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ABSTRACTS

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SP389 POLYSULFONE FLAT SHEET MEMBRANES PREPARED WITH VITAMINE E AND LIPOIC ACID TO REDUCE OXIDATIVE STRESS IN DIALYSIS

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INTRODUCTION AND AIMS: Chronic kidney disease patients regularly undergoing haemodialysis (HD) treatment present high levels of oxidative stress (OS) biomarkers and chronic inflammation caused by HD treatment itself, besides the disease conditions. The long-term contact of blood with artificial material causes overstimulation of inflammatory cells with release of different inflammatory products, namely, reactive oxygen species, leading to OS-related complications in these patients. Polysulfone (PS) is nowadays the most used polymer for HD membranes, due to its improved biocompatibility. To minimize the negative OS-related complications of HD procedure, the bioactive hollow-fibre PS membranes modified with vitamin E (Vit E) are currently commercially produced and used at HD clinics.[1] Most of the clinical studies showed that this type of bioactive membrane reduces the inflammatory response and OS, and its impact on patient's morbidity and mortality still needs longer follow-up studies. Lipoic acid (LA) was also proposed and evaluated in HD membranes in terms of inhibition of reactive oxygen species (ROS) in blood plasma [2], although no studies compared the antioxidant activity of Vit E and LA membranes. Our aim was to prepare bioactive PS membranes (with Vit E or LA) and compare their membrane structure, separation characteristics, maximum amount of bioactive compound incorporated as well *in vitro* antioxidant capacity.

METHODS: Membranes were prepared by dissolving the bioactive compounds in PS solvent N-methyl-2-pyrrolidon and casted on silicon wafer by spin coating, followed by phase inversion process. The release of Vit E or LA from PS membranes, in the phase inversion, was quantified by fluorometry and UV spectrophotometry, respectively.The antioxidant activity of membranes was evaluated by ferric reduction antioxidant power (FRAP) assay.

RESULTS: Our data showed that membranes enriched with LA, compared to Vit E, presented better separation characteristics of biomolecules. Nevertheless, FRAP assay showed (2 fold) lower antioxidant activity for membranes enriched with LA than with Vit E. Despite that, due to favourable effect of LA on separation characteristics of the membranes, as well as on its antioxidant activity, the introduction of LA acid into PS membranes looks promising and studies concerning the inhibition of OS and inflammatory biomarkers in blood plasma are under study by our group.

CONCLUSIONS: This new emergent field of research focusing on using bioactive compounds to diminish inflammation and oxidative stress may actually contribute to reduce the high mortality rate in chronic disease patients on haemodialysis.Financial support from EU (FEDER funds POCI/01/0145/FEDER/007265) and National Funds (FCT/MEC) under the Partnership Agreement PT2020 UID/QUI/50006/2013; CCDR-N/NORTE2020/Portugal 2020 (Norte-01-0145-FEDER-000024); Charles University Grant Agency, project GAUK no. 860216 and by project of specific research of Charles University, project no. SVV 260 412. 1. Wenten, I. G., et al.: Journal of Membrane Science and Research, 2(2), 2016, 78-89.2. Mahlicli, F. Y., et al.: Journal of Membrane Science, 449, 2014, 27-37.

SP390 ANALYSIS OF LIPID PROFILE IN RELATION TO ECHOCARDIO GRAPHIC PARAMETERS IN CHRONIC KIDNEY DISEASE STAGE5 COMMENCING MAINTAINANCE HEMODIALYSIS

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INTRODUCTION AND AIMS: Introduction: Cardiovascular disease is important cause of morbidity and mortality in CKD. Increased risk of atherosclerosis in CKD is due to the overlap of traditional risk factors of atherosclerosis with CKD-specific factors like altered calcium and phosphorus homeostasis, malnutrition, anaemia, hyperhomocysteinaemia, low serum albumin and high fibrinogen levels, as well as oxidative stress and inflammatory state. Cardiovascular mortality rate in end stage renal disease (ESRD) patients is 10-20 times higher than in the general population. Aim of study: Analyse the major risk factor dyslipidemia in relation to echocardiographic parameters in CKD stage 5 patients commencing MHD

METHODS: Data of stable CKD stage 5 patients who were to be initiated on MHD between 2011 to 2015 was retrospectively analysed. Parameters like hemoglobin; RFT; LFT; calcium; phosphorus; uric acid; PTH; vitamin D; hsCRP; lipid profile and echocardiogram were collected. All those with an evidence of severe sepsis; respiratory failure and acute vascular events were excluded. After excluding those on statin therapy, the association between lipid profile and echocardiographic parameters was analysed

