phospholipid levels in wt WD mice. Phospholipids were visualized using a Nile Red staining and co-localized with vacuolated tubuli. Oil Red O Staining showed increased numbers of granulus containing neutral lipids in proximal tubuli of wildtype Western diet-fed mice. Unexpectedly, no renal lipid accumulation occurred in Nlrp3ko mice fed a Western Diet. A Western diet induced cholesterol accumulation in wildtype mice despite decreased uptake, increased excretion and decreased synthesis based on gene expression analysis.

We propose a novel role for the immune receptor Nlrp3 in mediating renal cholesterol and phospholipid accumulation during the early development of Metsyn-driven CKD. Further research is conducted to investigate the therapeutic potential of Nlrp3 in early renal CKD development.

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HIGH BODY MASS INDEX (BMI) IS ASSOCIATED WITH ADIPOKINES AND INSULIN RESISTANCE IN NONDIALYSED CHRONIC KIDNEY DISEASE (CKD) PATIENTS

Maria Ines Barreto-Silva, Carla Avesani, Laura Kawakami, Renata Martucci, Rachel Bregman
Rio de Janeiro State University, Brazil

The aim of this study was to assess the association between body adiposity with adipokines and with insulin resistance in non-dialysed CKD patients. This is a cross-sectional study including CKD patients under regular treatment in an outpatient clinic. Glomerular filtration rate was estimated by MDRD equation (eGFR). The nutritional status was assessed by BMI, total body fat (BF; dual-energy X-ray absorptiometry), midarm muscle circumference and serum albumin. Laboratorial parameters included serum glucose, triglycerides; leptin and insulin (radioimmunoassay); high molecular weight adiponectin (HMWAdipo; ELISA). The insulin resistance was assessed by HOMA-IR. Data are expressed as mean $\pm$ SD. One hundred and thirty four CKD patients (male=56%; eGFR= 29 ± 13ml/min.; 65 ± 12 years old) were included. None of the patients presented protein energy wasting and most of them had BMI ≥ 25kg/m^2 (overweight/obese group: OwOb) (n= 72; 54%). BMI was correlated with BF (r= 0.74; $p < 0.0001$). Both BMI groups showed similar eGFR and CKD stages distribution (stage 3:42%, 4: 37%, 5: 21%), hence the comparisons were held between groups with normal and OwOb BMI. The OwOb group had BMI, BF, glucose, triglycerides, leptin and HOMA-IR higher than normal BMI group ($P < 0.05$), while HMWAdipo was lower in OwOb group ($P < 0.05$). BMI was significantly associated with leptin (r= 0.58); HOMA-IR (r= 0.36) and HMWAdipo (r= -0.45). HOMA-IR was associated with leptin (r= 0.28) and with HMWAdipo (r= -0.29) ($P < 0.01$), even after adjusting for BF, eGFR, gender and age.

In conclusion, BMI and BF were associated with increased leptin and HOMA-IR, but with decreased HMWAdipo. The OwOb CKD patients presented higher risk for metabolic and cardiovascular disorders.

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INFLAMMATION IS ASSOCIATED WITH EXCESSIVE BODY ADIPOSITY IN NONDIALYSED CHRONIC KIDNEY DISEASE (CKD) PATIENTS

Maria Ines Barreto-Silva, Carla Avesani, Laura Kawakami, Renata Martucci, Rachel Bregman
Rio de Janeiro State University

