POS-810

SECONDARY HYPERPARATHYROIDISM: A CARDIOVASCULAR RISK FACTOR FOR KIDNEY DISEASE

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Introduction: Cardiovascular disease is the leading cause of death and accounts for the majority of morbidity in chronic hemodialysis patients. In addition, hyperparathyroidism is a common complication in these patients and may be responsible in the long term for impaired heart structure and function. The aim of our study was to evaluate the correlation between Hypertrophic cardiomyopathy and hyperparathyroidism in CKD.

Methods: This retrospective comparative cohort study enrolled 32 patients (17 male and 15 female with a sex ratio= 1.13) who were started on hemodialysis. Data collected included demographics, Clinical Status and metabolic parameters.Patients are divided into two groups. The first group contains the patients with hypertophic cardiomyopathy and the second group without it.All the patients included in this study gave their consent. Data were entered and analysed using SPSS software. Chi-squared test with a level of significance of 0.05 was used for the qualitative variables.Hyperparathyroidism is defined by a rate greater than nine times the upper limit.

Results: The mean age was 50 years old with age ranging between 23 years and 80 years.The mean duration of dialysis was 7 years (range: 6 months to 33 years). The average number of hemodialysis sessions per week was 2 sessions and the session length was three hours and a half. Sixteen patients (50%) had hypertension, 9 patients (28.1%) had diabetes mellitus. The initial nephropathy was diabetic nephropathy, vascular nephropathy, glomerular nephropathy, interstitial nephropathy and indeterminate nephropathy in respectively 15.6%, 25%, 9.3% and 21.8% of cases. During this years of follow-up,2patients (6.25%) died. The cause of death was arrhythmia and septic shock. The average level of Parathyroid hormone (PTH) was 875 Pg/ml; range 469 Pg/ml to 469 Pg/ml. Hyperphosphatemia and hypocalcemia were noted in respectively 25% and 37.5% of cases.The mean of calcium and phosphorus 2.06mmol / L and 1.66mmol / L, respectively. Three patients had surgical parathyroidectomy. All this patients have associaeted hypertrophic cardiomyopathy.The average left ventricular ejection fraction was 60.9%. Hypertrophic cardiomyopathy was noted in 19 patients (39.5%). Seventeen (89.47%) of them have hyperparathyroidism.A significant inverse correlation between serum PTH and the percentage of LV ejection fraction was observed (P= 0.001). A significant correlation of serum PTH with LVH was also found (P= 0.04).

Conclusions: Secondary hyperparathyroidism is common in advanced CKD, and first-line medical therapy includes the use of vitamin D agents and calcimimetics. Some patients need parathyroidectomy for medically refractory. Prevention of LVH requires the early detection and correction of specific and non-Cardiovascular risk factors.

No conflict of interest

POS-811

IMPACT OF CORONAVIRUS INFECTION ON THE COURSE OF CHRONIC KIDNEY DISEASE

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Introduction: The most common causes of chronic kidney disease (CKD) are diabetic nephropathy, hypertensive nephrosclerosis, glomerulopathies and metabolic syndrome. Diabetes mellitus and obesity are considered the key risk factors associated with severe form of COVID-19. Considering that there are common predisposing factors for these diseases there appears a need for clinical studies to assess the nature and evolution of coronavirus infection in patients with CKD. Objectives: to study the main changes observed in CKD patients with COVID-19, to identify correlations between clinical and paraclinical parameters.

Methods: There was carried out a retrospective analysis of 50 clinical records for the period from April to September 2020. In most cases (78.0%) the diagnosis of COVID-19 was confirmed by serological polymerase chain reaction (PCR). The average age of the patients was 57.3±16.32 years. Patients were divided into groups depending on age, type of concomitant diseases, stage of CKD and other parameters. The

analysis of the main risk factors for the occurrence of severe forms of COVID-19 infection was carried out, and the Pearson correlation coefficient was calculated. The significance of the correlation coefficient was assessed using the Student's t-test.

