Free Communication

FC-01 Urinary fetuin-a peptides correlate with glomerular filtration rate

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Introduction. The hepatokine fetuin-A, which is released by fatty liver, promotes the proinflammatory effects of perivascular fat. The involvement of inflammation in type-2 diabetes can affect the kidney and cause diabetic nephropathy. Therefore, we examined the association of urinary fetuin-A protein fragments with renal damage in diabetes type-2 patients.

Methods. The urinary proteome of 1494 diabetes type-2 patients was analysed by capillary-electrophoresis coupled to mass-spectrometry, to investigate the correlation of fetuin-A peptides with the estimated glomerular filtration rate (eGFR) to assess the severity of kidney damage. The correlation coefficient was estimated with non-parametric Spearman's rank correlation analysis.

Results. We identified 11 different protein fragments, which belong to 2 different motifs of the total fetuin-A protein [motif A: amino acid (AA) 302-319; motif B: AA 322-340]. The corresponding peptides of each motif were combined (sum of amplitudes) and correlated to eGFR. Both fetuin-A motifs displayed significant correlations with eGFR (A: rho=-0.207, p=0.0037; B: rho=-0.243, p<0.0001). To investigate that urinary fetuin-A does not reflect proteinuria, we also used multiple regression analysis with adjustment for urinary albumin. This regression, as well as the adjustment for age and gender resulted in significant correlation of the fetuin-A peptides with eGFR.

Conclusion. The urinary proteome analysis demonstrated the association of fetuin-A peptides with kidney damage in diabetes type-2 patients. Therefore, fetuin-A peptides could be markers for early inflammatory processes in the kidney as a result of diabetes type-2 and therefore a possible new marker for kidney dysfunction.

FC-02 Comorbidity and age as prognostic factors for the short and long-term outcome in elderly with acute kidney injury

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Introduction. Acute kidney injury (AKI) is a complex syndrome characterized by abnormal loss of renal function that leads to the increase of nitrogen compounds, dysregulation of extracellular volume and electrolyte homeostasis. The structural and functional changes that occur during the aging process, also and coexisting diseases, are disposing factors that increase the risk of AKI in elderly population.

Methods. We prospectively studied 101 patients with an AKI age of 65 years. Patients were divided into 2 groups by age, group <75 and group> 75 years old. In terms of outcome they were divided in group with short and 90-day survival. The burden of the simultaneous presence of comorbid conditions was estimated through the Charles Comorbid Index. (CHI)

Results. The intra-hospital mortality rate in adult patients with AKI was 22.8%. The mortality rate for the 90-day follow-up period after the AKI event was 45.5%. Age was not confirmed as a risk factor for intra-hospital and 3-month outcome in patients with AKI in our study. The presence of comorbid conditions estimated through the Charles Comorbid Index (CHI), differed insignificantly between surviving and deceased patients with AKI (p=0.39, p=0.28 consecutive). But Cox regression analysis confirmed the CCI score as a significant factor in survival in patients with ABO (p=0.036). The risk of fatal outcome increases by 16.3% with each increase in this unit score. Cox regression analysis confirmed heart diseases as a significant prognostic factor for survival, increasing the risk of fatal outcome by about 2 times higher than patients without heart disease. Statistical analysis showed a significant difference in survival time, depending on the presence of heart disease as a comorbidity (p=0.037). Cox regression analysis also showed that HR for heart disease, as a comorbidity is 1.837 (95% CI: 1.020-3.306) and p=0.043. The death rate for patients with heart disease is about 2 times higher than patients without heart disease. Cumulative survival was higher in the group of patients without cardiomyopathy-64.2% (0.07) compared to the group of patients with cardiomyopathy-43.8% (0.07).

Conclusion. CCI score is significant independent high-risk prognostic factors for poor outcome in elderly patients with AKI. AKI survivors with high burden of comorbidities are at high risk for post-discharge death. Cardiomyopathy, as a risk factor, for two times increases the risk of death. Recommendation for individual clinical approach, assessment and selection for treatment application still remains, taking into account the overall condition in adult patients with acute renal injury.

