ISNSCCON 2016, Tiruchy: Abstracts:

Chronic Kidney Disease & Dialysis

CKD& D1: A Comparison between SF 36 and Fried Frailty Criteria in assessing the Incidence, Predictors of frailty and outcomes In Patients with Maintenance Hemodialysis under cashless Government Scheme in a Tertiary care center.

K.J.Priyadarshini, ManjushaYadla, Ramesh Chada, PradeepDeshpande , Department Of Nephrology,Gandhi Hospital,Hyderabad,Telangana, email: drpriyajohn86@gmail.com

Aim: Patients with CKD are characterized by low levels of physical functioning, which, along with low physical activity, predict poor outcomes in those treated with dialysis Aim of our study is to determine the prevalence and predictors of Frailty among a cohort of incident MHD patients.

Patients, Materials and Methods: The study is done in MHD unit of Gandhi Hospital, Secunderabad where patients below poverty line are offered 8-10 sessions of HD along with erythropoietin injections under cashless government scheme. Proforma is prepared using USRDS/ DMMS/ CHS studies and a modified Fried et al criteria is used in determining Frailty. Slowness is assessed by 15 ft. walking test and handgrip is assessed by Rudhamhand dynamometer. Poor endurance/exhaustion, physical inactivity, unintentional weight loss is enquired. Frailty is said to be present if atleast 2 out of these 4 criteria are satisfied.SF36 score is calculated using validated questionnaire consisting of questions about physical health, mental health,vitality,pain and emotional health. A comparision is done as to find out which is a better predictor of frailty. Age, Gender, Duration of dialysis, Comorbities, Hb levels and other laboratory values are assessed to see if these factors potentially predict Frailty.

Inclusion criteria:

1. Patients on MHD > 6 months

2. Age > 18 yrs and < 65yrs

Exclusion criteria:

1. Age < 18 yrs and > 65 yrs.
2. Patients who didn't give consent

Statistical Analysis: Statistical analysis was done using the SPSS package, version 20.0. Results were expressed as mean ± 1 SD done by ANOVA. Significance was considered for $P < 0.05$.

Results: Frailty is present in about 82.5% of incident CKD-MHD patients. Increased Frailty is seen with increased comorbities like HTN, DM, PTB, CVA, CAD &Hep B and C. Frailty is high is patients with anemia than those without anemia.Statistical significance is associated more with Parameters of frailty than with parameters with SF 36

Discussion: Fried Frailty Criteria is a better indicator of frailty in patients on MHD than SF36 which is more a subjective assessment**.**

CKD& D2: Necklace AV Graft – An access to consider

SrinivasNalloor, UpendraShenoy, and Sujay KR, Vikram Hospital #46, Vivekananda Road, Yadavagiri, Mysuru 570020 Karnataka email: nallooris@yahoo.com

Vascular access is the lifeline of any HD program. AV fistula is the best access considering long term patency and low complication rates. AV graft is a feasible option and scores over Permcath in its utility. Though upper limb and lower limb sites are commonly utilised for placement of an AV Graft, a necklace AV graft over the anterior chest wall is uncommon. Materials and Methods: 65y male diabetic and hypertensive patient with ischemic heart disease status post-CABG and chronic kidney disease stage 5 was on maintenance hemodialysis. He had a history of difficult access for his hemodialysis. Previously created AV fistulas had secondary failures and upper limb arm AV grafts had also failed. Peritoneal dialysis option was explored but not pursued in view of non-acceptance from the patient. He underwent creation of a necklace graft over the anterior chest wall with end-to-side communication from right axillary vein to the left axillary artery. 6mm PTFE graft was used and was sourced from Gore-Tex Intering Vascular Graft, W. L. Gore and Associates, Inc., Arizona. Results: The AV graft was successfully used and supported maintenance hemodialysis for more than 2 years. There were no interim complications or any requirement of interventions. The patient expired following sudden cardiac death, while he still had the necklace AV graft which was functional. Discussion: The reasonable patency and low complication rate experienced shows that this bypass necklace AV graft is a valid option in a complex patient. In a patient who has exhausted all options for a successful hemodialysis access, this necklace AV graft can prolong life on maintenance hemodialysis.

CKD&D3:Case Report: Encephalopathy following intra-peritoneal administration of Cefepime

R.Gopalakrishnan, Maruti Hospital, Trichy, Tamilnadu, email: gopal.kidney@gmail.com

Aim: Cefepime intravenous administration is known to produce a neurotoxic syndrome in older patients with renal failure, especially at higher doses. We report a case of cefepime encephalopathy after intra-peritoneal administration.

Case report: A71year female, ESRD- Diabetic Nephropathy, started CAPD elsewhere. Developed peritonitis due to Pseudomonas aeruginosa.Intra-peritoneal Cefepime+Tazobactum 1.125 gram twice a day and Amikacin 100mg/day started, peritonitis improving and patient was discharged home.Admitted to Maruti hospital 4 days later with drowsiness and agitation.BP-240/120 mm Hg on admission, apyrexial, no meningeal or focal signs.Uttering few words on admission, by next day aphasic.Serum calcium and electrolytes within normal limits.CT-scan and MRI brain- normal limits.CSF analysis- normal.Cefepime stopped, intra-peritoneal Ceftazidime 1 gram once a day and Amikacin 100mg once a day. Haemodialysis started via temporary catheter once Cefepime encephalopathy suspected. Recovered and talking next day. CAPD catheter was removed, Ceftazidime changed to intravenous route.

Discussion: When used in older patients, with renal failure, and especially at high doses, cefepime can produce a neurotoxic syndrome beginning after 3 to 5 days. Signs and symptoms:confusion, agitation, global aphasia, myoclonic jerks, epileptic seizures, and coma. EEG monitoring can help in differentiating from nonconvulsive status epilepticus**.** Competitive antagonism with GABA is believed to be responsible for neuronal hyperexcitability. In renal insufficiency, the concentration of cefepime in the spinal fluid rises due to: competitive inhibition of the active transport from CSF to blood, higher blood–brain barrier permeability and low-serum protein binding.

Conclusion: Cefepime encephalopathy after intra-peritoneal administration is rare. This patient developed cefepime encephalopathy after intra-peritoneal administration due to higher than recommended dose of 1 gram per day. It is prudent not to exceed the recommended dose and adjust the dose of Cefepime according to renal function.