Results: Among patients suffered from both CKD and coronavirus infection there were: 58% of men, 42% of women. 18% were 18-40 years old patients, 34% - 41-60, 38%-from 61 till 80, 10% - over 80. Patients were hospitalized for 7 to 79 days (average 22.48 days). 78% had hyperthermia on entering the hospital. 82% of patients were tested at the beginning of hospitalization by PCR analysis of nasopharyngeal and oropharyngeal smears. 95.12% of them (78% of the total number) gave a positive result. 31 patient was tested for IgM, IgG to COVID-19. 26 people (83.87%) at the time of the onset of the disease were carriers of Ig M. 90% of patients suffered from arterial hypertension, 12% - from various degrees of fat metabolism disorders. 14% of patients suffered from diabetes type 2, 4% – diabetes type 1. Anosmia was noted in 72%. 66% of patients were on RRT. 74% had the terminal stage of CKD. The average CRP at the beginning of illness was 62.27, and in the end - 47.15. The mortality rate during the research was 14%. The correlation of the age curve with the pneumonia development was r=0.31, where p=0 (p≤0.001). The correlation between mortality and the fact that patients were taking immunosuppressive drugs was r=0.50, p=0.5 (p>0.05). Correlation of GFR changes in patients with C1-C4 CKD during the period of coronavirus infection and after recovery was r=0.96, p=0.19.

Conclusions: The sensitivity of the PCR test for COVID-19 was 95.12%, of the test for the presence of IgM-83.87%. GFR in patients infected with COVID-19 improved after their recovery, but this correlation, despite its strength, was not statistically significant. In 4 of 7 deaths, patients took immunosuppressive therapy (due to the presence of a renal transplant). There was found a moderate correlation between this type of therapy and the fact of death, but this connection was also statistically insignificant. In 4 of 7 deaths, patients were on RRT. Additional symptoms: anosmia, rash, diabetes decompensation, diarrhea (10%), vomiting, dyspepsia. A statistically significant moderate positive correlation was found between the development of pneumonia and the age of the patients.

No conflict of interest

POS-812

PLASMA OXALIC ACID AS A SIGNIFICANT RISK FACTOR FOR CARDIOVASCULAR DISEASE IN END-STAGE RENAL DISEASE PATIENTS

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Introduction: Cardiovascular disease (CVD) has consistently remained the leading cause of morbidity and mortality in end-stage renal disease (ESRD) patients. Although hyperoxalemia is a well-known feature in ESRD patients, the clinical data on association between plasma oxalic acid (POx) concentration and cardiovascular outcomes in the dialysis population has never been analyzed before. It was hypothesized that oxalate might be strongly involved in atherogenesis and the inflammatory pathway that could result in an increased risk of CVD in ESRD patients.Therefore, this study aimed to evaluate the potential role of elevated POx concentration in the development of cardiovascular risk in ESRD patients.

Methods: A total of 50 ESRD patients were enrolled in this prospective, observational cohort pilot study. After the POx examination, 29 hemodialysis patients and 21 peritoneal dialysis patients aged over 18 years were observed for cardiovascular disease (CVD) events for 2 years. All participants underwent their routine prescribed dialysis treatment. The average duration of dialysis therapy at study entry was 30 (20-78) months. POx concentration was measured spectrophotometrically using a commercially available kit (MAK315, Sigma, Spain). CVD events were defined as the newly diagnosed angina, myocardial infarction, stroke, heart failure or peripheral artery diseases requiring hospitalization. The data presented as the median and the interquartile ranges [Me (Q25-Q75)]. The receiver operating characteristic (ROC) analysis was performed to determine the optimal cut-off point of POx concentration for predicting CV events and the Cox regression analysis was used to adjust for the confounding effects of numerous factors associated with CVD.

