AKI.
Results: The incidence of AKI in patients with cirrhosis of liver was 25.8% (56/217).Most common etiology of cirrhosis in males was chronic alcoholism (44.64%) followed by hepatitis B (14.29%). In femalesmost common etiology of cirrhosis was hepatitis C.The spectrum of AKI was pre-renal AKI (44.64%) intrinsic renal failure (32.04%) and HRS (23.14%). In intrinsic renal failure (N=18) 15 cases (83.33%) are due to acute tubular necrosis remaining 3(16.66%) are of glomerular origin**.** The renal tissues was examined under light microscope and immunofluorescence microscope. Out of three renal biopsy ,one revealed type 1 MPGN,oneig A Nephropathy and one tubulointerstial nephritis. Mortality in the present study was 26.78% (15/56).HRS accounted to 53.33 %(8/15) of total deaths in AKI.
Conclusions: Pre-renal AKI most common cause of AKI in cirrhosis of liver. HRS associated with higher mortality than NON-HRS. Those patients who exhibited early recovery from AKI do well. Worsening of AKI is independently associated with mortality. MELD SCORING and MELD-SODIUM have efficacy in predicting mortality.

CNO8. MRSA prevalence and use of Vancomycin in a tertiary care Nephrology Urology Hospital

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Introduction: The prevalence of Methicillin resistant *Staphylococcus aureus* (MRSA) was reported to be 41% by Indian Network for Surveillance of Antimicrobial Resistance (INSAR) group in a multi centric study during the period from January 2008 to December 2009.

Considering the prevalence and potential seriousness of symptomatic infections with MRSA in patients on dialysis, it is a common practice to use Vancomycin empirically in these patients especially if they are very ill. Our Hospital antibiotic policy currently allows use of Vancomycin for all dialysis patients presenting with sepsis if they have central vein catheter or peritoneal dialysis catheter in situ; it appeared to us that we might be overusing empirical Vancomycin despite relatively lower incidence of MRSA in our center.

Aim: To analyze the prevalence of MRSA isolates and use of Vancomycin in our Hospital, a tertiary care center for Nephrology and Urology services in Bengaluru

Materials and methods: Study period – November 2015 to October 2016.

Isolates from different samples from in patients and outpatients visiting the hospital during this period on suspicion of infection as the cause of their illness were cultured appropriately in our microbiology laboratory [National Accreditation Board for testing and calibration Laboratories (NABL) certified] as per Clinical and Laboratory Standard Institute (CLSI) guidelines.

Isolates growing *Staphylococcus aureus* were tested for antibiotic susceptibility by disk diffusion method (Kirby Bauer method) using Penicillin, Ampicillin, Oxacillin, Cefoxitin, Cefazolin, Tetracycline, Levofloxacin, Vancomycin, Teicoplanin and Linezolid. Detection of MRSA was done using Oxacillin (1mcg) and Cefoxitin (30mcg); zone of inhibition and <13mm with Oxacillin and <22 mm with Cefoxitin were considered as MRSA

An audit was conducted on use of Vancomycin during the same period; clinical presentation of patients for whom Vancomycin was prescribed, culture reports of microbiological sample, continuation of Vancomycin and outcome of these patients were analyzed

The Hospital Infection Control Committee emphasizes infection control practices especially hand hygiene while handling patients and patient related devices during training sessions for all health care workers and new recruits; it also monitors these practices and circulates the lapses through e mail on a daily basis for improving compliance with these practices.

Hospital antibiotic policy permits empirical use of Vancomycin for treatment of very sick patients suspected to have blood stream infections secondary to vascular devices or extensive skin or subcutaneous infections; its use as prophylaxis for procedures is prohibited

Results:

a) *Staphylococcus aureus* isolates

Total isolates – 86

Samples – Urine 30, pus 27, blood 23 (26.7%), central vein catheter tip 3, peritoneal fluid 2, endotracheal secretion 1

Blood isolates - 17.4% of total positive blood isolates; 82.6% of these patients were on hemodialysis and 52.1% had central vein catheter in situ

MRSA 2 (2.3%) – 1 from pus swab (outpatient setting) and the other from endotracheal secretion from a patient admitted in intensive care unit

b) Audit on Vancomycin use

Patients for whom Vancomycin was used for empirical treatment:	23	
Patients on hemodialysis who had received Vancomycin	15	
Patients with central venous catheter as vascular access	14	
Patients on peritoneal dialysis who had received Vancomycin	6	
Non dialysis patients who had received Vancomycin	3	
Patients who needed inotropic support	9	
Patients who needed ventilatory support	6	
Number of positive culture isolates in this population	16	(*S.aureus* in 6)

Discussion: Though low prevalence of MRSA in our setting may be attributed at first sight to limited scope of services (only Nephrology and Urology services), we believe that active infection control practices and surveillance of the same has helped in minimizing transmission. Being a tertiary care center, we treat patients from other centers also

Considering the low prevalence of MRSA infections in our center, we think it is time for us to consider Dicloxacillin or Cefazolin instead of Vancomycin as empirical antibiotic in the specified population; however this needs constant vigilance and surveillance on the incidence of MRSA in our center. A retrospective single center database had also observed predicted efficacy of empirical therapy in dialysis population with a low incidence of MRSA was similar for Vancomycin and Cefazolin (Am J Kidney Dis **32**: 401–409, 1998)

Conclusions: 1. It is not impossible to achieve low prevalence of MRSA with active surveillance of infection control practices and appropriate antibiotic policy.