FC-03 Connection between biomarkers of inflammation and oxidative stress and cardiovascular diseases in patients with chronic kidney disease

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Introduction. An increasing number of biomarkers are being tested for evaluation of cardiovascular (CV) risk in patients with chronic kidney disease (CKD).
The aim of this study was to investigate the association between biomarkers of inflammation (Interleukin 18-IL-18; Ischemia modified albumin-IMA) and oxidative stress (Superoxide dismutase-SOD) with newly occurred cardiovascular events (CVE) in patients with CKD stages 3-5HD.
Methods. Our prospective study included 87 patients, who were grouped into four groups: CKD stage 3a, 3b, 4 and 5HD. During 18 months of follow-up, the following events were reported: myocardial infarction, worsening of the existing and newly occurred angina pectoris, cerebrovascular insult, peripheral arterial disease and cardiac death. The values of SOD, IMA and IL-18 were measured in the patients' serum.
Results. The highest number of CVE were registered in group of dialysis patients (45.9%). In patients with registered CVE, significantly lower values of hemoglobin (p=0.005) and albumin (p=0.011), as well as higher values of troponin (p=0.018) were observed compering with patients without CVE. For each unit of the increase in albumin, the likelihood of CVE declines by 15.2%. Connection of the tested biomarkers with newly occurred CVE was not observed.
Conclusion. The association of examined biomarkers with the occurrence of CVE events in CKD patients has not been established, but this should be confirmed on a larger number of patients and during a longer follow-up period.

FC-04 The role of vitamin D supplementation on iFGF-23 and PTH in hemodialysis patients-interactions between vitamin D, iFGF23 and PTH

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Introduction. Fibroblast growth factor-23 (FGF-23) is a major regulator of calcium and phosphate homeostasis. Together with calcitriol and parathyroid hormone (PTH), it is part of a complex multi-tissue feedback system. Both 1, 25 $(OH)_2 D_3$ and PTH induce skeletal FGF-23 production. This interaction becomes more complicated in hemodialysis patients.
Aim. We studied the effects of vitamin D supplementation on serum iFGF-23 and PTH in dialysis patients.
Methods. This was an interventional clinical trial on 51 ESRD patients (36 males, mean age 60.9±15.2 years) who received HD for a mean period of 48.08±40.7 months. 1,25 $(OH)_2 D_3$ serum levels were recorded for all patients before and after a six-month period of alfacalcidol supplementation. Monthly data, including intact PTH, were collected. The levels of intact-FGF-23 were measured before and after vitamin D administration with Diasorrin Liaison assay. Patients with acute inflammation, malignancies, hemorrhage diathesis and uncontrolled hyperparathyroidism were excluded. The management of serum calcium and phosphate, became accordingly with the official guidelines. The patients didn't receive any calcimimetic drugs.
Results. Mean baseline 1,25 $(OH)_2D_3$ serum levels was 12.5±5.2 ng/ml and increased to 20.32±27.8 ng/ml ($p<0.01$) after alfacalcidol supplementation. The levels of PTH were reduced significantly (353.9±236 to 262.6±169pg/ml, p=0.03). iFGF23 levels increased significantly after six months vitamin D administration from: 1840,8±1981,6 to 4684,8±3123,7pg/ml, $p<0,0001$. Regardless of vitamin D administration, iFGF-23 had a negative correlation with PTH (r1=-0,10 and r2=-0,069) and 1,25$(OH)_2 D_3$ (r1=-0,043 and r2=-0,10) before and after vitamin D supplementation, but not significantly.
Conclusion. Vitamin D supplementation in ESRD dialysis patients, induced significant increased levels of intact FGF-23 and decreased levels of PTH. iFGF-23 has been shown to have a negative correlation with PTH and 1,25$(OH)_2 D_3$.

