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LONGITUDINAL CHANGES IN PHYSICAL ACTIVITY LEVEL AND THE ASSOCIATION WITH MUSCULARITY AND THE METABOLITE BAIBA IN HEMODIALYSIS PATIENTS

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Background and Aim: Low physical activity is highly prevalent in end stage renal disease and few studies analyzed the time course and the impact of physical activity changes among hemodialysis (HD) patients. We aimed to evaluate the longitudinal changes in physical activity and its barriers in a cohort of HD patients and the association between the patterns of physical activity changes, body composition, and beta-aminobutyric acid (BAIBA), as circulating myokine.

Methods: Chronic HD patients were considered in a 24-month follow-up. The presence and changes of physical inactivity and its barriers were recorded by validated questionnaires, body composition was assessed by body impedance analysis, and muscle strength by handgrip dynamometer. Plasma BAIBA levels were measured by liquid spectrometry. Parametric and non-parametric analyses were performed, as appropriate.

Results: Forty-nine patients were studied at baseline (51% were inactive and 88% reported barriers to physical activity); 39 patients completed the first year follow-up (51% were inactive and 90% reported the presence of barriers); 29 patients completed the second year follow-up (63% resulted inactive and 96% reported the presence of barriers). The barrier "reduced walking ability" was more frequent in inactive patients with respect to active at month 12 (P=0.003) and at month 24 (P=0.05). At 12-month follow-up, active patients had higher intracellular water (ICW) (P=0.001), as marker of muscle mass, and cellular mass (P<0.001) with respect to inactive patients. Similarly, at month 24, active patients showed, with respect to inactive, higher ICW (P=0.012) and cellular mass (P=0.002). The entire cohort showed, with respect to baseline, a significant reduction in ICW at month 12 (P=0.011) and at month 24 (P=0.014). At the end of the second year, significant correlation was seen between muscle strength and ICW (r = 0.51, P = 0.005) and BAIBA levels were higher among active patients with respect to inactive (P=0.043). When considering BAIBA normalized per body mass index, we found it significantly lower with respect to baseline (P=0.004), as well as after normalizing per ICW (P=0.001).

Conclusions: A high prevalence of physical inactivity persisted during a 24-month follow-up, associated with a decline in marker of muscularity and with reduced plasma BAIBA concentration, which might represent a possible novel biomarker of muscle mass in HD patients.

INVERSE RELATIONSHIP BETWEEN CHOROIDAL THICKNESS AND SUBCLINICAL RENAL DAMAGE IN ESSENTIAL HYPERTENSION

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Objective: The retina is considered the easiest accessible window to study the state of the systemic microcirculation, even if the choroid is the most important vascular layer of the eye. Our understanding of the choroid has been greatly increased in last years since the introduction of advanced techniques of optical coherence tomography (OCT). Our study was aimed to assess choroidal thickness by using Swept-Source OCT (SS-OCT) in essential hypertensive patients (EHs) with and without subclinical renal damage (SRD).

Design and method: We enrolled 100 EHs of which 65 without kidney damage and 35 with SRD. In all the participants SS-OCT and a routine biochemical workup were performed. Glomerular filtration rate (GFR) was estimated by the CKDEPI equation (eGFR). SRD was defined, by the presence of microalbuminuria or eGFR between 30 and 60 mL/min/1.73 m². OCT measurements were performed according to the Early Treatment

Diabetic Retinopathy Study (ETDRS) protocol, that divides the macula into 9 subfields. The circular grid consists of 3 concentric rings. The inner and outer rings are further divided into quadrants: temporal, nasal, superior, and inferior.

Furthermore, we calculated the average of the individuals values of the four quadrants separately for the inner and the outer ring. The average of all the 9 regions of the ETRDS grid (including the inner, the outer and the central rings) was also calculated.

Results: EHs with SRD showed thinner choroidal thicknesses than those without kidney damage (all p < 0.05), even after adjustment for age (figure). Overall choroidal thickness correlated significantly and directly with eGFR (r = 0.36) and negatively with urinary albumin excretion (r = - 0.39). The association of choroidal thickness with SRD was confirmed in multiple logistic regression analyses once the effect of age, anti-hypertensive therapy and triglycerides was accounted for. The odds ratio of having SRD associated with a standard deviation increase of overall choroidal thickness was 0.43 (0.24-0.75, 95% confidence interval; p = 0.007).

Conclusions: Our study confirms the close relationships between changes in ocular microcirculation and renal dysfunction.

SUNITINIB AND ENDOTHELIAL DYSFUNCTION, METABOLIC ALTERATIONS AND CARDIOVASCULAR RISK IN RENAL CELL CARCINOMA

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Background: Sunitinib, a tyrosine kinase inhibitor of vascular endothelial growth factor is a standard treatment for metastatic renal cell carcinoma (RCC). Currently the knowledge on the effects of sunitinib on endothelial dysfunction, metabolic change and cardiovascular (CV) risk are limited.

IM The aim of this study is to evaluate possible endothelial dysfunction and CV and metabolic change in patients with RCC treated with sunitinib.

Materials and Methods: Patients with metastatic RCC treated with sunitinib were enrolled. This population was evaluated before starting treatment (T0) and after 40 days (T1). Laboratory and instrumental parameters, including Flow Mediated Dilatation (FMD), carotid intima media thickness (IMT), ankle-brachial pressure index (ABPI) were recorded before (T0) and after 40 days (T1) of therapy.

Results: Nineteen patients (7 female, mean age 61.3±11.7 years) were enrolled. We showed overtime, a significant reduction in estimated glomerular filtration rate (eGFR)(p=0.05), FMD (p=0.041) and blood glucose levels (p=0.044) and a significant increase in systolic blood pressure (SBP) (p<0.001), diastolic blood pressure (DBP)(p<0.001) and proteinuria (p<0.001), while we reported a not significant difference in IMT and ABPI.

Conclusion: We observed the development of early endothelial dysfunction with hypertension, proteinuria and renal damage that may contribute to increased CV risk in patients treated with sunitinib, in addition to a significant reduction in blood glucose level, an aspect not yet completely understood, but certainly to evaluate and monitor closely. Therefore we suggest a careful assessment of renal function, urinalysis and measurement of BP, evaluating endothelial dysfunction and atherosclerotic parameters and monitoring blood glucose levels at initiation of sunitinib therapy and monitored regularly.

IN-HOSPITAL MORTALITY IN ELDERLY PATIENTS ADMITTED FOR ACUTE RENAL FAILURE: DOES A WEEKEND EFFECT EXIST? A NATIONWIDE RETROSPECTIVE STUDY

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