2. In low prevalence centers, it may be worthwhile to use Dicloxacillin rather than Vancomycin as an empirical antibiotic

CNO9. Clinical profile and outcome of pigment nephropathy - A single centre experience

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Introduction: Pigment nephropathy represents one of the most severe complications of rhabdomyolysis or hemolysis. Rhabdomyolysis induced pigment nephropathy is common . Etiology of rhabdomyolysis and pigment nephropathy differ in western and tropical countries. There is paucity of data in Indian literature. We undertook this study to analyze the same.

Aim: To assess the etiology, clinical manifestation, laboratory profile and outcome in patients with pigment nephropathy in renal biopsy.

Materials And Methods: Patients admitted to the department of nephrology, Madras Medical College with various causes of AKI (of known and unknown cause) and renal biopsy showing pigment nephropathy during Jan 2011 to november 2016were included in the study. Perls staining for iron and immunostaining for myoglobin has been done in selected patients. History, clinical examination findings, laboratory investigations and outcome were recorded.

Results: Forty three patients were included of which29 patients (67%) were males. Pigment deposition was due torhabdomyolysis in twenty threepatients (53%) and due to hemolysis in seventeen patients (44%) and lipofuscin deposit in one patient.The most common etiology of rhabdomyolysis was due to envonomation present in ninepatients (snake bite – 7, wasp sting - 2) . In seven patients pigment deposition was due to seizures and in five patients due to strenuous muscular activity.Hemolysis causing pigment deposition was predominantly due to rifampicin inducedhemolysis causing AKI present in eight patients . Malaria/G6PDdeficiency, mismatched blood transfusion, sepsis/DIC and PNH were causes of hemolysis other patients. Thirty sevenpatients (91%) had oliguric renal failure. Mean creatinine at presentation was 9.1 mg/dl.Three patients had pigment deposition in association with IgA nephropathy. Forty onepatients(95%) required dialysis during hospital stay of which two patients recovered with peritoneal dialysis . All patients except three (with sepsis/DIC) had recovering renal function at discharge and on follow up.

Conclusion: Pigment nephropathy due to rhabdomyolysis and hemolysis is a cause of renal failure requiring hemodialysis. Snake envenomation is the most common cause of rhabdomyolysis and rifampicin is the most common cause of hemolysis causing pigment nephropathy. It has a relatively good prognosis depending on the underlying etiology.

CNO10. Serum levels of IL6 in Diabetic Nephropathy and its correlation with progression of CKD

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Aim: To study the Serum levels of IL6 in Diabetic Nephropathy and its Correlation with Progression of CKD

Material & Methods : 50 Patients attending Nephrology OPD at Gandhi Hospital with Type 2 Diabetes Mellitus are included. Patients who are severely ill, Infections, Pregnant women, Rheumatoid Arthritis, Carcinoma are excluded.

IL6 levels are assessed and analysed by HPLC in NIMS-CPMR, Hyderabad.

Results: Serum samples of 50 type 2 Diabetes mellitus patients have been assessed taking into consideration different stages of Diabetic Nephropathy.

It has been observed that serum levels of type 2 Diabetes Mellitus patients is increased, Mean serum level of IL6 is found to be 19.6± 2.9 pg/ml.

The serum IL6 levels also varied with stages of diabetic Nephropathy & different stages of Chronic Kidney Disease.

Conclucion: Diabetes-related complications represent one of the most important health problems worldwide. Subclinical inflammation is a part of type 2 diabetes mellitus. One of the most important medical concerns of the diabetes epidemic is diabetic nephropathy.

Interleukin 6 (IL-6) is an interleukin that acts as both a pro-inflammatory cytokine and an anti-inflammatory myokine. In humans, it is encoded by the *IL6* gene. IL-6 acting in a paracrine or autocrine manner, may induce a variety of effects on different renal structures playing a significant role in the development and progression of several renal disorders which leads to the assumption that new therapies targeting inflammation may help in retarding the progression of Diabetic Nephropathy.

CNO11. Relationship between dietary protein intake and levels of proteinuria in patients with nephrotic syndrome – do we need to modify diagnostic criteria?

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Introduction: Proteinuria of >3.5gm/1.73sqmBSA/day is cornerstone for diagnosis of Nephrotic syndrome in adults. Levels of proteinuria are also used in management decision making. However, in the underprivileged patient population we encounter at our centre in rural South India, a significant proportion of patients with all other features of nephrotic syndrome and biopsy documented glomerular disease, are found 'subnephrotic' levels of proteinuria. We studied the levels of proteinuria in patients with nephrotic syndrome from primary glomerular diseases, their dietary protein intake and serum oxidative stress and markers of inflammation and tried to identify the relationship of proteinuria with the level of dietary protein intake

Aim: 1.To studythe levels of proteinuria in patients with nephrotic syndrome from primary glomerular diseases. 2.To study the dietary protein intakeand the level of oxidative stess markers and inflammatory markers in the serum of patients with nephrotic syndrome.3.To study therelationship of level of proteinuria with dietary protein intake and level of oxidative stress markers in serum of patients with nephrotic syndrome.