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CKD&D4: Evaluation of Mental Health Using Hospital Anxiety and Depression Scale (HADS) in Dialysis Patient's Primary Caregivers

Akshay Prashanth[1*], M.Subhashini[2] P.C. Kesavankutty Nayar[3], R.N.Sharma[3], George Kurian[4]

[1]Amrita Institute of Medical Sciences, Kochi, Kerala, [2] PG Resident, Amrita Institute of Medical Sciences, Kochi, Kerala, [3] Department of Psychiatry and Behaviour Medicine, Amrita Institute of Medical Sciences, Kochi, Kerala, [4] Department of Nephrology, Amrita Institute of Medical Sciences, Kochi, Kerala
email: akshayrsk@gmail.com

Background& Aim: There are inadequate research on anxiety and depression in the dialysis patient's primary care givers. Hence, the present study aimed to analyse the anxiety and depression of dialysis patient's primary caregivers using Hospital Anxiety and Depression Scale (HADS).

Materials and Methods: The present study enrolled 52 patients from Amrita institute of Medical Sciences Hospital, Kochi, Kerala. Their mental health was assessed by using HADS. The patient's caregivers were categorised into three groups based their age namely <40 years,41-59 years and >60 years. The caregivers characteristics like relationship, educational status, type of family, income status, frequency of dialysis, number of hospitalization per year and monthly expenditure for dialysis were taken in to the consideration.

Results: The total number of caregivers enrolled in the present study was 52 (Male: 18, Female: 34). The overall HADS indicated that both anxiety and depression were mildly higher than the normal. However, the gender based analyses shows, women caregivers were moderately depressed and mildly in anxiety. Middle aged female caregivers were affected with both. Whereas in male the young aged male caregivers were in mild depression. The remaining male groups no significant depression and anxiety were noted.

Conclusion: The middle aged women caregivers (41- 59 years) were mildly depressed and had anxiety when compared with other groups.

CKD & D5: Serum Procalcitonin as a Marker of Infection in Chronic Kidney Disease Patients on Hemodialysis in Sepsis

SatyanarayanaGarre, M.S .Ramaiah Medical College, email: msrmedical@gmail.com

Introduction: The use of PCT as a bacterial diagnostic marker is controversial in patients on hemodialysis (HD). Infections account for considerable morbidity and mortality in patients on HD; hence, early diagnosis of bacterial infections is important to make a prognostic assessment of its severity. If PCT can be used as a primary marker for bacterial infections in patients on HD, these infections can be diagnosed and treated early.Therefore, we investigated whether PCT could function as a primary diagnostic marker of bacterial infections in patients on HD.

Aim:1) To measure and show that serum procalcitonin levels will be increased in patients with chronic kidney disease in sepsis on hemodialysis, and will be clinically significant.

2) To compare the serum procalcitonin levels in patients with on hemodialysis with sepsis to procalcitonin level of patients on hemodialysis without sepsis

Methods:A total of 80 patients of chronic kidney disease on hemodialysis admitted in M S Ramaiah Hospital during the period October 2012 to september2014, were included in the study and were divided into 40 cases and 40 controls considering the inclusion and exclusion criteria.

Results: Raised Serum procalcitonin is significantly more associated with cases with $P<0.001$.In our study the PCT was measured before dialysis, with cut-off>5 (approx) the Sensitivity is 92.50, and Specificity is 100.00, AUC=96.1%, SE=0.023 with $P<0.001$.

Conclusion:PCT is a good marker of bacterial infection even in patients undergoing HD. Serum PCT is an accurate indicator of severe infection and sepsis in patients receiving intermittent HD.Furthermore, the PCT cutoff level that indicates a bacterial infection should be set at 5ng/mL in HD patients.

CKD&D6: Mortality Audit of Maintenance Hemodialysis patients: A Single Centre Study

P RakeshMadhyastha, Sujeeth Reddy, E Mahesh, Gurudev K C, M S Ramaiah Medical College, Bengaluru, Karanataka, email: rakeshmadhyastha@gmail.com

Aim: Mortality of patients on regular renal replacement study has been studied mostly in the west. Very few data exists from developing countries and more so from India. Previous reports have focused on technical components of maintenance haemodialysis, in this study we focus more on patient aspects of haemodialysis and we have done an extensive retrospective analysis of all-cause mortality in haemodialysis patients

Materials and methods: This is a retrospective analysis of clinical data of patients on maintenance hemodialysis at M S Ramaiah Memorial Hospital which is attached to M S Ramaiah medical college,Bangalore. This hospital is a tertiary care teaching hospital catering to 350 dialysis patients with 42 dialysis beds in total. This study was conducted between March 2014 to March 2015 on patients who were undergoing maintenance haemodialysis .

We analysed the incidence of deaths in haemodialysis population between March 2014 to March 2015. Adults who were established ESRD patients with a dialysis vintage of minimum of three months were included into the study. A retrospective analysis of the clinical data was done and co related with various parameters. All patients were dialysed with Fresinius 4008 machine using the Fresinius F6 dialyser. Patients are prescribed 4 hours dialysis, three times a week and any deterrent in this prescription was noted in the data that was collected.

The presence of predialysis comorbid conditions was confirmed by review of the medical charts and these diseases were grouped into type 2 diabetes mellitus, hypertension, ischemic heart disease, cerebrovascular accident and hypothyroidism. Hypertension and diabetes accounted for 79.1% of the study population; it is of paramount clinical importance as far as the disease burden is concerned. As there was no routine renal biopsy the real causes of ESRD in this setting cannot be stated.

Diagnosis of CKD was based on biochemical and clinical grounds. The criteria to start dialysis were based mainly on patient's clinical conditions such as uremic symptoms, metabolic acidosis, refractory hyperkalaemia and fluid overload intractable to medical line of management.

Inclusion criteria: All adult patients (18 years and older) who were on maintenance hemodialysis during the specified period were included in the study.

Exclusion criteria: Patients temporarily getting dialysed at our set up for various reasons

Patients on dialysis for less than three months

Data was collected using Medical records of patients on maintenance haemodialysis for end stage renal disease at M S Ramaiah Hospital between March 2014 to March 2015. The data was collected by complete review of patient's clinical data

Results:320 patients were registered for haemodialysis with us between March 2014 to March 2015. 53 deaths occurred in this period and were included into the study.

Males were 73.6% and females were 26.4%. Out of the study population 5.06% deaths were seen in younger age group (18-30), majority of the deaths were seen between the age group of 30-60 (67.9%) and the elderly (>60) accounted for a lower majority (27.04%).

The dialysis unit had a total of 350 patients on roll between March 2014 to March 2015. 63.7% males and 36.3% females. In the >60 age group (n=82) 73% were males and 27% females. In the age group of 18-30 years (n=19) 52% males and 48% females. In the 30-60 age group (n=214) 71.4% were males and 28.6% were females.