The purpose of this study was to evaluate inflammation in non-dialysed CKD patients with normal and high body adiposity level. One hundred and thirty four CKD patients (male: 56%; age=65 ± 12 years) under treatment for 3.0 ± 2.0 years were evaluated in a cross-sectional study. Glomerular filtration rate (eGFR) was estimated by MDRD equation. Body adiposity was assessed by BMI and total body fat (BF; dual-energy X-ray absorptiometry). Laboratorial measurements were: albumin, pro-inflammatory cytokines by Multiplexed analysis: tumor necrosis factor-α, interferon-γ, high sensitive C reactive protein, monocyte chemotactic protein, inteleukine 6 and 8, intercellular adhesion molecule-1 and vascular adhesion molecule-1. The inflammation status was defined according to the median values for each studied pro-inflammatory cytokines: negative for inflammation (Infl-) ($<$ median), positive for inflammation (Infl+) ($\geq$ median). The cytokines were compared between patients with normal BMI (<25kg/m^2) (46%; BMI=22.2 ± 1.9) and high BMI (≥ 25kg/m^2) (BMI=28.8 ± 2.8). Both groups showed similar eGFR and CKD stages distribution (stage 3:42%, 4: 37%, 5: 21%). BF and all cytokines were higher in high BMI group than in normal BMI ($P < 0.0001$). BMI and BF were correlated (r= 0.74; $P < 0.0001$). The Infl+ condition was more prevalent, for all cytokines, in the high BMI group (range:61–76%) than in normal (24–38%). Multivariate logistic regression analysis, for all cytokines, showed that Infl+ condition was associated with high BMI (Odds Ratio range: 2.5–4.2; 95%CI: 1.1 - 9.6; $P < 0.01$), even after adjusted for age, gender, diabetes and eGFR. In conclusion, CKD patients with high BMI and body adiposity are at higher risk for inflammation. Therefore, the excess of adiposity should be carefully treated in these patients.

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SPANISH MULTICENTRIC STUDY ABOUT NUTRITION-INFLAMATIONHN WITH MID DILUTION (ENIMID STUDY): PRELIMINARY RESULTS

Barril G, Anaya S, Vozmediano C, Celayeta AO, Novillo R, Garcia-Bernal V, Beired I, Huarte E, JC Chacon, Martn J, Santana H, Grande J, Chacon JC, Martin Garcia, Sousa F, Martin J Gago, Sanchez R, Lopez-Montes A, R de Gracia, Tornero F, Uson J, Pousa M, Cigarran S, Giorgi M, Rdez Cubillo B, Herrero J, Izdo MJ, Abaigar P

Introduction and aims: The prevalence of malnutrition are 23-76% of ESRD patients undergoing HD, and 20-50% of them suffers inflammation. Nowadays, the "malnutrition-inflammation" duo is frequently found in HD patients.The aim of this Spanish multicenter study is to evaluate the effects of the Mid-Dilution HDF on the inflammatory-nutritional state, on some body composition and on the quality of life in the HD patients. The total number of patients expected 64; the preliminary analysis of 52 patient/3 months and 23 after 6months (the study will last 1 year), is presented.
Methods: Patients undergoing standard HD treatment with High Flux dialyzers for 4 hours/three times a week passed to HDF Online MidDilution with OLPUR 220 filters at a reinfusion rate of 12l/h.The patients are classified by: age, gender, Charlson comorbidity index, dialysis vintage. The parameters analyzed each 3 months are: urea, β2microglobuline, albumin, pre-albumin, CRP, fibrinogen, IL6, IL10, leptin, adiponectin, neuropeptide Y, body composition by BIVA parameters and apetite and quality life surveys.
RESULTS: Patients classification: • Age: 64.06 ± 0.8 years; • Sex: 64% male; • Charlson-index: 3.97 ± 1.66; • HD vintage 54.7 ± 44.8 months.Significant decrease of β2microglobuline pre-dialysis from baseline 26,16 to 20,06 mg/L (p= 0,006) after 3 months and to 17,88smg/L (p= 0.09) after 6 months. xβ2microglobulineRR was 82.45 ± 3.20 % and the URR was 79.56 ± 3.51 %, which demonstrates a good removal of medium and small molecules. The Kt/V remained stable ($>1,5$). Albumin increased from 3.81 g/dL to 3.87 g/dL in e months and to 3.89 g/dL in the 6 months of evaluation. No significant differences in levels of pre-albumin (xbaseline 28 mg/dl). Corporal and BIVA parameters evolution These data shown an improvement of the body composition and water distribution. .Sig. improvements were seen in the appetite scale in the first 6 months (p= 0.09). The total Quality of Life, evaluated in 3 months by SF36, increased from 55,61 to 50,66 (p= 0,05); the physic from 50,28 to 55,92 (p= 0,036); the mental from 55,69 to 60,1 (p= 0,12).Cytokines:we found an increase in neuropeptide Y and IL10 and no significant changes in leptin and adiponectin with slight increase of IL6.
CONCLUSIONS: 1-The preliminary results show that MidDilution provides a good removal of small and middle molecules, increases appetite by providing a proper balance of cytokines through stimulation of antiinflamatory ones and neuropeptide Y. 2-It provides an improvement of body composition. Finally MidDilution improves nutritional parameters which leads to a better quality of life, as well as physical and mental status.