Materials and Methods: All consecutive adult patients with untreated Nephrotic syndrome (first episode or relapse) during the period February 2014 to December 2015 were recruited in this prospective cross sectional observational study. Patients with secondary glomerular disease, impaired GFR, on ACEI/ARB, malignancy, UTI, Pregnancy, uncontrolled HT, heart or liver disease as well as patients who were already on steroid or any other immunosuppression were excluded. Baseline demographic and anthropometric data collected in all patients at the time of enrollment using a case report form. 24 hour urine was collected and tested for level of proteinuria by precipitation with sulfosalicylic acid (SSA) and degree of turbidity. It was further corroborated with pyrogallol red technique. IL6, hs-CRP, serum malondialdehyde (SMDA) and serum protein carbonyl (SPC) were studied. Diet diary of 3 days was, along with estimation of protein and calorie intake in all patients, with the help of ICMR guidelines. From the diet diary, average per day protein intake was calculated. 24 hour excretion of Urine Urea Nitrogen (UUN) was calculated from spot urinary urea level and the daily protein intake calculated from the urine UUN excretion, using the formula Calculated Protein Intake = urine nitrogen excreted in grams/day + (weight in kilograms X 0.031 g nitrogen/kg/day) multiplied by 6.25

Results:A total of 62 subjects were recruited, 27 (43.4%) were female, mean age of 41.87 (± 11.006). FSGS (30.65%), IMN (14.52%), MCD (11.29%), IGA (9.68%), MPGN (8.06%), MePGN (3.23%) and MCD/FSGS (1.61%) were the major histologic categories on renal biopsy. 33(53.2%) were newly diagnosed cases and 29 (49.8%) were relapse cases. Mean level of proteinuria was 2.84 ± 0.98 g/d. Significant linear correlation was seen between calculated protein intake and protein intake estimated from diet chart (r = 0.473, p= 0.0001). The mean protein intake in the study population was 0.67 g/kg/day (without dietary advice for restriction of protein). Mean serum albumin was 2.08 gm/dl (± 0.24). There was strong positive correlation between dietary protein intake, Serum albumin levels and levels of proteinuria. Serum albumin documented a negative correlation with hsCRP an IL6 while showed a positive relationship with SMDA and SPC. Levels of proteinuria also showed a negative correlation with inflammatory markers and SMDAbut positive correlation with SPC levels.

Table 01: Laboratory parameters of the cases

	Mean	SD
Serum Albumin (gm/dl)	2.08	0.24
24 hr urine protein by SSA (gm/day)	2.84	0.98
24hr urine protein by pyrogalol (gm/day)	2.94	1.08
Urine urea nitrogen	1.85	0.26
Calculated protein intake (gm/day)	22.31	2.28
Protein intake estimated from Diet diary (gm/kg/day)	0.67	There is a significant linear correlation between calculated protein intake and protein intake estimated by diet chart.p=0.0001,r=0.473
Serum hs CRP	2.66	1.31
IL-6 (pg/ml)	137.66	129.08
SMDA(nmol/ml)	0.93	0.38
SPC(nmol/mg)	1.00	0.41

Conclusion:The level of proteinuria in subjects with clinical features of nephrotic syndrome from primary glomerular disease was low and did not meet the diagnostic cut off for defining nephrotic syndrome. The estimated protein intake in the study subject was very low, which might account for the low levels of proteinuria. This observation suggeststhat diet and nutritional status of the patient should be taken into consideration for making a diagnosis of nephrotic proteinuria and the same may have to be incorporated into diagnostic criteria.The correlation between serum albumin and 24 hr urine protein with inflammatory and oxidative markers were not statistically significant.

CNO12.Thrombotic Microangiopathy- Clinical profiles and outcomes

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Aim: To study the Clinico Pathological features and outcomes of Thrombotic microangiopathy**.**
Material &methods: Retrospective study conducted at Institute of Nephrology , RGGH, Chennai from June 2013 – Nov 2016. History, clinical features and relevant investigations were obtained from medical records . Patients with biopsy proven thrombotic microangiopathy were included in the study. Post transplant TMA were excluded.
Results: Forty patients included in the study. 24 were females (60%) (male : female ratio 1.5:1).Mean age : 34.4yrs (age group 13 yrs – 60 yrs). Etiology : Obstetrics -12(30%),Malignant Hypertension-7(17.5%),lupus nephritis-2(5%),others -19 (47.5%). Presentation : 38(95 %) AKIN 3,1 were AKIN 2 (2.5%).Among them thrombocytopenia at presentation were 12(30 %) patients ,13(32.5 %) patients had fragmented RBC seen in Peripheral smear .all patients had elevated LDH. None had low C3,anti-CFH antibodies were absent in all patients. Associated biopsy features were cortical necrosis-14 (35%), collapsing glomerulopathy 1(2.5%), lupus nephritis -2 (5%), malignant hypertension-7(17.5%).37 (92.5 %) were required HD.25 (62.5 %) patients underwent Plasmapheresis .Survival with Plasmapheresis(dialysis independent) were 64 % and without Plasmapheresis (dialysis dependent) were 46%. Mortality in our study 6 (15.4 %).we analysed various risk factors associated with survival.
Conclusion:TMA is an important cause of pregnancy related AKI. With early initiation of Plasmapheresis were associated with better survival .There was 15.4 % mortality associated with TMA in our study .