The most common co morbid condition was type 2 diabetes mellitus and hypertension which was seen in 79.2% of the study population. The other noted co morbid conditions were hypertension alone in 9.4%, ischemic heart disease in 22.6%. Hypothyroidism in 9.4% and Old history of CVA in 5.4%.

In the study population 91.5% were sero negative, 5.7% were anti HCV positive and 3.8% were HbsAg positive.

50.9% of the patients had at least two sessions of dialysis a week. The duration of each session was 4 hours and very rare occurrence of stopping of the dialysis before the completion of the session. The reasons for sub therapeutic dialysis were financial constraints, distance from the dialysis centre, lack of attendants and logistical issues.

Only 37.7% of the patients received the prescribed 3 times a week haemodialysis and unfortunately about 11.3 % of the patients received just once a week haemodialysis

The study population of divided into 3 groups based on the dialysis vintage as , 3months-2 years, 2-4 years and 4-6 years. It was seen that majority of the patients were seen in the second group (41.3%), very few patients survived dialysis for more than 4 years (19.6%) and 39.1% succumbed within 2 years of dialysis

While reviewing the lab parameters we found that majority of the patients were having haemoglobin of sub therapeutic range of less than 10 mg/dl (78%) and only a small minority of the patients had haemoglobin of more than 10 mg/dl (22%) with mean haemoglobin being 8.8 mg/dl.

Hyperkalemia was noticed in 12.2 % of the patients, Out of these patients 50% died of sudden cardiac death, 25% due to acute myocardial infarction and 25 % secondary to infective aetiology.

Corrected calcium was calculated and it was seen that 83.7% were hypocalcemic and only 16.5% of the patients had normal calcium levels.

Hypoalbuminemia (Albumin <3.5 mg/dl) was seen in of the patients and 92.4% of the patients. Only 7.6% of the patients had normal albumin levels

Hyperphosphatemia was seen in 20.7% of the patients whereas hypophosphatemia was also seen in about 3% of the patients. Normal phosphorus levels were seen in the rest (76.3%)

Contrary to various reports [8,9] thrombocytopenia was present only in 15.2% of patients and normal in the rest of the study population. All study groups received the same dose of heparin during dialysis (1,000 international units of Unfractionated heparin per hour) however sepsis induced thrombocytopenia could be a possibility in 12% of the patients

The most common cause of death is sudden cardiac death in our study population (24.5%), however in 30.2% of patients death had occurred at home. When history was taken from their attendants the following were noted, 25% had discontinued dialysis, 37.5 % had sudden onset of shortness of breath followed by inability to reach hospital on time for dialysis. Furthermore in 25% of the 'at home' deaths the patients were found to be in unresponsive. Seizure followed by death was seen in 12.5% of the patients and in the remaining no apparent cause could be ascertained

The institutional deaths were divided into 6 sub categories, bronchopneumonia, septicaemia with septic shock, cardiogenic shock, cerebrovascular accident and sudden cardiac death. The outcomes were as follows. Sepsis with septic shock accounted for 15.1% of the patients, acute pulmonary oedema and cardiogenic shock were noted in 5.7% of the patients and bronchopneumonia was seen in 3.8% of the patients.

Discussion: Long term survival in those undergoing dialysis is low and can be attributable to various medical conditions. This is a single centre study and forms a ground for future research into betterment of patient survival.

Our centre fared better in comparison to the Ethiopian study in terms of 1 year survival where 60.9% survived for more than a year compared their 42.1%. When compared with the long term survival in developed countries where the 2- and 5- year survival was 67% and 35% our study showed that only 19.6% of the study population reached the stage of dialysis beyond 4 years (9). However 41.3% of the population survived for 2-4 years. These results pose a question on the adequacy of dialysis delivery in our centre. However, other factors should be also considered and be addressed in future prospective studies.

Majority of the patients died at home accounting for 30.2% of the study population, among them 37.5% reported inability to reach the hospital on time as the cause of death, 30.2% of them had

discontinued dialysis for various reasons. In the institute sudden cardiac death remained the most common cause of death (24.5%) followed by septicaemia and septic shock (15.1%).

When patient compliance to dialysis was reviewed, only 37.7% of the dialysis patients received adequate dialysis in terms of duration and frequency. Vast majority (62.2%) received two or less than two times a week haemodialysis which could have added as an confounding factor for their early demise.

Hyperkalemia was noted in 12.2% of the study population and 75% of these patients had death related to cardiac aetiology.

Hypoalbuminemia was seen in a majority of the patients and was a good maker of mortality in these patients. Furthermore hypocalcemia was seen in the 83.7% which could have been a better marker for deaths (10). However as our study population is small further research is required in this aspect

Normal phosphorus level was seen in 76.3% of the patients and mean 4.6 (+/-1.5) mg/dl which is as per KDIGO 2012 guidelines

Although important findings were obtained from the present study, there are some limitations worth mentioning. It was a single centre study with a limited study period with a small study population, other parameters such as urea reduction ratio, BMI, anthropometric analysis and GFR could have added wealth of information unfortunately this could not be done as this was a retrospective analysis. Most of the patients were from the capital city of Bangalore; a region characterized by a better socio-economic status, and therefore, cannot be used as representative national data.

CKD& D7:Employment status of patients receiving maintenance dialysis- peritoneal and haemodialysis: a cross sectional study

Anil Kumar. C V, Sangeetha Lakshmi B, Jayagopal, Chaitanya V, Hari Krishna Reddy M, Sulochana N, Hema M, LathaMargarate, Sandeep P, Ram R, Siva Kumar V. Sri Venkateswara Institute of Medical Sciences, Tirupati, email:anilcv4u@gmail.com

Aim: To study the employment status of our patients on maintenance dialysis-haemodialysis and peritoneal dialysis.

Materials and Methods: A cross-sectional study in our patients undergoing maintenance peritoneal and haemodialysis was conducted to study the employment status with special reference to patient characteristics, treatment modality and comorbidities. The socioeconomic status was estimated by Kuppuswamy socioeconomic status scale and Karnofsky performance scale was used to estimate performance of the patient.