RESULTS: There were 394 patients with mean age of 47.6±18.2 years. Males were 264 and females were 130. Among them 148(37.6%) were diabetics and 255 (64.7%) were hypertensive. There was history of CAD in 56(14.2%) and stroke in 10(2.5%). Mean levels of Total cholesterol(TC)- 138.2±56.2mg/dl; HDL cholesterol (HDL C)-37.5±21.7mg/dl; LDL cholesterol (LDL C)- 76.2±44.8mg/dl and triglycerides(TG)-120.1±75.6mg/dl. Concentric LVH was seen in 68(17%); systolic dysfunction in 28(7%); diastolic dysfunction in 55 (14%) and aortic sclerosis in 30(7%)patients. TC (mean-138.2±56.2mg/dl) and LDL C(mean76.2±44.8mg/dl) levels were associated with both systolic and diastolic dysfunction

CONCLUSIONS: Concentric LVH is the most common echocardiographic abnormality seen in our group of patients with relatively young age commencing MHD. TC and LDL C are associated with both systolic and diastolic dysfunction

SP391 NUTRITIONAL EVALUATION AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE UNDER CONSERVATIVE TREATMENT IN A REFERENCE SERVICE IN NORTHEAST OF BRAZIL

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INTRODUCTION AND AIMS: Nutritional evaluation is one of the most important parts of multidisciplinary treatment of chronic kidney disease (CKD). Patients with CKD frequently present nutritional disturbances, which goes from malnutrition to overweight and obesity. The aim of this study was to evaluate the nutritional aspect of patients with CKD at different stages, in conservative treatment, and assess their nutrients intake through a longitudinal analysis.

METHODS: This is a longitudinal study conducted at a reference Nephrology outpatients' clinic in Fortaleza city, northeast of Brazil, the Nucleo de Atencao Medica Integrada, at the University of Fortaleza, in the period from August 2016 to August 2017. A total of 99 consecutive patients were included, older than 18 years old, with confirmed diagnosis of CKD, according to KDIGO guidelines. Nutritional status was assessed through determination of body mass index (BMI), waist circumference and waist-to-hip ratio. Dietary intake was assessed through a 24-hour dietary recall. Each patient was evaluated at four different moments every 3 months for one year.

RESULTS: Patients mean age at the beginning of the study was 68.2±14.2 years. The majority of them were elderly (73.7%) and female (53.5%). The most frequent causes of CKD was hypertension (89%) and diabetes (52%). CKD stage III was the most prevalent (48.5%) in the first evaluation, followed by stage II (33%), while in the last evaluation, CKD III was found in 51.8% of cases, followed by stage II (32.1%). Patients' mean BMI was 27.8±4.8 kg/m^2 and waist circumference 102.3± 9.5 cm. In adults, patients' BMI ≥30 kg/m^2 was found in 37.5% in the first evaluation and in 18.2% in the last evaluation; while in elderly patients, BMI ≥27 kg/m^2 was found in 56.8% in the first evaluation and 55.9% in the last evaluation. The majority of the patients presented a low energy intake, as well as inadequate consumption of lipids and fibers in the four evaluations. The consumption of carbohydrates was adequate for patients with CKD. Comparing the first and the last evaluation there was a significant decrease in lipid consumption ($p<0.05$), as summarized in Table 1.

CONCLUSIONS: Patients with CKD in conservative treatment present excess weight despite having low nutrient intake. Only protein and carbohydrate were found to be within the values recommended for CKD. It is possible that dietary recall may have been underestimated or hormonal disturbances may play a role in these disturbances. Further studies are required to better understand the dynamics of nutritional system in CKD patients.

Table 1. Dietary intake in the first and last evaluation among patients with CKD in a longitudinal s

24h dietary recall	First evaluation (n=99)	Last evaluation (n=56)	p-value
Total energy intake (kcal)	1294±489	1173±441	0.12
Kcal/weight (kg)	19.2±8.5	17.4±6.8	0.10
Carbohydrate's Percentage	55.2±9.2	57.3±8.6	0.16
Protein g/weight (kg)	0.7±0.4	0.7±0.3	0.65
Percentage total lipid	28.1±9.1	24.5±7.3	0.004

SP392 COPEPTIN AND VOLUME STATUS IN MALNOURISHED PATIENT WITH CHRONIC KIDNEY DISEASE

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INTRODUCTION AND AIMS: Patient with chronic kidney disease (CKD) are vulnerable to malnutrition. Malnutrition, inflammation and atherosclerosis (MIA syndrome) have been proposed as the main causes of morbidity and mortality in CKD patients. It