Results: A total of 8 (16%) ESRD patients experienced a CVD event during the 2-year follow-up period. Among them, there were 7 (14 %) patients who had a non-fatal CV event and 1 (2 %) patient died due to a stroke. Non-fatal CV events included the newly diagnosed angina (3

cases, 42.8 %), heart failure (2 cases, 28.6 %), acute coronary syndrome (1 case, 14.3 %) and 1 case of cardiac arrhythmia (14.3 %). POx concentration was significantly higher in the patients with CVD events compared with those without CVD events: 32.6 (25.5-50.7) vs 51.1 (45.6-77.5) µmol/L, p = 0.007. The ROC analysis found that the most appropriate cut-off point for POx concentration as a predictor for CV events in the dialysis patients was 62.9 µmol/L with sensitivity of 75 % and specificity of 88.1 %. The area under the ROC curve was 0.80 (95% CI 0.86-0.90), p < 0.0001. In the Cox proportional hazard regression analysis POx remained a significant risk factor for CVD events in the ESRD patients independently of the effects of other potential confounding factors (Table 1).

Table 1. Association between POx concentration and CVD events in the ESRD patients.

Variable	Value	SD	Wald χ^2	p-values	HR (95% CI)
Unadjusted	0.028	0.012	5.808	0.016	1.03 (1.005; 1.05)
Model 1	0.074	0.023	10.732	0.001	1.1 (1.46; 1.15)
Model 2	0.131	0.037	12.642	<0.0001	1.14 (1.07; 1.22)

Abbreviations: CI, confidence interval; HR, hazard ratio; SD, standard error. Model 1 was adjusted for age, gender and dialysis modality. Model 2 was additionally adjusted for CVD risk factors, including diabetic status, systolic blood pressure, body mass index, serum uric acid, hemoglobin and triglycerides.

Conclusions: POx concentration ≥62.9 µmol/L was significantly associated with endured CVD events independently of other CVD risk factors and could be considered as a useful marker for predicting CVD events in dialysis patients.

No conflict of interest

POS-813

ERECTILE DYSFUNCTION AND END-STAGE KIDNEY DISEASE; SINGLE CENTRE EXPERIENCE IN AN IRISH HOSPITAL

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Introduction: Erectile dysfunction (ED) is common amongst men with end-stage kidney disease (ESKD). The stated prevalence of 21-43% appears not to have changed appreciably in almost 50 years. Despite its prevalence, it is a topic rarely discussed in nephrology clinics.
Methods: Using a validated Sexual Health Inventory for Men (SHIM) questionnaire, we aimed to ascertain the prevalence of ED in men with ESKD attending the nephrology service at St Vincent's University Hospital (SVUH). This data was compared with published prevalence rates internationally and will be used to develop a pathway that facilitates earlier recognition and treatment of ED in this patient cohort. A validated cross-sectional questionnaire, SHIM was distributed to 48 men attending the nephrology service at SVUH over a 2 month period in mid-2020. The group consisted of 34 haemodialysis (HD) patients, 1 peritoneal dialysis (PD) patient and 13 transplant (Tx) patients. The SHIM questionnaire was initially validated in the International Journal of Impotence Research in 1999 by Rosen et al. to diagnose presence and severity of erectile dysfunction. Since then it has been widely use in both clinical and research setting. A 5-year review of SHIM in 2005 by Cappelleri and Rosen showed that it is widely used in the end-stage kidney disease cohort. It consists of 5 questions score 0-5 or 1-5 with a summative score ranging between 1-25 to assess sexual function over the last 6 months. ED is classified into five; no ED (SHIM total score, 22–25), mild (17–21), mild to moderate (12–16), moderate (8–11), and severe ED (1–7).
Results: 43/48 (89%) of men approached to partake in the survey consented to do so, with just 23 (53%), including their name on the questionnaire. 25/29 (86.2%) HD patients completed the questionnaire in full, as did the only PD patient (100%) and 11/13 (84.6%) Tx patients. The mode age group was 55-64 for HD patients, 2 modes 35-44 and 55-64 for Tx patients, and 45-54 for PD patient. Amongst HD patients, 17/25 (68%) reported severe ED with just 1/25 (4%) having no ED. Amongst those with severe ED, 4/17 (23.5%) has a fistula. The PD patient reported no ED. In the Tx group, 2/11 (18.2%) reported severe ED, while 4/11 (36.4%) had no ED. 10 /25 (40%) HD patients and 3/11