Results: The number of haemodialysis and peritoneal dialysis patients included in the study were 155 and 69 respectively. Of 69 patients on peritoneal dialysis 23 were on automated peritoneal dialysis (APD) which included 2 patients on institutional APD. The mean age (± SD) in haemodialysis and peritoneal dialysis were 54.1±14.2 years and 55.8±11.3 years. The proportion of males in haemodialysis and peritoneal dialysis were 70.3% and 81% respectively. The proportion of diabetics in haemodialysis and peritoneal dialysis were 41.2 % and 60.8% respectively. The proportion of illiterates in haemodialysis and peritoneal dialysis were 18.6% and 15% respectively. The Karnofsky performance scale in haemodialysis patients was 80 in majority (60%) patients and in peritoneal dialysis patients was in 90 in majority (63.7%). The proportion of patients in employment haemodialysis and peritoneal dialysis before initiation of dialysis were 51.6% and 47% respectively. The blue collar and white collar jobs were performed by 52.5% (42 out of 80) and 47.5% (38 out of 80) in haemodialysis. The blue collar and white collar jobs were performed by 58.9% and 41.0 % in peritoneal dialysis. The blue collar and white collar jobs were performed by 64% (16 out of 25) and 36% (9 out of 25) of patients in CAPD. 50% each of APD patients had performed the blue collar (7 out of 14) and white collar (7 out of 14) jobs. The proportion of patients changed in haemodialysis after initiation of dialysis (45) when compared to before (80) was significant (p=0.002).The proportion of patients changed in peritoneal dialysis after initiation of dialysis (20) when compared to before (39) was significant (p=0.013).The change of job after initiation of dialysis was observed in 56.2% (45 out of 80) in haemodialysis and 51.2% (20 out of 39) in peritoneal dialysis (p=0.6959). The number of patients who changed their jobs in CAPD and APD were 76 % (19 out of 25) and 14.2 % (2 out 14) respectively (p= 0.0008). The change of blue collar job after initiation of dialysis was observed in 59.5 % (25 out of 42) in haemodialysis and 95% (19 out of 20) in peritoneal dialysis (p=0.0058). Of the 19 patients of peritoneal dialysis who changed the blue collar job, only 2

were on APD and remaining were on CAPD (17 patients).Of white collar job performers (38 patients) in haemodailysis nine patients (23.6%) changed the job. Of white collar job performers (16 patients) in peritoneal dialysis only one (1; 6.25%) changed the job and that patient was from CAPD. The comparison of white collar job performers between hemodialysis and peritoneal dialysis was not significant ($p = 0.2495$). The median distance the haemodialysis patients had to travel from work place to home is 3.5 km and work place to dialysis centre is 7.0 km. The factors which influenced the change of job for all the patients were males, age between 50 and 60 years, poor Karnofsky performance scale, low middle and low socioeconomic categories on Kuppuswamy socioeconomic status scale, higher comorbidities and educational status.

Conclusions: Loss of employment was significant after initiation of dialysis in haemodialysis and peritoneal dialysis patients in comparison to the employment status in the predialysisphase.The fall of employment was similar in home and institutional dialysis modalities. The loss of employment was more in CAPD over APD. The loss was more in blue collar jobs in peritoneal dialysis over haemodialysis. In peritoneal dialysis majority of white collar employees continued their employment in comparison to haemodialysis.

CKD& D8: Treatment of Hepatitis C Viremia in patients on maintenance haemodialysis with Sofosbuvir and Ribavirin

Mohammed ShujauddinAkhil, BalajiKirushnan, Melvin Martin, Kanakaraj A, RajanRavichandran, MIOT Institute of Nephrology
email:aaqil_mohammed@yahoo.co.in

Aim: To determine the safety and efficacy of sofosbuvir and ribavirin in ESRD patients on maintenance haemodialysis.

Methods:A prospective observational study on ESRD patients undergoing haemodialysis at our dialysis unit having HCV viraemia. Patients received sofosbuvir 400mg once daily and ribavarin 200mg twice weekly for 12weeks. Hcv viral load and genotype were done before initiation of therapy. HCV viral load was monitored serially at 4, 16 and 24 weeks after starting therapy. Patient's haemoglobin was monitored once in 2 weeks during the course of therapy

Results:20 patients received therapy, of which 15 have completed 12 weeks of therapy and remaining 5 are on therapy. 16 patients had genotype 1, 2 patients had genotype 3, 2 patients had type 4 and 1 patient had type 1 and 3 (mixed infection). 17 patients received full dose while in 3 patients 200mg of sofobuvir daily and 200mg of ribavarin once a week was administered due to adverse effects. On- treatment viral suppression was 100% and sustained virological response (SVR) rate at 12 weeks after stopping therapy was 80%. Anaemia was the major adverse effect requiring modification of ribavarin dose and escalation of the dose of erythropoietin. No hepatobiliary or cardiovascular toxicity was noted

Discussion: This study shows that sofosbuvir and ribavarin have a sustained virological response of 80% and is safe in patients on maintenance haemodialysis. There are no published data on patients receiving therapy with directly acting antiviral drugs on patients undergoing haemodialysis. Achievement of sustained virological response of hepatitis c infection in haemodialysis patients prior to transplant has shown to be associated with superior graft outcomes. However larger studies are needed to confirm our results.

CKD&D9: Peritoneal dialysis versus hemodialysis on deceased donor renal transplant outcome

Raghavendra ,Karthik, Uttaradas, Swarnalatha, Gangadhar, Nizams Institute Of Medical Sciences email: raghavendrasadineni@gmail.com

Aim: Studies examining the effect of pretransplant dialysis modality on graft function have produced conflicting results. Therefore we studied the effects of pretransplant dialysis modality on outcomes.

Methods: Retrospective observational study done between 2004 and 2005 in nizams institute of medical sciences, Hyderabad.

Results: a total of 36 patients underwent deceased donor transplantation during the study period, 13 were on CAPD and 23 were on HD before transplantation. Delayed graft function was seen in 84% of CAPD patients and 65% of HD patients. Total number of rejection episodes occurred in CAPD patients 15%, 34% in HD patients. 13 infection episodes occurred in CAPD patients, 17 in HD .one year patient survival was 92% in CAPD patients and 70% in HD patients. one year. One year graft survival was 92% in HD patients and 100% in CAPD patients.

Conclusions: Kidney transplantation is more frequent in hemodialysis than in peritoneal dialysis patients. and transplantation in peritoneal dialysis patients is more frequently associated with delayed graft function, but not late, graft failure. pretransplant peritoneal dialysis use was associated with lower mortality rate at one year with good graft function.

CKD&D10: Role of Ambulatory BP Monitoring in identifying Cardiovascular disease in patients on Hemodialysis

Dipin.S, Pradeep VR, M.Sreelatha, T.P.Noushad, Jayakumar.E.K.email: nephcal@gmail.com

Introduction: ABPM is a superior, more accurate method which predicts the adverse cardiovascular outcomes in hypertensive and normotensive subjects and is also the only method capable of assessing diurnal BP variation, which has its own prognostic relevance.In dialysis patients, volume expansion *per se*is not a factor in the genesis of diurnal BP rhythmicity. Negative end-organ consequences of abnormal diurnal BP variability have been reported in renal cohorts. This study attempts to bring out the inadequacies of routine peridialysis BP monitoring, the trends of ABPM in such patients, and its relation with cardiovascular disease.