FC-05 Renal biopsy in the elderly: data from 15 years of experience

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Introduction. The incidence of renal disease increases with age. However, data on histological evidence of renal injury in elderly patients are limited.
Aim: To examine renal biopsy indications and histological diagnoses in elderly patients over 70 years of age.
Methods. This is a retrospective study of native kidney biopsies performed between 2000 and 2015 in patients over 70 years old. Patient demographics, co-morbidity factors, clinical indications and histological diagnosis of biopsies were recorded.
Results. From 2000 to 2015, 1137 natural kidney biopsies were performed in our center. Of these, 98 biop-

sies (8.62%) corresponded to 96 patients with an average age of 76 years. Fifty-seven were men and 39 women. A history of arterial hypertension was recorded in 65 patients (67.70%) and diabetes mellitus in 16 (16.67%). The main indications were acute kidney injury (AKI) (56.12%), isolated proteinuria (17.34%), nephrotic syndrome (6.122%), AKI and nephrotic syndrome (4.08%). At the time of the biopsy, the median serum creatinine was 2.5 mg/dl (IR1.3-5.1) and the median proteinuria value was 2.7g/24h (IR1.5-6.525). Pauci-immune vasculitis was the most common histological diagnosis (18.36%), followed by membranous glomerulopathy (17.34%) and focal segmental glomerulosclerosis (10.20%). The number of glomeruli was insufficient in three biopsies, two of which were repeated. Macroscopic hematuria after the biopsy was recorded in 4 patients (4.16%).

Conclusion. Older age should not be considered as a contraindication for renal biopsy upon indications. It is a valuable diagnostic and prognostic tool that can guide treatment decision for patients over 70 years of age.

FC-06 A report of 12 cases with fibrillary glomerulonephritis from a single center

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Introduction. Fibrillary glomerulonephritis (FGN) is a rare glomerular disease found in less than 1% of native kidney biopsies. FGN is characterized by glomerular presence of randomly arranged fibrils measuring 12 to 25 nm by electron microscopy. FGN is usually idiopathic (primary), however, it has been associated with underlying infective, malignant or systemic autoimmune disease in some patients as well. Therapeutic strategies in primary FGN, particularly the use of immunosuppressive drugs, are not clearly defined. We aimed to investigate clinical characteristics and outcomes of patients diagnosed with FGN in our center.

Methods. We identified patients with FGN by retrospective review of all renal biopsies in the Department of Pathology, University Hospital Dubrava, from 2009 until 2018. Clinical and histologic features of patients and kidney disease outcomes were analyzed. For the purpose of outcome analysis, following definitions were used: complete remission (CR) was defined as reduction of proteinuria to <0.5 g/d with normal kidney function, partial remission (PR) was defined as reduction in proteinuria by >50% and to <2 g/d with stable kidney function (no more than a 20% increase in serum creatinine), end-stage renal disease (ESRD) was defined as decrease in eGFR (based on MDRD formula) under 15 ml/min/1.73m² or beginning of renal replacement therapy and persistent renal dysfunction (PRD) was defined as failure to meet criteria for CR and PR but not reaching ESRD.

Results. There were 12 patients with FGN, whose mean age at biopsy was 60.6 years and 10 of them were females. Presentation at the time of biopsy included proteinuria (in 10 patients), hematuria (9), reduced eGFR <60 ml/min/1.73m² (8), hypertension (10), pretibial oedema (4) and anemia (4). Primary FGN was found in 7 patients, 2 had autoimmune diseases (SLE and primary antiphospholipid syndrome) and 3 had monoclonal gamapathy of renal significance. Four patients were treated with renin-angiotensin-aldosterone system (RAAS) blockade alone, six (including 2 with autoimmune diseases) with combination of steroids and RAAS blockade and one patient was treated only with supportive therapy without progression of disease. In patients treated with combination of RAAS blockade and steroids, cyclophosphamide was added in three, cyclosporine in one and rituximab in two cases with favorable effect. One patient with secondary FGN was lost to follow-up. Of the remaining patients with primary FGN two reached ESRD, two entered sustained remission (one had CR and one had PR) and three patients had PRD. Of the patients with secondary FGN one entered CR and three had PRD.

Conclusion. According to clinical presentation and outcomes, FGN is a very heterogeneous glomerular disease. The therapeutic approach in FGN remains challenging. The use of immunosuppressive therapy needs to be assessed in larger prospective studies.

FC-07 Frailty and depression in hemodialysis patients

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Introduction. Frailty is a state of increased vulnerability to physical stressors, such as illness or trauma. Depression is the most widely prevalent psychological complication of hemodialysis (HD) patients. Depression and frailty symptoms partly overlap and both contribute to lower quality of life (QoL) of these patients.