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LONGITUDINAL CHANGES IN PHASE ANGLE REFLECT CHANGES IN SERUM IL-6 LEVELS IN MAINTENANCE HEMODIALYSIS PATIENTS

Ilia Beberashvili, Ada Azar, Inna Sinuani, Hadas Kadoshi, Gregory Shapiro, Leonid Feldman, Zhan Averbukh, Joshua Weissgarten
Assaf Harofeh Medical Center, Zerifin, Israel

We hypothesized that longitudinal changes in phase angle (PA) may have independent associations with changes in inflammatory parameters over time and consequently with long-term survival in maintenance hemodialysis (MHD) patients.Dietary energy and protein intake, biochemical markers of nutrition, body composition (anthropometry and bioimpedance analysis) and IL-6 as inflammatory marker, were measured at

baseline and at 6, 12, 18 and 24 months following enrollment, in 101 prevalent hemodialysis patients (37% women) with a mean age of 64.6 ± 11.5 years. Observation of this cohort was continued over 3 additional years.

Longitudinally, 1^{O} increase in PA over time, controlling for demographic and clinical parameters, was associated with a delay in longitudinal elevation of IL-6 (linear estimate: -2.11 (95% CI: -3.47; -0.75) pg/ml/mo; p=0.002 for PA X Time interaction). A decrease or increase in PA over time was associated with inverse linear changes in IL-6 levels (adjusted r=-0.305, p=0.005) and correspondingly with higher or lower death risk. For each 1^{O} increase in PA, the crude and adjusted mortality hazard ratios using Cox models with effect of time varying risk were 0.62 (95% CI: 0.54; 0.71) and 0.61 (95% CI: 0.53; 0.71), respectively.

In conclusion, longitudinal changes in PA appeared to be reliable in detecting changes in nutritional and inflammatory parameters over time - combination that may contribute to understanding of its prognostic bearing.

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PILOTSTUDY TO EVALUATE THE EFFECT OF PHOSPHORUSBINDERS ON FGF23

A.Bouma de Krijger, P.M. ter Wee, F.J. van Ittersum, M.G. Vervloet
Dept. of Nephrology,VU University Medical Centre, Amsterdam

The Netherlands Fibroblast growth Factor 23 (FGF23) is independently associated with cardiovasculair outcome. A reduction of dietary phosphorus intake in healthy individuals leads to a decrease of FGF23. Data on the potency of phosphate binders to lower FGF23 in CKD stage 3 are conflicting. We treated 18 normophosphatemic CKD stage 3 patients with a fixed dose of sevelamer-carbonate (Renvela®) 2,4 g powder for suspension, before breakfast and diner. Patients remained on their usual diet. Laboratory data were collected 2 weeks prior to baseline, at start of sevelamer, at week 8 following sevelamer treatment and after a wash-out of 2 weeks. We measured serum phosphorus, PTH, FGF23, estimated GFR (by the MDRD formula) and 24–h urinary phosphate excretion. General Estimated Equation was used to evaluate the effect of phosphorusbinding on 24–h urinary phosphate excretion and on FGF23.

patientcharacteristics	
n	18
Age(year)	54 (46,1-62,2)
Sex (m/f)	7 / 11
race (% caucasian)	66
eGFR (ml/min/1.73m2)	41.2 ± 9.6
FGF23 (U/l)	158 (116-216)
PTH (pmol/l)	7.5(5,4-41,8)
Phosphate (mmol/l)	1.09 ± 0.19
Proteinuria (g/24 h)	0,7 (0,2-1,6)

Results are as follows; phosphorus binding by sevelamer significantly lowered urinary phosphate excretion, from a median of 26.25 mmol/24 h to 17.5 mmol/l. Other parameters showed no sgnificant association with urinary phosphate excretion. The serum phosphate was unchanged during treatment. Creatinin clearance was significantly associated with FGF23 (p0.03). FGF23 did not change significant following phosphorus binding therapy. In conclusion; although 8 weeks sevelamer treatment significantly lowered 24 h urinary phosphate excretion, there was no reduction in FGF23 levels in this group of CKD stage 3 patients.