CNO13.Urotensin-II level and its association with oxidative stress in early diabetic nephropathy

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Aim: To assess the serum levels of Urotensin II in early diabetic nephropathy patients and to find out its association with various markers of oxidative stress .

Patients and methods: A total of 20 diabetic patients with confirmed microalbuminuriaand 10 age and sex matched healthy volunteers were the controls and divided as:

1)Group A: 10 (diabetics) Microalbuminuric hypertensive group

2)Group B: 10 (diabetics) Microalbuminuric normotensive group

3)Group C: 10 healthy volunteers

Serum total antioxidant status (TAS), total oxidant status (TOS), PON-1, arylesterase, and urotensin-II (U-II) levels were measured.

Oxidative stress index (OSI) calculated ad percent ratio of TOS to TAS level .

Urotensin-II- levels : urotensin elisa kit by Cloud-Clone Corp

Results: Study period: march 2015- may 2015

Parameter	Microalbuminuric Hypertensves (n=10)	Micralbuminuric normotensives (n=10)	Healthy control (n=10)	P value
Urinary Microalbumin/Cr (mg/L)	52±68*	41±9[a]	8±11[a]	0.0001
Serum U-II(ng/ml)	60±26’	46±22	13±6[a]	0.0001
TAS (µmol sH_2O_2)	0.90±0.16	0.99±0.11	1.11±0.12	0.0001
TOS(mmol Equiv./l)	19.05±8.3[a]	15.03±2.68[a]	15.44±2.14[a]	0.0001
OSI (arbitrary unit)	2.27±0.46	1.65±0.46	1.38±0.22	0.0001
PON – 1 (U/ml)	105±122[a]	113±101[a]	194±139.5	0.005
Arylesterase (U/ml)	196.44±27.87	202.04±38.94	223.99±34.80	0.016

Serum U-II levels were significantly higher in the microalbuminuric hypertensives compared to microalbuminuric normotensives and healthy controls.(p=0.009 and p=0.0001 respectively) Correlation analysis yielded that serum U II levels were weakly negatively correlated to TAS, aryl esterase, and PON levels (r= -0.395, p=0.001 ; r= -0.291, p=0.014 ; r= -0.279,

p=0.018 respectively) and they had weak positive correlation with TOS levels (r=0.312, p=0.008)

Conclusion: Significantly high levels of UII levels in patients with microalbuminuria suggest association between UII and diabetic nephropathy .

This association between UII and diabetic nephropathy may be thro Oxidative stress

Further studies with large number may be required to confirm this finding

CNO14. A preliminary study of urinary miRNA expression profilein sepsis associated acute kidney injury

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Aim: The aim of the study is to identify miRNAs differentially occurring in the urineof patients with sepsis associated AKI (SAKI) and patients with sepsis without AKI that could serve as potential biomarkers of sepsis associated acute kidney injury

Materials and method: Critically ill children admitted to PICU with a diagnosis of sepsis based on standard criteria were recruited for the study. Three children who developed AKI at the time of PICU admission and 3 with sepsis who did not develop AKI after admission to PICU were chosen for the preliminary study. Total RNA was extracted from urine samples and quality and quantity was determined by Qubit assay and Bioanalyzer (Agilent Technologies, Germany). Small RNA libraries were generated from pooled urinary total RNA (Pool 1: SAKI patients *n*=3; Pool 2:non–SAKIpatients,*n*=3)using TruSeq Small RNA library preparation Kit (Illumina, San Diego, USA) according to the manufacturer's instructions. The sequencing of the libraries was carried out at the Genotypic Technology, India, utilizing the Nextseq500 (Illumina, San Diego, USA). The raw data obtained was analyzed using miARma-Seqpipleline (Andrés-León et al., 2016).

Results: A total of 12.8 M and 13.5 M million raw reads were obtained from SAKI and sepsis patients without AKI respectively. Of these reads, 83% could be mapped to the human genome with high confidence and with limited variation between the two samples. A total of 107 and 72 miRNAs were identified in SAKI and Sepsis patients without AKI. Most miRNAs were of 26nt in length. The most abundant miRNA in urinewas miR-10b-5p which is highly expressed in various tissues, including kidney and has previously also been observed by others in urine samples and also in kidney diseases. A total of29 miRNAs were differentially expressed between SAKI and sepsis patients without AKI with a log fold change cut off 1.5. Ten miRNAs were upregulated in SAKI condition and 19 were downregulated in SAKI condition compared to the sepsis patients without AKI. Among the 29 differentially expressed miRNAs, 17 were reported in previous studies to be involved in kidney diseases.

Discussion: In thepreliminary study we identified a panel of miRNAs differentially occurring in the urineof patients with SAKI and patients with sepsis without AKI that are detectable noninvasively. These miRNAsneeds to be validated in larger cohort in order to confirm their utility as diagnostically sensitive indicators of kidney damage in children with sepsis.