The aim of the study was to evaluate the prevalence and relation between frailty and depression among our patients and its association with socio-demographical data.

Methods. We studied 281 patients, on HD more than 3 months. For examination of frailty, we applied The Fried Phenotype model of frailty tool that defines the frailty phenotype as meeting three or more of the five criteria: weight loss, exhaustion, weakness, slow walking speed and decreased physical activity. We classify patients as non-frail, pre-frail and frail. Depression symptoms were screened by Beck Depression Inventory (BDI).

Results. 44.8 % of participants were categorized as frail and 20.6% as pre-frail. 42.2% of our patients suffer

from some degree of depression, the most of them from mild depression. 88.9% of our depressed patients were frail. The correlation between depression and frailty was highly significant ($p<0.05$). Even correlations between BDI items and frailty were highly significant ($p<0.05$), except between BDI-9-suicidal thoughts and desire and frailty ($p>0.05$), that is related to religious beliefs of patients, where the suicidal thoughts are considered to be the greatest sin. As expected, the prevalence of frailty significantly increased with age and HD duration ($p<0.05$). Older adults are usually at higher risk for depression and dementia. Less educated and unemployed patients have shown significantly higher level of frailty in relation to highly educated and employed patients ($p<001$), who had better QoL in general.

Conclusion. Frailty and depression are obviously overlapping syndromes, both highly prevalent in our HD patients, particularly the older ones. A better understanding of these syndromes could result in a better efficiency of treating HD patients.

FC-08 Evaluation of hydration and nutritional status in patients receiving maintenance hemodialysis

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Introduction. Fluid overload and malnutrition are risk factors of morbidity and mortality in dialysis patients.

Aim: To compare the hydration and nutritional status of young and elderly patients under hemodialysis (HD) using bioimpedance (BIA) and anthropometric parameters.

Methods. This is an observational study involving clinically stable patients undergoing HD for more than three months. Clinical and laboratory data (hemoglobin, albumin, ferritin, C-reactive protein-CRP) were evaluated, anthropometric data (body mass index-BMI, arm circumference-MAC, mid-upper arm circumference-MUAC, triceps skin-fold-TSF, and hand grip strength-HGS) and the frailty status of patients using the Clinical Frailty Score. Three BIA readings were performed over a 9-week period and the degree of fluid overload (FO), intracellular and extracellular water (ICW and ECW respectively), total body water (TBW) and ECW/TBW ratio were recorded. BIA measurements were performed before the dialysis session in the middle of the week. Patients were divided into 2 groups according to their age: younger patients <65 years (n: 19) and elderly ≥65 (n: 15).

Results. The median time on HD in younger and elderly patients was 3.5 [IQR: 0.7-10.3] and 4 [IQR: 1.6-8] years, respectively. The mean systolic and diastolic blood pressure before the session was 117±21/73±16mmHg in the younger group and 122±29/67±13mmHg in the elderly. Hemoglobin, albumin and ferritin values did not differ significantly between the two patient groups. Elderly patients had a higher median CRP (6.7 [IQR: 3.1-11.2] vs. 4.9 [IQR: 3-11.1], p: NS). The mean HGS was lower in elderly patients than in the younger ones (13.7±10.3 versus 18.4±11.2 kg, p: NS). There was no difference between the two groups with respect to other anthropometric parameters. In the group of elderly and young patients, severely impaired were 33.3% (n: 5) and 10.5% (n: 2) of the patients respectively. The degree of FO did not differ significantly between the two groups. The median ECW/TBW in younger patients was 0.46 (0.44-0.49) versus 0.49 (0.46-0.50) in the elderly. The median FO deviation from patients' dry weight was -1.2 (-2.9/-1) versus -1.6 (-2.9/0.7).

Conclusion. There was no difference in the degree of fluid overload and nutrition between older and younger HD patients. The evaluation of body fluid status using bioimpedance seems to be a useful method complementary of the clinical assessment in dry weight determination.

FC-09 Impact of renal replacement theraphy on renal outcome in critically ill patients in the icu setting

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Aim. To study the impact of the two methods of renal replacement therapy (RRT), continuous and intermittent, on the renal outcome of acute renal failure (AKI).