Aim: 1. To assess inadequacies of routine peridialytic BP monitoring compared to ABPM

2. To bring out any relation between diurnal trends and occurrence of cardiovascular disease.

Materials and methods: 37 patients on hemodialysis were selected from the patient population attending Department of Nephrology , Medical College Kozhikkode. All underwent 24 hr ambulatory BP monitoring and their baseline data collected. Data was estimated to assess the concordance with peridialytic and home BP monitoring, any relation of their hypertensive status and relation with LVH, CAD and diabetic status.

Results: Home BP measurements best correlated with mean blood pressure recordings in ABPM(standard error 9.04mmHg). Also the diurnal index which identified the non dippers showed association with LVH and diabetic status(p value<.05). The hyperbaric index reflecting the hypertensive load was also strongly associated with LVH and cardiovascular risk. Hyperbaric index and morning surge identified a subset of patients with high risk who had only marginally high peridialytic BP recordings. The mean systolic ambulatory BP recordings well correlated with interdialytic weight gain. (p value<.05)

Conclusion: Mean ambulatory BP recordings correlated with the interdialytic weight gain

Closest possible alternative to ABPM is home BP recordings.

Ambulatory BP monitoring identifies patients with absent nocturnal dipping and hypertensive load leading to better risk stratification.

ABPM may help in better drug tailoring to avoid nocturnal dipping and morning surge

CKD&D11:Incidence of Chronic Kidney Disease Related Mineral Bone Disease in Predialysis Stage 4 and 5: Observational study

K.Bharathi, Uttaradas, Gangadhar, Swarnalatha, Raja karthik

Nizams institute of medical sciences, Hyderabad, email: Bharathi.ndl@gmail.com

Introduction:CKD-MBD (chronic kidney disease -mineral bone disease) has been poorly studied in predialysis Indian CKD patients. We aimed to study biochemical and skeletal manifestations of untreated stage 4 and 5 CKD patients.indian patients have hypocalcaemia, hyperphosphatemia, vitD deficiency in predialysis stage.

Aim: To study the clinical, biochemical and skeletal manifestations of untreated CKD-MBD in predialysis stage 4 and 5 attending nephrology out patient clinic in Nizams institute of medical sciences.

Materials and methods: Inclusion criteria: all patients attending nephrology OPD with newly diagnosed stage 4 and stage 5 CKD during April 2015 to May 2015.

Exclusion criteria: patients who received calcium supplements, vitamin d analogues, anticonvulsants, bisphosphonates,steroids.

Methods: We assessed the serum creatinine, eGFR, serum calcium, phosphorus, vitamin, iPTH and demographic profile of the patients. Xray skull, xray both hands, xraydorsolumbar spine was done to look for skeletal abnormalities of CKD-MBD.2D Echo was done to look for valvular calcification.

Stastical analysis: SPSS software is used for analysing the data.

Results: Demoraphic profile: 50 patients were enrolled in to the study during the study period.of which 39 are male and 15 are female.Diabeticnephropathyis the most common etiology followed by Chronic interstitial nephritis.

Biochemical parameters: mean serum calcium are 8.65 in females and 8.47 in females.mean serum phosphate levels are5.34 and 6.07 in females and males.mean vitD3 level in females is 14.25 and 21.45 in females.meaniPTH values are 199.8 and 160.13 in females and males respectively.

Skeletal survey: only 2 female patients had xray features suggestive of hyperparathyroidism.

Only one patient had valvular calcification

Discussion: Prevalence of CKD in India has been estimated to range between 0.78 and 0.87%.however data regarding MBD in predialysis stage not known. study population comprised mostly young and middle aged men of low to middle income group.phosphate levels are high in men than in women.no difference in serum calcium.vitD3 is low in females compared to males owing to poor intake,less sun exposure, valvular calcification in one subject is whether due to age related or vitD deficiency needs further study.

CKD & D12: Emphysematous Cystitis in an Elderly Diabetic ESRD on Hemodialysis presenting with severe Anemia

SrinivasVinayakShenoy[1] ,Ravindra Prabhu[2] , Shankar Prasad[3] , Dharshan Rangaswamy[4]

[1] DM Resident ,[2] Professor and Head , [3] Associate Professor , [4] Assistant Professor , Department of Nephrology , Kasturba Medical College , Manipal, email: drsrinivasshenoy@gmail.com

Introduction: Emphysematous cystitis is one of the rarer presentations of complicated lower urinary tract infections characterized by visualization of gas in the bladder wall on imaging studies . Prior studies have shown a preponderance of cases in elderly diabetic women. The variability in the nature of clinical presentation also makes it a diagnostic dilemma. There have been very few case reports of emphysematous cystitis in End Stage Renal Disease (ESRD) patients. Here we present a case of Emphysematous cystitis in a diabetic ESRD patient presenting with severe anemia

Case: A 73 year old elderly diabetic male with ESRD on maintenance hemodialysis presents to the outpatient department with symptoms of giddiness and occasional haematuria since 1 month . He was on twice weekly maintenance hemodialysis since 5 years with residual urine output of <100ml per day , compliant with Erythropoietin analogues and maintenance Iron Sucrose therapy. On initial evaluation he was found to have severe anemia . An ultrasonography of abdomen followed by a Non Contrast CT KUB showed typical radiological features of emphysematous cystitis with gas in the urinary bladder. Urine culture showed growth of E.coli and he was managed with IV Meropenam as per the culture reports , blood transfusion and bladder drainage leading to complete recovery and resolution of emphysematous changes on the follow up ultrasonography.

Discussion: The aetiopathology of emphysematous cystitis remains poorly understood. An elevated tissue and urinary glucose level may act as a nidus for proliferation by gas forming bacteria. Prompt recognition and management is key to treatment success and carries a better prognosis than emphysematous pyelonephritis.

CKD& D13: Safety practices in Haemodialysis unit - How effective are they?