CNO15. Dense deposit disease: A clinicopathological study of 25 patients

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Aim : Dense deposit disease(DDD) is a rare form of glomerulonephritis that results from dysregulation of the alternative complement pathway.The term "DDD" comes from the characteristic appearance of linear electron-dense material in the glomerular basement membrane(GBM)observed on electron microscopy. DDD along with C3 glomerulonephritis are now classified under the heading of C3 glomerulopathies.
The aim of this study is to present the various histopathologic features and outcome of patients with DDD in India. This is the first Indian study to address the clinical features, pathologic characteristics and outcome in DDD patients.
Materials and methods: Native kidney biopsies reported from August 2013 to November 2016 were reviewed and 25 patients of DDD (mean age 20 years) consisting of 16 adults and 9 children (<16yrs)were identified. Light microscopy, full panel of immunofluorescence microscopy(IF) and electron microscopy were performed on all the biopsies. Clinicopathologic features and the various histopathological patterns were analysed.
Results: Age range of the patients was 5-45yrs, with a M:F 14:11. Proteinuria was universally present. 15patients(60%) had renal insufficiency at presentation. Two had partial lipodystrophy and one child had Drusen. C3 was decreased in all patients.
Four histopathological patterns were identified, (i) membranoproliferative(MPGN) (ii) mesangioproliferative, (iii) crescentic and (iv)endocapillary

	PAEDIATRIC (n=9)	Adults(n=16)	P value
Mesangioproliferative	0	5(31.3)	0.082
Endocapillary	2 (22.2)	1(6.2)	0.25
MPGN	4(44.4)	9(56.3)	0.277
Crescentic	3(33.3)	1(6.2)	0.106

Crescentic pattern was seen only below 18 years of age. Mesangioproliferative pattern was not seen in children. Positive staining for immunoglobulins either singly or in combination was seen only in MPGN pattern. C1q was seen in only one patient of MPGN.GBM and mesangial electron deposits, either focally or dense,werepresent in all patients of DDD. Sub-epithelial deposit was seen in only one case of MPGN pattern. Tubular basement membrane deposits were seen insignificantly greater proportion (p-0.009) of MPGN pattern.

Follow up was available for10 patients. One child with exudative pattern had succumbed to the disease.

Age	Pattern	Baseline creatinine (mg/dl)	Baseline proteinuria	Last follow up creatinine (mg/dl)	Last follow up proteinuria	Duration Of follow up
9	Endocapillary	0.9	3+	1	3000	6 months
14	Crescentic	1.8	4+	2	2000	1year
12	Crescentic	2.4	3+	HD		5 months
35	MPGN	3.2	3+	HD		On HD for 3 years
32	MPGN	1.2	3+	1.2	1800	4 months
26	Mesangioproliferative	11	2+	HD		On HD for 2 years
41	MPGN	4	3+	1	2800	14 months
25	Mesangio proliferative	2	4+	2.5	2400	11 months
28	Mesangio proliferative	3.2	3+	HD		On HD for 1 year
17	Crescentic	1.9	3+	1	2200	6 months

Conclusion: DDD is clinically and pathologically heterogeneous. The prognosis of patients with DDD is poor as many of the patients' progress to ESRD.

CNO16. A Study of Acute kidney Injury in cases of Acute Pancreatitis

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Introduction: Acute kidney injury (AKI) in acute pancreatitis is multifactorial. Data on clinical profile and outcome of AKI is sparse.

Aim: To study the clinical, biochemical profile and outcome of acute kidney injury in patients presenting with acute pancreatitis in tertiary care centre.

Materials and methods: It is a prospective study from September 2015 to November 2016. All patients presenting with acute pancreatitis and AKI were included. Acute pancreatitis was confirmed by CT abdomen and elevated lipases. Patients with pre-existing kidney diseases were excluded. AKI was staged by AKIN criteria. Detailed history and clinical examination were done. Investigationsincluding serum amylase, lipase, calcium, fastinglipid profile andCT abdomen were done. Patients were treated symptomatically and renal replacement therapy was initiated when indicated .Number of sessions of haemodialysis and factors influencing the outcome were analysed.

Results: Thirty eight patients of acute pancreatitis had AKI.All were males.Chronicethanol abuse was the commonest aetiology observed in 33(86%) patients.At presentation 30(78%) patients had renal failure and remainingdeveloped renal failure 2 days after admission. Mean peak serum creatinine 4.9 mg/dl. Thirty three(86%) pts had AKIN stage III.Twenty one(55%) patients required RRT (HD-19, PD- 2). Meannumber of HD sessions was 4.1(range1-13). At discharge 19(50%) patients had serum creatinine <1.2, 7(18%) patients had serum creatinine >1.2 mg/dl and 12(31%)patients expired during the hospital admission.On follow up thirteen(34%) patients had complete recovery, 6(15%)patients had CKD-ND, 1(3%) patienthad CKD 5Dand mortality was seen in 15(39%)patients. Cause of death were MODS in 7(42%)and septic shock in 10(58%)patients.Among the surviving patients length of hospital stay more than 10 days predicted poor recovery ($p<0.05$)

Conclusion

1. In our study 13pts (50%) of AKI with Acute pancreatitis recovered completely.
2. Mortality was seen in 15(39%) patients.
3. Length of hospital stay predicted recovery from AKI.

CNO17. Urotherapy and laxatives for childhood bladder bowel dysfunction

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Introduction: Bladder bowel dysfunction (BBD) is a term used to describe children who present a constellation of lower urinary tract symptoms (LUTS) with bowel symptoms. BBD is often unrecognized and underreported by the child or family. Urotherapy which is a non-surgical, non-pharmacological treatment of lower urinary tract dysfunctionhas been tried since past 3 decades. Some western studies have shown that a combined approach using urotherapy and laxatives is useful for treating BBD. This approach has not been studied in Indian children yet.