Methods. This is a single-center retrospective, observational study of critically ill patients admitted in the ICU who developed AKI and were treated with RRT. APACHE II score, urine output, creatinine levels, potassium levels, presence of multiorgan failure and shock, severity of AKI, type of RRT and renal outcome were recorded (Table 1).

From January 1st until December 31st 2016, 263 patients were admitted to the ICU. Thirty- three patients (13%), 9 female and 24 male, with a mean age of 69±12 years, developed AKI and were treated with RRT.

Results. Patients were divided into three groups: 11 out of 33 patients (33%) were treated with intermittent dialysis (ID), 15 (45%) with continuous methods and 7 patients (22%) received both intermittent and continuous RRT. The mean APACHE II score at the time of admission to the ICU was 32±5. APACHE II score and potassium levels were similar between the groups. At the time of RRT initiation more patients in groups 2 and 3 were hemodynamically unstable, while the distribution of critically ill patients with multiorgan failure was similar between all three groups. According to the severity of AKI, failure was present in 4 out of 11 patients

in group 1(36%) versus 10 out of 15(66%) and 3 out of 7(42%) in groups 2 and 3 respectively. Renal recovery occurred in 9 out of 11 patients (82%) from group 1, in 2 out of 15 in group 2(13%) and 2 out of 7(22%) in group 3 (Table 2).

Conclusion. In the ICU setting ID is associated with higher rates of renal recovery, possibly verifying the better hemodynamic status of patients selected for this method.

Table 1. Patients characteristics on admission

On Admission			
	Group 1-ID	**Group 2-CVVHDF**	**Group 3-ID + CVVHDF**
Number of Patients	11	15	7
APACHE II score	33±5	32±5	29±5
Creatinine (mg/dl)	4±2	1.7±0.97	2.6±1.2
Shock	4/11	14/15	5/7
Multiorgan failure	10/11	13/15	4/7

Table 2. Patients characteristics at initiation of treatment *(Risk: R, Injury: I, Failure: F)*

Treatment Initiation			
	Group 1-ID	**Group 2-CVVHDF**	**Group 3-ID + CVVHDF**
Shock	4/11	15/15	6/7
Creatinine (mg/dl)	5.9±2	2.5±1.1	4.7±2.2
Potassium (mmol/L)	4.6±0.9	5.3±0.8	4.5±0.8
AKI - Risk	1/11	1/15	1/7
AKI - Injury	6/11	4/15	3/7
AKI - Failure	4/11	10/15	3/7
Renal recovery	9/11	2/15	2/7

FC 10 One year experience with etelcalcetide in hemodialysis patients

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Introduction. Secondary hyperparathyroidism (SHPT) is one of the most common complications in patients with chronic kidney disease. Prevention and treatment of SHPT is a great challenge for nephrologists. Etelcalcetide, new calcimimetic, is a very promising drug in the treatment of SHPT. In our first report etelcalcetide was effective without serious side effects in short term, i.e. up to 4 months.

Methods. We present results of long-term treatments with etecalcetide in three hemodialysis patients.

Results. In all three patients' initial dose of etelcalcetide was 5 mg i.v. after dialysis and dose was adjusted according to Ca level. All patients were taking stable doses of vitamin D analogs and phosphate binders; dialysate Ca concentration was 1.5 mmol/L. Parathormone (PTH) concentrations in the beginning were 98.2; 197 and 104.1 pmol/L. After 12 months, PTH concentrations were 31.9, 41 and 45.3 pmol/L. Apart from mild hypocalcaemia (Ca concentration 1.8 mmol/L), no serious side effects were observed.

Conclusion. Based on our first small experience, etelcalcetide is effective and safe in treatment of SHPT.