Pushpanjali, Uma Maheswari, Santhosh Kumar, KiranPatro, Ramakrishnan S, DilipRangarajan, NU Hospitals, Bangalore, email: dr.dilip@nuhospitals.com

Aim: To evaluate the effectiveness of safety practices in haemodialysis unit

Materials and Methods: The following safety practices have been put into place 2 years ago in haemodialysisunit.Training of the staff, implementation and auditing of compliance of protocols evolved.Data collected on a daily basis shift wise regarding missed blood pressure recordings, extravasations, catheter related infections.Monitoring of hand hygiene and surface cleaning – direct and cctv.Daily audit of patient files, machine fluid removal status, disinfection status and erythropoietin usage.Daily morning summary report ofprevious days patients details. Training of staff for cannulation in OT and on mannequin.Monthly review meetings and implementation of changes with deadlines.Effect of practice evaluated at 1 and 2 years**.** Statistical analysis done by comparison of means and difference between two independent proportions (vassarstats)

Results:	**2013**	**Nov 2014**	**Oct 2015**	**Average**	**p**
CLABSI(per1000 catheter days)	7.2	5.68	2.25	4.21	0.04
Hepatitis C Conversion	4	0	1		
Extravasation AVF Site		0.2%	0.1%	0.45%	0.17
Wrong Dialyser Identity		0	0	0	
Missed BP		2.1%	1.4%	1.3%	0.13
Hb(gm/dl)		8.5	11	9.60	0.19
S.Albumin(gm/dl)		3.2	2.8	3.1	0.58
S.Potassium(mEq/L)		5.4	5.7	5.6	0.44
Kt/v		1.17	1.3	1.3	0.45
Central Line Rates		24.5%	30.9%	32.5%	0.15

Conclusions: Safety practice is effective in **p**reventing usage of wrong dialysers on patients

Reducing CLABSI rates.Controlling Hepatitis C spread. Limiting the episodes of extravasation at AVF site.Ensuring that blood pressures are monitored regularly.Ensuring adequate Hb for patients and ensuring adequate dialysis. Still much needs to be done in limiting the use of temporary vascular access.

CKD&D14: Etiological profile of Chronic Kidney Disease (CKD) in Children- A Tertiary Care Centre Study

Jaganathan P, Dhanapriya J, Dhinesh T, Sakthirajan R, Malathi N, Senthilkumar, Madhivanan, Manoranjan, Padmarajan, Balasubramaniyam T, GopalakrishnanN.Madras medical college email: mmcnephro@gmail.com

Aim: To determine the etiology of chronic kidney disease amongst children attending Institute of Child Health-Madras Medical College.

Materials and Method: We retrospectively reviewed the records of 231 children from 2012-2014. CKD was defined as eGFR below 60ml/min/1.73m^2 (modified Schwartz formula).

Results: Among 231 children, 159(68.83%) were boys. The mean age at presentation was 6.94 years (3 months to12 yrs). Eighty six children were below 5 years of age. The mean eGFR at presentation was 23.50 ml/min/1.73m^2. 71% of children were in the stage 4 and 5 at presentation. The mean hemoglobin at presentation was 7.3 G/dl. The most common cause of CKD was obstructive uropathy which was seen in 92 (39.83%) children. Among them, 42 children had posterior urethral valve, 35 children had pelvi ureteric junction obstruction and 15 children had renal stone disease. Other causes included reflux nephropathy in 52 (22.5%), chronic glomerular disease in 37 (16.02%), cystic kidney disease in 25 (10.82%), CAKUT other than PUV and PUJ obstruction in 15 (6.49%), HUS in 3 (1.30%).Of the 37 children with chronic glomerular disease, 3 patients had FSGS, 5 patients had MPGN, 4 had IgA Nephropathy, 2 had Lupus nephritis. Among the 23 SRNS cases, 8 patients had minimal change disease, 3 had Ig A Nephropathy, 4 had diffuse mesangial proliferation, 4 had MCD/unsampled FSGS, 4 patients not underwent biopsy. In 4 children cause was unknown.

Conclusion: 1.Obstructive uropathy was the commonest cause of CKD in children (n-92,39.83%).

2. Majority (71%) of the children were in advanced stages of CKD (stage 4/5) at presentation itself.

CKD& D15: Assessment of QOL in Hemodialysis patients and its Correlationwith QOL of Caretakers- A Single Centre Experience

Murali M*, PradeepShenoy M**, Sudha M*** *Department of General Medicine,**Department of Nephrology,*** Department of Community Medicine, K S Hegde Medical college, Mangalore, Karnataka email: muralimuparpu@gmail.com

Aim: The objective of our study is to assess the QOL in caretakers and correlate with QOL of hemodialysis patients.

Materials and methods: A hospital based cross sectional study was done on80 CKD patients on maintenance hemodialysisalong with one individual taking care of them,atdialysis centers attached to K.S Hegde Medical Academy. Individual data was collected usingWorld Health Organization Quality-of-Life Questionnaire (WHOQOL-BREF).Descriptive analysis of total QOL score, physical health, psychological health, social relationship and environment was done. Statistical analysis was done byspearmans correlation coefficient.p value < 0.05 was considered significant.

Results: QOL of Hemodialysis patients was found to be significantly impaired ($p < 0.05$). Physical and psychological domains were more severely affected. Female patients had severe reduction of QOL especially in psychological domain.Caretakers with awareness about disease had significantly high social quality of life than the caretakers without having awareness about disease. Caretakers awareness about the disease was positively associated with QOL of Hemodialysis patients.

Discussion: ESRD is a chronic disease which requires continuous medical, social and especially financial support. Findings have shown that lower QOL was strongly associated with higher risk of death and hospitalization than clinical parameters such as serum albumin levels. Correlating the QOL of patients and their caretakers would assist healthcare professionals to improve overall quality of care. Our study concluded that QOL of hemodialysis patients is low and it correlates with poor QOL of caretakers.

CKD& D16: CKD Registry – A Single Centre Experience

Sumeet S, Santosh V, Suceena A, Anna T V, Shibu J, Harish R P, Shailesh K T, Sandeep P, V Tamilarasi. Department of Nephrology, CMC, Vellore, Tamil Nadu, India email: nephro2@cmcvellore.ac.in

Aim: After 2011, there is no national level data on the pattern of chronic kidney disease in India. This CKD registry looks into demographics, etiology and other characteristics.

Material & Methods: This retrospective study was conducted in all the patients diagnosed as a case of CKD in CMC, Vellore from 1st Jan 2014 to 31st Dec 2014. Data from these patients was analyzed in this study.

Results: The mean age was 45 ± 18.6 years, with M:F ratio of 65:35. Main causes of CKD were hypertensive nephrosclerosis, diabetic nephropathy & chronic glomerulonepritis. About 35% cases presented in Stage V. Diabetic nephropathy patients were older in age as compared to other. Patients in lower income groups had more advanced CKD at presentation.

Discussion: CKD demographic profile over the years has changed to little degree over the time. Previous studies also showed it to be male dominant, with diabetic nephropathy as a main cause.