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NUTRITION AND HEMODIALYSIS: THE ASSOCIATION OF DIETITIAN INTERVENTION TOWARDS ACHIEVING QUALITY PATIENT DIALYSIS OUTCOMES

archied bunani ali mohammed lehbi

The National Kidney Foundation has recognized nutritional interventions as building blocks of better dialysis outcomes. This study investigated the influence of Dietitian Intervention on mortality, adherence to dialysis prescriptions, and Quality Patient Dialysis Outcomes. The Subjective Global Assessment (SGA) tool was used to identify ratings and these ratings were associated to the tendency of risk towards mortality using a hazard ratio of 95% confidence interval in cox regression using SPSS v.19. Results revealed that respondents who marked significantly as C (1) in the Functional Capacity Items – *Dysfunction* (sp=1.45) showed highest risk (17.5% risk) towards mortality. This implied that these individuals despite of Dietitian Interventions, mortality were increased related to co-morbidities. Respondents who had changes on eating habits in a *typical breakfast, lunch, dinner compared from the last 6 months* and those who, during physical examination, had *ankle edema* showed higher risk (sp=1.40) towards mortality at 3.44%. Respondents who showed a B (2) on *metabolic demand (stress)* and those with *muscle wasting (quadriceps, deltoids)* showed a 2.14% mortality risk (sp=1.37); lower than those with *dysfunction.* Results further indicated that respondents who have higher spKt/V (sp=1.58) showed an SGA rating of A (3) and noted to have lowest risks towards mortality and other co-morbidities.

Quality Dialysis Patient Outcomes	Hazard Ratio (95% Confidence Interval)		
	SGA Rating	*Correlation*	*DESCRIPTION*
Indicators			
Sp Kt/V (< 1.2 = > 1.2)	1.58	0.87	STRONG
Dysfunction	1.22	0.66	STRONG
Changes of Eating Habits	1.36	0.72	STRONG
Metabolic demand	1.36	0.78	STRONG

In conclusion, an influence of Dietitian Intervention was notable to all patients receiving dialysis treatments. The Clinical Dietitian's facility in assisting dialysis patients on the proper diet to be taken associated to condition will enable the individual to lower mortality risk ratio.

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NUTRITION-RELATED PREDICTORS OF SLEEP DURATION IN HEMODIALYSIS PATIENTS

Jerrilynn Burrowes [1], Greg Russell [2], Mark Unruh [3], Michael Rocco [2]
[1] *Long Island University (LIU) Post, Brookville,NY*
[2] *Wake Forest School of Medicine, Winston-Salem, NC*
[3] *U of Pittsburgh, Pittsburgh, PA, USA*

We have previously shown that poorer appetite was a significant predictor of decreased sleep quality (SQ) among maintenance hemodialysis (MHD) patients. There is a gap in the literature when examining sleep duration (SD) in MHD patients and the variables that may predict SD. Using data from the HEMO Study, demographic, case mix, nutrition-related and quality of life (QOL) variables were explored as predictors of SD in 1805 MHD patients. Self-reported SD (in hrs) in the last 24 hrs was assessed annually using questions from the KDQOL instrument. A multinominal logistic regression analysis was conducted to determine whether SD (short 0–6; medium 7–9; or long 10+) was associated with the selected variables and Kt/V and flux randomized assignments in a longitudinal (repeated measures) model.

At baseline, mean SD was 7.8 ± 2.4 hrs; 33%, 43% and 24% of subjects were in the short, medium and long sleep groups, respectively. In univariate analysis, dietary protein intake, serum albumin, appetite, and QOL measures (mental component score [MCS] and physical component score [PCS]) were significant predictors of SD. In multivariate analysis, age (P=0.008), race (White vs. Black) (P=0.001), appetite on dialysis days (DD) (P=0.0001), MCS and PCS (P < 0.0001, respectively) were also significant predictors of SD. Younger patients and those with good appetite on DD were more likely to sleep less, whereas Blacks and those with higher MCS and PCS were more likely to sleep more. Of the nutrition variables, higher protein intake and better appetite were associated with long vs. short SD in univariate analysis. In multivariate analysis, appetite on DD was the only variable predictive of SD. The odds ratio (95% CI) of having a good appetite for those in the short SD group compared to the medium and long SD groups was 0.81 (0.72, 0.92) and 0.86 (0.78, 0.95), respectively. Further research on SD and appetite and the potential effects of short sleep on inflammation needs to be done in MHD patients.

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