(27.3%) Tx patients indicated that they would like to speak to a doctor in regards to their ED.
Conclusions: Though the numbers in this study are small, it is clear that ED is very common in men attending our HD centre. The prevalence amongst men with a functioning kidney transplant is significantly lower (p = 0.004) compared with the HD cohort, though still higher than aged matched controls. Although the results are in keeping with published data, the numbers of patients who stated they wished to speak to a doctor about management of ED reflects a significant unmet need. Information leaflets on ED are now available in the dialysis centre and in transplant clinics, and staff have been educated about early detection and treatment options for ED. We hope to design our own questionnaire to include these for improved data collection by including comorbidities, current and previous use of agents to treat ED. The impact of this intervention will be assessed via audit, and broadened to include men with chronic kidney disease.

No conflict of interest

POS-814

INTRADIALYTIC RELATIVE BLOOD VOLUME MONITORING IN HEART FAILURE PATIENTS: RETROSPECTIVE DATA ANALYSIS

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Introduction: Volume management related complications are common during hemodialysis (HD). There is a narrow window between avoiding complications and obtaining a euvolemic individual, who is at their dry weight.Relative Blood Volume (RBV) monitoring via Crit-Line utilizes photo optical technology to non-invasively measure absolute hematocrit to help determine the optimal dry weight in real time. Use of the Crit-Line can be repeated with every dialysis treatment at no extra cost. With Crit-line, dry weight can be assessed at each dialysis treatment. Changes in RPV of <-3%/hr is classified as Profile A (volume overloaded), >-3% <-6.5%/hr is Profile B (the best compromise between a high ultrafiltration rate and the prevention of intradialytic symptoms) and >-6.5%/hr is Profile C (risk of volume depletion related symptoms). Heart failure (HF) is common among dialysis patients and predicts early mortality. These patients are difficult to manage and have repeated admission with fluid overload.
Methods: In this retrospective cohort study of inpatient ESRD patients, we compared outcomes in HF patients vs patients with no evidence of heart failure.All patients used the intradialytic blood volume monitoring device, Crit-Line. Outcomes of interest included: fluid removal, attaining dry weight, Intradialytic hypotension, hospital readmissions and mortality. Patient characteristics and outcomes were compared across HF vs non-HF patients using Chi-squared tests for categorical variables and using two-sample t-tests for numerical variables, which were all normally distributed. With our study sample size, our two-sample t-tests were adequately powered to detect medium to large effect sizes (Cohen's d =0.61) and our Chi-squared tests were adequately powered to detect medium to large effect sizes (Cohen's w=0.30 to 0.35)
Results: 87 patients met inclusion criteria, of whom 49 (56%) were HF patients (had EF <=50 or a CHF diagnosis) and 38 (44%) were not. Using the Crit-Line Monitor, a higher percentage of HF patients were able to attain the expected dry weight at the end of the hospital encounter (60% vs 46%, p=0.36). The incidence of IDH during the first and last dialysis session of the hospital encounter was not significantly different between groups, although it was slightly higher for HF patients. (Table 1)Using the RBV Monitoring, a higher total fluid removal was achieved for HF patients as compared to non-HF patients (p=0.02) The readmission rate was similar in both groups. Although not statistically significant, 30 and 90 day mortality was higher in HF patients.

	First Dialysis Session			Last Dialysis Session		
	HF Patients (N=49)	Non-HF Patients (N=38)	P-value[1]	HF Patients (N=49)	Non-HF Patients (N=38)	P-value[1]
Intradialytic Hypotension during dialysis[2]	33% (16/49)	24% (9/38)	0.50	41% (20/49)	24% (9/38)	0.15
Average Total fluid removed during dialysis (SD) Min, Max	2731 (1125) 832, 5200	2613 (1147) 750, 5600	0.63	2949 (979) 1180, 5700	2449 (992) 386, 5020	0.02

[1]P-value from chi-squared tests for Intradialytic Hypotension, and is from two-sample t-test for Total Fluid Removed
[2]Patients with systolic blood pressure recorded as <100 during dialysis are classified as having IDH