CKD&D17:Pheochromocytoma of urinary bladder in a haemodialysis patient

Kavitha Praveen, Anil Kumar.C.Venkata, HariKrishna.M, Sangeetha,Chaitanya, Sandeep P, Ram.R, Siva Kumar V

Department of Nephrology, Sri Venkateswara Institute of Medical Sciences, Tirupathi, Andhra Pradesh, email: anilcv4u@gmail.com

A 43-year-old gentleman underwent bilateral nephrectomy for bilateral renal cell carcinoma which was a part of von Hippel-Lindau disease (VHL) in 2011. He was on thrice a week haemodialysis through left radiocephalic fistula. He is on amlodipine, telmisartan and ramipril. He was on regular erythropoietin. After four years of haemodialysis he presented with episodes of uncontrolled hypertension and intradialytic hypertension. He required addition of three more antihypertensives. Clonidine, metaprolol and prazosin were added. Patient was specifically evaluated for the causes of hypertension while on regular haemodialysis (1). There was no paedalodema and facial oedema suggestive of volume overload. The lowering of dry weight produced cramps; there was no reduction in blood pressure. The echocardiographic volume parameters did not change before and after haemodialysis. The volume reduction during dialysis was carefully matched to weight gain, so as to avoid excess stimulation of the renin-angiotensin-aldosterone system associated with intravascular volume reduction. Patient was on angiotensin converting enzyme inhibitor and angiotensin receptor blocker before the blood pressure became uncontrolled. To avoid removal of antihypertensive medications during dialysis that could precipitate intradialytic hypertension amlodipine, telmisartan, prazosin were prescribed before dialysis and clonidine and metaprolol were prescribed after haemodialysis. Dialysate sodium levels were adjusted to maintain serum sodium at 135 mEq/L. Ionized calcium was maintained between 4.4-5.4 mg/dL. The dose of erythropoietin was also adjusted to maintain haemoglobin less than 11.0 g/dL. There was no reduction in blood pressure despite all these measures. AI-131 MIBG scintigraphy was done. Calcium channel blockers were replaced with minoxidil forty eight hours before procedure and Lugol's iodine was given to minimize the radiation dose to thyroid. The I-131 MIBG scintigraphy revealed abnormal uptake in urinary bladder when both kidneys removed and it persisted for 96 hours. It suggested the diagnosis of urinary bladder pheochromocytoma. In addition there was a cystic lesion in the pancreas with no abnormal MIBG concentration. Cystoscopic biopsy of the lesion showed, polygonal to spindle-shaped chromaffin cells, also called chief cells, clustered with the sustentacular cells into small nests or alveoli (zellballen) by a rich vascular network. The cytoplasm on silver stain has a finely granular appearance, suggesting the appearance of granules containing catecholamines.

Urinary bladder pheochromocytoma is a rare primary urinary bladder tumour. It constitutes less than 0.05% of urinary bladder tumours and less than 1% of all pheochromocytomas. There is no sex predilection, and the mean age of incidence was fourth decade. The common presenting

features are episodes of sweating, hypertension, haematuria and postmicturition syncope. Our patient lacked these clinical features as he underwent bilateral nephrectomy. It arises from paraganglionic cells within the bladder wall usually in the region of the trigone and is typically a distinct, well-circumscribed submucosal or intramural lesion.

Clinical hallmarks of VHL disease include the development of retinal and central nervous system (CNS) hemangioblastomas (blood vessel tumors), pheochromocytomas, multiple cysts in the pancreas and kidneys, and an increased risk for malignant transformation of renal cysts into renal cell carcinoma. There was only one published report of pheochromocytoma of urinary bladder in association with VHL disease. In recently published study of 106 patients of bladder pheocrmocytoma, no association with VHL disease was reported.

CKD & D18: Multicenter study of comparison of trend in nutritional status of elderly and non elderly on Hemodialysis

Swathi KS, Mary Magdalene Santa S, JasmeetKaurArora, SaloniGup, Gayathri Devi RG, Geetha S, NakshaJaganathAnchanTanmayPandya, AvinashIgantius, TopotiMukerjeee, AbhaySadre, AbhayHupraikar, Suresh Sankar, Davita Care India, Madras, email: suresh150902@gmail.com

Aim: 1.To study the nutritional status of elderly and non-elderly on Hemodialysis at initiation

2. To compare the trend in nutritional status after 1½ on HD

Method: 6 dialysis centers in Chennai, Bengaluru, Pune and Delhi were included in the study. Patient demographics, dialysis practice, and nutritional assessment done with assessment of diet intake, by 24 hour diet recall (caloric intake and protein intake) BMI, triceps skin fold thickness, mid arm circumference were done. In addition Hb, dialysis adequacy, S Alb, S Ca& S. Ph were measured. The parameters were measured at baseline and 1 ½ years later. Data is expressed as mean &std deviation. Elderly and non-elderly were compared at baseline, and the mean change in each parameter were compared at 1½ years. P <0.05 was considered significant

Results: n= > 60 yrs: 54, ≤ 60yrs:106. Age: vs 45.8

Parameter	Elderly	Non elderly	P value
BMI (Kg/m2)	23.88 ±4.13	22.88±5.7	
TSF (mm)	21.54±9.91	21.73±9.76	0.91
MAMC (mm)	26.21±4.21	25.98±3.92	0.74
SGA	12.04±3.12	12.47±2.93	0.41
Protein intake(g/KG)	0.93±0.18	0.93±0.17	0.98
Intake (cal/kg)	29.31±5.77	29.49±8.20	0.88
StdKt/v	1.76±0.47	1.70±0.46	0.56

Hb (g%)	9.67±1.74	9.34±1.68	0.28
Ca (mg%)	8.49±1.19	8.39±0.92	0.62
Ph (mg%)	5.18±2.05	5.59±1.60	0.2
Albumin (g%)	3.69±0.37	3.73±0.51	0.59
K (mEq/L)	5.34±0.98	5.43±0.92	0.63

Parameter Difference between v1-v2	Elderly	Non elderly	Mean diff	P value
BMI	0.84	0.8	0.04	0.94
TSF	3.25	1.06	2.19	0.05
MAMC	0.62	0.11	0.51	0.20
SGA	-0.91	-1.05	0.13	0.81
Protein intake	0.04	0.07	-0.03	0.33
Caloric intake	-2.62	-1.54	-1.08	0.44
StdKtv	0.26	0.21	0.05	0.605
Hb	0.29	0.29	0.00	0.995
Ca	-0.2	-0.37	0.17	0.508
Ph	-0.06	0.29	-0.35	0.423
Alb	-0.04	-0.01	-0.03	0.81
K	-0.18	-0.31	0.14	0.492

CKD & D19: Ocular Changes In Chronic Kidney Disease

Rosu George Mathew, Georgi Abraham, Hannah RanjeePrasanth,Pondicherry Institute of Medical Sciences and Research Centreemail: rosugm111@yahoo.com

Aim: The aim of this study is to determine the ocular changes in patients with chronic kidney disease and to describe the findings.