FC-11 Hemodiafiltration or hemodialysis-which is better? (intra-patient comparison)

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Introduction. For decades, end-stage renal disease (ESRD) patients had the chance only to undergo chronic intermittent hemodialysis (HD). But recently, successful efforts were made to improve the clearance of uremic toxins and decrease the high risk of morbidity and mortality. The development of online hemodiafiltration (OL-HDF) has resulted in markedly enhanced clearance of middle to large toxin's molecules better than high-flux HD. Few clinical studies pointed out the benefits of OL-HDF in patient's overall survival. Primary objective of our study was to show the superiority of OL-HDF compared to high-flux HD in ESRD patients on routine renal replacement treatment. Secondary objective was to identify which variables are showing improvements in OL-HDF compared to high-flux HD.

Methods. In this retrospective, single arm, comparative study, 31 HD patients were studied during 2 years' dialysis treatment as follows: 12 months on high-flux HD, then 12 months on OL-HDF. Study cohort's demographic, clinical and laboratory variables were collected for both treatment regimens. Further statistical analysis and intra-patient comparisons were made.

Results. Our study showed that switching from high-flux HD to OL-HDF treatment regimen improved several hemodialysis outcomes. In 74.2% of patients eKT/V was significantly improved (p=0.006); which was in line with the significant increase of blood flow. The levels of phosphorus were in reference values in 64.5% of the patients and decreased in 54.5% out of 35.5% significantly changed (p=0.009). The usage of anti-coagu-

lants was significantly decreased in 42% of patients (p=0.006), in 9.7% significantly increased and in the rest of the cohort there were not significant changes. Overall consumption of EPO in the study cohort was decreased, in 32.3% was significant (p=0.017), in 45.2% remained similar in the two regimens and in only 22.5% of patient its need was significantly increased.

Conclusion. This study showed that online hemodiafiltration is superior treatment regimen compared to high-flux HD in patients on chronic hemodialysis. Significant improvements were noticed in the most important HD treatment outcomes who will potentially result in improvement of quality of life. Further long-term analysis is needed to show the benefits in decreasing the risk of morbidity and mortality in OL-HDF patients.

FC-12 Bloodstream catheter related infection caused by staphylococcus aureus meticilin resistant (mrsa) in patients on chronic hemodialysis program

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Introduction. The incidence of invasive MRSA infection among patients (pts) undergoing chronic dialysis is >100 times higher than in the general population. Increased risk of MRSA infections in dialysis patients is related to repeated vascular access for hemodialysis patients through central venous catheters (CVCs).

Methods. Epidemiological and laboratory data were collected from all cases of MRSA bacteremia in pts on hemodialysis with CVC, from December 31st 2010 till December 31st 2017. Demographic data, comorbidities (diabetes), duration of CVC, duration of hospitalization and antibiotic therapy, function and complications were recorded.

Results. We identified 52 episodes of MRSA bacteremia from 46 patients (24 males, 22 females, aged 57 years). Thirty nine pts had temporary CVC, and 7 permanent CVC. More than a half of the patients had diabetes, and one third of the pts were on chronic hemodialysis program more than 3 years. There were no differences in age, gender or severity of bacteremia and comorbidities. Logistic regression analysis showed that the following variables; duration time of CVC, type of previous venous access, previous use of antimicrobials, and previous hospitalization related to BCRI. Previous hospitalization increased the chance of developing CRB, 6.6-fold (CI 95%: 1.9-23.09) All CVC were removed and new ones were inserted. Only one patient died, and two had complications (spondylodiscitis), all others were successfully cured. Vancomycin was most frequently administered antibiotic.

Conclusion. All MRSA catheter-related bacteremia were successfully resolved by changing CVC and appropriate antibiotic therapy. Therefore, prevention activities should focus on improving CVC maintenance. Infection prevention measures for bloodstream infections related to central venous catheter use should be intensified. Adherence to current infection prevention guidelines should be encouraged and reinforced to help sustain the decreasing trend of invasive MRSA infections.

FC–13 Disturbances of b lymphocyte subsets in pre-dialysis end stage renal disease patients

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Introduction. End-stage renal disease (ESRD) is associated with immunodeficiency, which makes a significant contribution to morbidity and mortality. The present study aimed at analysis of B lymphocyte subpopulations in a cohort of pre-dialysis ESRD patients.