Objective: To study the clinical spectrum of BBD in children and to determine the efficacy of urotherapy and laxatives in its management.

Methods: This was a prospective observational study conducted in the Paediatric Nephrology and Paediatric surgery departments of a tertiary referral hospital. Children aged 5 to 18 years presenting to these departments with both bladder and bowel symptoms or referred for recurrent urinary tract infection (UTI), but without any anatomical/ neurological abnormality were included in the study (after sample size calculation).During the first visit, after detailed history and clinical examination, basic investigations like urine routine analysis, urine culture and serum creatinine were done. X-ray and ultrasound abdomen were done to look for loaded colon and bladder wall thickening respectively. Those with recurrent UTI underwent DMSA scan to look for renal scars. Children were started on urotherapy and laxatives. Parents were given a urotherapy handout which described various bladder/ bowel training techniques and dietary modifications. They were also given bladder- bowel charts to record the weekly bladder/ bowel habits of their child. On follow up, necessary treatment modifications were made. At the end of 6 months, clinical as well as radiological (X-ray/ USG abdomen) improvement was assessed.

Results: Most common bladder symptoms were dysuria and increased frequency of micturition whereas passing stools at irregular times and hard stools were the commonest bowel complaints. Ninety two children (65.7%) had history of avoiding voiding at school of which majority (75%) were girls. Dietary factor analysis showed that 74% of the children consumed diet less in vegetables and 61% consumed less water. Thirty nine of them had recurrent UTI and of them, 17 had renal scars. Out of132children, 106 had loaded colon initially by X-ray abdomen and after treatment, 87 (82%) had resolution. Among the 37children with bladder wall thickening by USG abdomen, only 1 child had persistent abnormality after treatment. Overall cure rate with urotherapy and laxatives was 85.6%.

Conclusion: Urotherapy with laxatives is highly effective for treating children with BBD.

Table 1- Various LUTS and bowel symptoms in children with BBD

Sl. No	Bladder and bowel symptoms	Number of patients (**N=140**)	Percentage
1.	Dysuria	53	37.9 %
2.	Poor stream	9	6.4 %
3.	Straining	43	30.7 %
4.	Urgency	37	26.4 %
5.	Daytime wetting	24	17.1 %
6.	Nocturnal enuresis	29	20.7 %
7.	Holding/holding manoeuvres	33	23.6 %
8.	Increased frequency	42	30 %
9.	Avoiding school void	23	16.4 %
10.	Passing stools at irregular times	124	88.6 %
11.	Hard stools	90	64.3 %
12.	Small pellet stools	30	21.4 %

CNO18. Does an AV fistula creation reduce the rate of fall of GFR in CKD patients?

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Introduction: Patients of chronic kidney disease (CKD) undergo arteriovenous fistula (AVF) surgery for the eventual initiation of haemodialysis. It is a common observation thatAVF might alter kidney function. This clinical observation is not backed by data.

Materials and Methods: We identified 37 patients between 1995 and 2016 with at least two eGFR determinations for 2 years before and upto 2 years after AVF creation. Patients with a functioning AVF were only included. A control group of patients without an AVF, but on regular follow up were also studied. The study termination were starting of dialysis. Each subject was compared for the
pre- and post-AVF-creation eGFR measurements and also with the controls at the end of follow up.

Results: The results are depicted in tables.

Table 1: Patients with an AVF

Patients: 37 Mean age: 51.3 years	Duration of follow up (years)	Rate of loss of GFR before AVF (mL/min/year)	Rate of loss of GFR after AVF (mL/min/year)
All patients n = 37	8.40 ± 3.8	-9.132419	4.98851
DM n =12	6.4 ± 3.5	-8.02902	-2.595506

DM: diabetes mellitus

Table 2: Patients without AVF

	Duration of follow up (years)	Rate of loss of GFR after follow up (mL/min/year)
Controls n=12	8.444444+6.238075	10.05457
DM n=6	6.4+5.23832	8.625753

DM: diabetes mellitus

Conclusions: A functioning AVF may be associated with aslowing of the eGFR decline. Agreeing to timely AVF creationselects patients in an otherwise typical population and other confounders have not yet been eliminated. To do so a thoroughprospective observational study is indicated.

CNO19. Is reduction in AVP levels by hydrotherapy effective in reducing urinary albumin excretion?

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Introduction: Studies have demonstrated elevated copeptin levels and its relation to albuminuria in patients with diabetes and other comorbidities alike. The present study aimed to reduce AVP levels by advising self monitored hydration and its translation to beneficial effects like reduction in albuminuria

Aim of the Study: To assess the baseline osmolality and copeptin levels in diabetic and hypertensive patients against age matched controls. To assess response to a self monitored period of hydration, its effect on copeptin levels, and translation to reduction in microalbuminuria

Materials and Methods: A comparative cross- sectional study was conducted among 80 male subjects aged 18-40 years, grouped into 3- 25 patients with diabetes, 25 with hypertension and 30 controls. Baseline copeptin levels S.osmolality , albuminuria were assessed. All subjects were advised self monitored hydration (2 -2.5 L intake) for 3 months. S.Osmolality , copeptin levels and albuminuria were reassessed after the prescribed period of hydration.