Materials and methods: Type of study:Observational ; Hospital Based Cross-Sectional Study; Sample size:200 patients with chronic kidney disease; Sampling method:Simple random sampling; Study period: October 2013 to April 2015; Inclusion criteria: Patient diagnosed to have chronic kidney disease with age more than 18 years; Exclusion criteria: Critically ill patients Procedure: All patients diagnosed with chronic kidney disease attending Nephrology OPD and Ophthalmology OPD during the study period from October 2013 to April 2015 were enrolled in the study after obtaining a written informed consent.200 patients were screened. Patients were examined thoroughly for visual acuity using Snellen's chart for distance vision, intraocular pressure measurement by applanationtonometer.Dilated fundus examination by direct and indirect ophthalmoscope was done . Fundus photographs were taken using Canon fundus camera.Investigations required in this study were: hemoglobin, serum urea, serum creatinine, serum calcium, serum phosphate, urine routine microscopy, HbA1C,random blood sugar, fasting blood sugar and postprandial blood sugar.

Observations/results: Severity of kidney disease was classified into five stages based on the GFR . Most of the participants were of Stage 5 CKD (52.5%). Most of them had a best corrected visual acuity between 6/6 to 6/18 snellens equivalent (60%).There were more number of males (74.5%) in the study compared to females(25.5%).Most of the participants were in the age group between 40-59 (50%).The proportion of ocular changes in both anterior and posterior segment was 39%.Proportion of patients with anterior segment findings alone was 72% and posterior segment findings alone was 59%. Anterior segment findings: Majority of the patients had cataract as the anterior segment finding with prevalence of 64%. Posterior segment findings :Majority of the patients had hypertensive retinopathy as the posterior segment finding with prevalence of 39%. Most of the patients ie, 34 among 78 hypertensiveshad grade 1 hypertensive retinopathy(44.1%). Posterior segment findings had significant association with the stage of CKD at P value of 0.02.

Conclusion: This study has shown an increased proportion of ocular changes in chronic kidney disease patients. It re emphasises the need for regular ocular examination for all the CKD patients. It can help in early detection and prevention of visual disability. In this study the major cause of visual disability was cataract. The major risk factors for kidney disease are diabetes and hypertension. Majority of the patients in this study had hypertensive retinopathy. These patients are prone for developing retinopathy as the duration of disease progresses. So a proper screening is required for early detection. Also regular follow ups are essential for CKD patients who have developed retinopathy, for monitoring the progression if present and for active intervention when required. This will ensure a better quality of life for CKD patients

CKD & D20: Are Target Serum Bicarbonate Levels Achieved In Maintenance Hemodialysis Patients: A Single Centre Experience

Geo Philip John, Jacob George, Mohandas M K, Sajeev Kumar, Noble Gracious, Vineetha, Department of Nephrology, Government Medical College, Thiruvananthapuram, Kerala, email: drgeophilipjohn@gmail.com

Background: Majority of the maintenance hemodialysis patients do not achieve the target predialysis serum bicarbonate levels. Routine monitoring of serum bicarbonate in diaysis patients is not universally done.

Aim: We aimed to assess whether our dialysis population attained the predialysis serum bicarbonate target of >22 mEq/L as recommended by the NKF-KDOQI. Correlation between predialysis bicarbonate and clinical & biochemical parameters was also assessed.

Materials and Methods: Fifty patients undergoing maintenance hemodialysis in Government Medical College, Thiruvananthapuram were included in the study. All patients received fixed non-individualized dialysate bicarbonate concentrations.

Results: The mean predialysis bicarbonate obtained was 19 ± 4.2 mEq/L. Thirty six patients(72%) had bicarbonate levels <22 mEq/L. Nineteen patients (38%) had bicarbonate level <17mEq/L and 5 patients (10%) had level >25 mEq/L. Majority of the patients failed to achieve the target serum bicarbonate. A negative correlation was obtained for predialysis bicarbonate levels with BMI, total protein, serum uric acid, serum phosphorus and serum ferritin. Better nutritional status may be associated with reduction in bicarbonate level because of increased acid generation.

Conclusion: This study emphasizes the importance of regular monitoring of serum bicarbonate levels in our dialysis patients and the need for adjusting the dialysate bicarbonate concentrations accordingly.

CKD & D 21: Changes in Cardiovascular Risk Factors with Progression of Chronic Kidney Disease.

Sandeep P, Harini Devi N, Ram R, SrinivasaRao PVLN , Sivakumar V, Sri Venkateswara Institute of Medical Sciences, Tirupati, AP, email: drpeddisandeep@yahoo.com

Background: Cardiovascular morbidity and mortality are well known complications of End stage renal disease (ESRD). The increased cardiovascular disease is evident even with mild renal dysfunction and increases with CKD progression. Higher prevalence of traditional and non-traditional CVD risk factors resulting in accelerated atherosclerosis thereby leading to increased prevalence of CVD among Patients with CKD compared with individuals having normal renal function have been identified. Hence the present study is taken up to evaluate the changes in both traditional (age, gender, HTN, diabetes, smoking, dyslipidaemia) and non-traditional (hs-C-RP, Homocysteine, fibrinogen, Lp(a), MDA) risk factors in adult Patients with different stages of CKD.

Material and Methods: This case-control prospective study included four groups, each group consisting of 25 subjects. Among the four groups, three groups were divided based on stages of CKD (group 1: CKD stage 1 and 2, group II: CKD stage 3 and 4, group III CKD stage 5: n= 25 each). All the parameters were analysed on clinical chemistry Auto analyser DXC 600 Synchron Beckman Coulter, Ireland. Plasma MDA was estimated using spectrophotometric method using Perkin- Elmer spectrophotometer.

Results: The results showed that levels of hs-CRP and fibrinogen, plasma homocysteine , Serum uric acid levels, Serum phosphorus levels, Lp (a) levels ,Serum MDA levels were increased in all the three groups of CKD as compared to control group ($p<0.001$). Serum total cholesterol, triglycerides, LDL, VLDL and HDL levels were decreased with progression of CKD compared to control group in contrast to expected dyslipidaemia with CKD.

Conclusion: The inflammatory markers such as hsCRP and fibrinogen increased from early stages of the disease progression. The oxidative stress marker MDA also increased in the early stage of the disease itself. The serum Homocysteine levels were high in the chronic kidney disease patients and the levels increased as disease progressed. The serum lipoprotein(a) levels increased in the early stage of CKD and may add to the atherogenic lipid profiles of CKD. Cardiovascular risk factors and kidney function may change concurrently. This could lead to an increased risk of cardiovascular disease as kidney function worsens.