Methods. B cells (CD19+) and their subsets innate B1a (SD19+ CD5+), naïve (CD19+ CD27-). Memory (CD19+ CD27+), CD19+ BAFF+ and CD19+ IgM+, as well as the expression of CD45, a regulator of T- and B-cell antigen receptor signaling on lymphocytes were quantified using flow cytometry in the peripheral blood of 21 pre-dialysis patients, and results were compared to age-matched healthy control group. Exclusion criteria were age <18 or >75 years, active autoimmune or chronic inflammatory disease, medical history of malignancy, corticosteroids or immunosuppressive treatment for the last 12 months. Furthermore, CRP, C3, C4, IgG, IgA, and IgM levels were also evaluated.

Results. Mean age of the patients (n=21, M/F 12/9) was 62.4±12.5 years. ESRD patients had reduced lymphocyte count (1579±711μ/L vs. 2276±482μ/L, p=0.005) compared to controls. Likewise, whereas the percentages of B cell subsets were not particularly affected, the absolute number of almost all subsets was significantly smaller in ESRD patients (CD19+: 81.3±60.4μ/L vs. 162.1±64.5μ/L, p=0.005; Naive:55.3±50.9μ/L vs. 97.3±46.3μ/L, p=0.043; Memory: 25.8±16.7μ/L vs. 64.8±40.2μ/L, p=0.001; CD19+BAFF+: 67.9±51.1μ/L vs. 136.8±80.1μ/L, p=0.007; CD19+IgM+: 59.1±47.6μ/L vs. 117.1±70.4μ/L, p=0.013; CD45+: 361.8±278μ/L vs. 812.1±361.1μ/L, p=0.002). The only exception was innate B1a cells which were increased in the ESRD group (percentile: 4.7±4% vs. 0.6±1%, p=0.006; count: 4.1±5.5μ/L vs. 1.1±1.5, p=0.027). Furthermore, IgG was elevated in this group (1259±406mg/dL vs. 842±350mg/dL, p=0.026), as well as CRP (7.86±12.96mg/dL vs. 0.28± 0.1mg/dL, p=0.02), while there was no statistically significant difference between C3, C4, IgA and IgM between the two groups.

Conclusion. Significant alterations were noticed in innate and adaptive immunity in patients with ESRD

on pre-dialysis stage, with a significant reduction of almost all subsets of B cells, and these changes may be implicated in clinical manifestations, such as increased incidence and severity of microbial infections, impaired response to vaccination and increased risk of virus associated cancers.

FC-14 Long-term impact of chronic therapy with sucroferric oxyhydroxide on iron and anemia markers in dialysis patients

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Introduction. Interventions to reduce hyperphosphatemia in chronic kidney disease involve medications with different ways of action. Sucroferric oxyhydroxide is a recently approved, iron-based phosphate binder, for which is not clarified yet whether it affects iron markers in dialysis patients. Purpose of this observational study was to evaluate the long-term effects of sucroferric oxyhydroxide to the above-mentioned markers.

Methods. A total of 110 patients from three dialysis units were included in the study; 49 were under chronic treatment with sucroferric oxyhydroxide in combination or not with other binders, while 61 were either receiving other phosphate binders or no treatment for hyperphosphatemia. Phosphorus, calcium, parathormone, ferritin and transferrin saturation were recorded, as well as hematologic parameters, both at the moment of recording and six months earlier. Moreover, dose of erythropoietin and intravenous iron were also recorded. In the first phase of the study, these parameters were compared between the two cohorts, while in the second phase the changes of the same parameters were evaluated in the cohort of sucroferric oxyhydroxide over a period of six months.

Results. Patients under treatment with sucroferric oxyhydroxide had similar levels of serum phosphate (4.57± 1.05 vs. 4.3±0.96mg/dl, p=NS) and parathormone (286±313 vs. 239±296pg/ml, p=NS) with the control group patients. Marginally higher but significant calcium levels and calcium-phosphate product were also found in the sucroferric oxyhydroxide group (9.18±0.58 vs. 8.9±0.51 mg/dl, p=0.008). No statistically significant differences were observed between the two groups, neither in iron markers, nor hematologic parameters. Additionally, no important changes were observed during a six-month treatment with sucroferric oxyhydroxide.

Conclusion. Treatment with sucroferric oxyhydroxide does not seem to result in iron accumulation in dialysis patients.