Results: Copeptin levels remained higher in patients with hypertension and diabetes with higher baseline osmolality levels. Albuminuria and copeptin levels showed significant reduction post hydration. Correlation between reduction in albuminuria and reduced copeptin levels could not demonstrated in this study, though individually they showed significant reduction post hydration.

CN20. Low Cost Accurate determination of Urine Microalbumin using Smart Phone Technology

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Introduction: Urine microalbumin (UMA) identifies diabetes mellitus patients who are likely to progression of diabetic kidney disease (DKD) early. Despite knowing the benefit of annual screening of UMA and with current improvements in health care delivery, in India most patients present late in DKD and report never ever have done UMA. With high smart phone penetration in India, smart phone based technology may empower people and doctors working in rural areas in accurate determination of UMA.

Materials & methods: Conventional urine strips containing UMA strips(Medi-Test Combi 4, BHR Pharmaceuticals Ltd and Color Grab™ Version 3.3.3 (c) 2016 Loomatix Ltd smart phone application were used to measure the color or chromaticity in 2-dimension in xyY CIE 1931 color space. Ambient light correction was done by converting the cell phone case as a dark box.

Results: The relationship between UMA and the x,y was best predicted by the equation UMA = $1.71E\text{-}14*(x,y)^{-15.8}$;(R2 = 0.96).The lowest limit of detection were 35mg/L. The correlation between laboratory measured and smart phone calculated urine microalbumin (UMA) was high with R2 = 0.96.

Conclusion: In one minute and at a cost of less than 5 UMA can be detected with 98% accuracy.

CNO21. To Compare Body Fluid Volume Estimation by Bioimpedance Spectroscopy and Physical Examination in Evaluation of Hyponatremia

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Aim To compare the body fluid volume estimation by physical examination and by bioimpedance spectroscopy in evaluation of patients with hyponatremia.

Materials and methods We performed a prospective observational study of all adult patients admitted in our tertiary care hospital from November 2015 to May 2016 and diagnosed to have hyponatremia (Serum sodium concentration of less than or equal to125 mEq/L). Patients in whom Bioimpedance Spectroscopy (BIS) could not be performed due to technical reasons were excluded from the study. Body fluid status was estimated by three methods; physical examination (PE), BIS and biochemical tests (BC). We estimated fluid status retrospectively after 72 hours of therapy based on outcome (Clinical). Patients were labeled to be hypovolemic, euvolemic and hypervolemic, based on findings of PE, BIS and BC, and compared to status ascertained by Clinical method. Kappa statistic was utilized to establish the level of agreement between PE, BIS and BC with Clinical method.

Results 90 patients were enrolled in our study who were diagnosed to have hyponatremia. We observed that physical examination was in substantial agreement with the clinical diagnosis (kappa coefficient, 0.682) whereas BIS was in moderate agreement with the clinical diagnosis (kappa coefficient, 0.529). Also, biochemical analysis was compared and was found to be in moderate agreement (kappa coefficient, 0.559) with the clinical diagnosis.

Discussion We concluded that BIS can be used to estimate body fluid volume status. Though it cannot replace physical examination (kappa coefficient, 0.529 vs. 0.682, respectively), it can be utilized in cases where physical examination is not feasible. In addition, biochemical analysis can be utilized to assist in the diagnosis of body fluid status.

CNO22. Effect of Correction of Metabolic Acidosis on Body Composition in Pre-Dialysis Chronic Kidney Disease–A Randomized Control Trial

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Aim: Primary aim: To assess the effect of correction of metabolic acidosis on body composition inpatients with CKD 3 and 4.Secondary aim: To assess the effect of correction of metabolic acidosis on preservation of kidney function

Materials and method: This is single-center, open-label, randomized, prospective parallel-group study conducted from Jan 2015-Nov 2016. Patients aged between 18 to 65 years withCKD stage 3 & 4 with stable GFR and venous HCO3 < 22 mEq/dl, were recruited from Nephrology outpatient clinics. Patientswithhistoryof alkali therapy of more than 2 weeks in preceding3 months, decompensated heart and liver disease, morbid obesity (BMI>40 kg/m^2),immunosuppressive therapy, uncontrolled diabetes mellitus and chronic infections, HIV and malignancy were excluded. The calculated sample was 84 in each group**.** Patients were randomizedby a computer generated random numbersequence in sets of 4. Intervention groupreceived standard care plus sodium bicarbonate tablets to maintain serum bicarbonate levels between 22-26 meq/lwhereas control group received standard care only. Study period was 6 months. Demographic, clinical/laboratorial andanthropometricparameters were assessed at baseline and at end of study period. Body composition analysis was performed at entry and exit with a three compartment model DEXA scan (Discovery WI system).

Data are shown as mean± SD or percentages as appropriate. The two groups were compared using an intention to treat analysis. Student's t test and chi square test were used to compare the groups. Nonparametric tests were used when data did not follow normal distribution. Analysis was done using SPSS version 19.

Results: A total of 188 patients, 94 in each group were recruited for study. 89 patients (control arm)& 88 patients (intervention arm)patientscompleted the study. The baseline clinical and anthropometricparametersand etiology of CKD were comparable between the 2 groups.

The baseline bicarbonate levels in control and intervention groups were 18.12 &18.11meq/L respectively (p=0.995). At the end of the study period the bicarbonate levels were 17.83 &23.63 meq/L in control and intervention groups respectively(p<0.001). Average bicarbonate dose received in the intervention arm was 0.5mEq/KBW. The intervention arm showed an increase in mean lean body mass by 408.74 grams from baseline whereas the control arm showed a decrease by 398.95 grams (p = .001). Mid-arm circumference in the intervention arm increased by 28 mm whereas it decreased by12 mm in control arm(p<0.001). Other anthropometric and nutritional

parameters like albumin, cholesterol, weightand BMI did not differ significantly between two groups at the end of study period. On sub group analysis patients with CKD 4 showed a significant improvement in leanbody mass and mid-arm circumference. Even though CKD 3 also showed improvement in LBM and MAC, it did not reach statistical significance. A significantly higher proportion of patients in the control group (27.2%) showed a rapid decline in GFR (>5 ml over 6 months) compared to control group (9.2%); (p=.004).Adverse effects noted were similar among two groups. Only 4 patients required diuretic dosesenhancement for edema in the intervention arm.Antihypertensive requirement remained same between two groups.The invention group showed a significant increase in urinary sodium excretion(84.84 vs101.35 meq/L; p=0.011). In our study correction of metabolic acidosis improved lean body mass and mid arm circumference without having a significant change in body weight over time. The effect seems to be more marked in CKD stage 4. Acidosis correction is also associated with better preservation of kidney function. Bicarbonate supplementation is well tolerated without any significant increase in antihypertensive requirement.

Discussion: PEW is a well-known complication of CKD with varying prevalence in different stages of CKD. Metabolic acidosis increases protein catabolism and aggravates wasting of muscle.Correction of acidosis by oral bicarbonate is relatively cheap with minimal side effects and may help in improving protein catabolism and better preserving the GFR even in early stages of CKD.

CNO23. Lipid Profile Patterns In Predialysis Ckd Stage V Patients

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Aim: To study the patterns of lipid profile in stage V CKD patients, just before the initiation of dialysis as dyslipidemia is the one of the risk factors for increased morbidity and mortality in CKD patients.

Material And Methods: Total of 174 Patients attending to UNIT 1 nephrology OP between aug-2014 to may-2016 are included. Basic biochemical parameters including lipid profile and 2D echo was done. eGFR was calculated using MDRD equation.

Results : DIABETIC NEPHROPATHY was the most common cause of CKD in our population constituting 49%. The mean Total cholesterol was 142.2 mg/dl,HDL cholesterol was 42.1 mg/dl,mean LDL cholesterol was 74 mg/dl,VLDL CHOLESTEROL was 26.9 mg/dl and TRIGLYCERIDE mean was 125.8 mg/dl,mean Hb level was 9.4 mg/dl. Sub analysis of the data showed that 90.2% of the patients had less than 200 mg/dl serum cholesterol. Only 2.9% of the patients has serum total cholesterol more than 240 mg/dl. Only 8% of the study population had serum LDL cholesterol more than 130 mg/dl. And 49.4% of the patients had their serum LDL cholesterol less than 70 mg/dl. 51.9% of the overall men had their HDL cholesterol less than 40mg/dl and 71.1 % of the overall women have their serum HDL cholesterol less than 50mg/dl. 65.5% of the patients have their serum VLDL less than 30mg/dl, 34.5 % of the patients have their serum VLDL concentrations more than 30mg/dl. 66.7% of the patients have their serum Triglycerides less than 150mg/dl. Only 12.6% of the patients have their serum Triglycerides.

Discussion: our study finding suggests a trend towards lower baseline lipid profile patterns in stage V CKD patients before initiation of dialysis, in contrary to the characteristic dyslipidemia with predominant hyper triglyceridemia. However low HDL cholesterol concentration remains to be a constant feature.

CNO24. Histopathological Spectrum of Primary Glomerular Diseases – A Single Centre Experience

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Aim: The aim of the present study is to analyze the epidemiological distribution and pattern of biopsy proven renal diseases over two years duration in a tertiary care hospital at nellore,andhra pradesh

Materials and Methods : A retrospective analysis of all renal biopsies were performed from 2013 to 2015 at our centre.

- Automated biopsy guns with real time ultrasound guidance were used for all the biopsies.
- All biopsies were evaluated by light microscopy, immunofluorescence & electron microscopy (if needed).
- The Incidence of different types of renal diseases were calculated .
- The indications for renal biopsy were categorized in to syndromes like nephrotic syndrome,acute nephritic syndrome,AKI,hematuria,RPRF and asymptomatic urinary abnormalities .

Results: A total of 162 biopsies were performed in 158 patients.

- The most common indication for renal biopsy was nephrotic syndrome 70(43%),RPRF 52(32%),AKI 24 (15%),acute nephritic syndrome 13 (8%),hematuria 3(2%) .
- Among primary glomerular diseases,MCD (23.7%),Membranous nephropathy(17.3%),FSGS(12.2%),IgA N(16.4%),DPGN(5.6%),FPGN(6.2%),CRESCENTIC GN(4.6%),MPGN(4.8%),CHRONIC GN(7.4%),HUS (1.8%).

Conclusion: This study documented the incidence of Biopsy proven renal disease at our centre . MCD was the predominant glomerular disease followed by FSGS , IgA nephropathy and membranous nephropathy.