Results: During 13.6 ± 0.4 years of follow-up, forty-four patients (25.4%) patients were admitted in hospital due to cardiovascular causes (4 of them died). Hypertensives that were admitted were older (58 vs. 51 years, p = 0.001) compared to hypertensives with no hospitalization. In multivariable logistic regression analysis, only higher hsCRP (Odds Ratio [OR] = 3.34, 95% Confidence intervals [CI]: 1.22–9.51, P = 0.020) and increased PWV (OR = 1.48, 95% Confidence intervals [CI]: 1.03–2.12, P = 0.036) were associated with higher risk of cardiovascular hospitalizations. In the absence of age, gender, systolic blood pressure, left ventricular mass index and presence of diabetes. In further analysis, receiver operating characteristic (ROC) curves were generated to evaluate the ability of hsCRP and PWV to discriminate subjects with cardiovascular hospitalization. The area under the curve (AUC) and 95% CIs of the ROC curves were AUC = 0.69 (95% CI: 0.59–0.78, p < 0.001) for hsCRP and AUC = 0.74 (95% CI: 0.65–0.83, P < 0.001) for PWV (Figure).

Conclusions: Our study shows the independent complimentary prognostic role of inflammation and arterial stiffness in the prognosis of hypertensives even in studies with extensive follow-up.

A NOVEL FRAMESHIFT MUTATION OF SCNN1G CAUSING LIDDLE SYNDROME WITH NORMOKALEMIA

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Objective: Liddle syndrome (LS) is an autosomal dominant disorder caused by single-gene mutations of the epithelial sodium channel (ENaC). It is characterized by early onset and resistant hypertension, spontaneous hypokalemia and low plasma renin and aldosterone concentrations. In this study, we reported an LS pedigree with normokalemia resulting from a novel SCNN1G frameshift mutation.

Design and method: Peripheral blood samples were collected from the proband and eight family members for DNA extraction. Next generation sequencing and Sanger sequencing were performed to identify the SCNN1G mutation. Clinical examinations were used to comprehensively evaluate the phenotypes of two patients.

Results: Genetic analysis identified a novel SCNN1G frameshift mutation, c.1756delC, in the proband with LS. This heterozygous frameshift mutation generated a premature stop codon and deleted the vital PY motif of ENaC. The same mutation was not found in any other family members, 100 healthy controls, or 100 hypertensives, or 100 healthy controls.

Conclusions: Our study identified a novel SCNN1G frameshift mutation in a Chinese family with LS, expanding the genetic spectrum of SCNN1G. Genetic testing helped us identify LS with a pathogenic mutation when the genotypes and phenotype were not completely consistent because of the hypokalemia. This case emphasizes that once a proband is diagnosed with LS by genetic testing, family genetic sequencing is necessary for early diagnosis and intervention for other family members, to protect against severe cardiovascular complications.

LOWER URINE UROMODULIN IS ASSOCIATED WITH TREND TO LOWER SODIUM EXCRETION IN MIDDLE-AGED SUBJECTS

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Objective: Recent GWAS studies found uromodulin gene polymorphisms to be associated with increased risk for hypertension (HT) and chronic kidney disease. It was hypothesized that relation of uromodulin with HT might be through effects on sodium renal excretion. Our aim was to analyse association of urinary uromodulin concentrations (uUmc) with blood pressure (BP) and sodium excretion in a group of untreated middle-aged subjects.

Design and method: In this cross-sectional study with n ≥ 175 apparently healthy untreated subjects without a history for CV and with eGFR > 60 ml/min/1.73 m2 were enrolled. Fasting blood and urine 24-hour urine sample were obtained and BP was measured following ESC/ESH guidelines in office (Oronon M6) and during regular work (ABPM: Mobile-O-Graph). Based on office BP subjects were divided according to the JNC-7 classification. Uromodulin was determined by Enzyme Linked Immunosorbent Assay (ELISA). Sodium and potassium excretion were analysed in 24-hour urine samples. Fractional sodium excretion (FE Na) was calculated.

Results: Optimal BP (OBP), prehypertension (PHT) and HT were diagnosed in 47 subjects (43% m, mean age 37), 68 subjects (74% m, mean age 30), and 60 subjects (72% m, mean age 39), respectively. Nonsignificant trend to higher uUmc was found in HT compared to PHT/OPB (52 vs 40/42, respectively). In multivariate linear regression analyses (F = 3.1, p = 0.002) uUmc was positively associated with waist circumference (b = 0.502, p = 0.01), creatinine clearance (b = 0.391, p = 0.03), urinary potassium (b = 0.378, p = 0.001), urinary sodium/potassium ratio (b = 0.413, p = 0.004), and negatively with sodium excretion (b = -0.479, p = 0.003) with a trend to lower FENA. In adjusted multivariate logistic regression analyses, uUmc was not predictor for either for HT or for PHT.

Conclusions: In our group lower uUmc was associated with lower natriuresis and FENa what is in line with previous observations indicating that decreased salt intake is related to lower uUmc. However, as some other authors found that lower uUmc is related to increased sodium reabsorption in proximal tubule we also observed trend to lower FENA.

BENEFICIAL EFFECTS OF WALKING ACTIVITY ON HYPERTENSIVE MEDIATED ORGAN DAMAGE IN THE COMMUNITY-DWELLING ELDERLY CHINESE: THE NORTHERN SHANGHAI STUDY

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Objective: Growing evidence indicated the significance of exercise on the prevention of cardiovascular diseases. However, the effect of walking activity on the hypertensive mediated organ damage (HMOMD) remains unclear.

Design and method: 2830 community-dwelling residents (age≥65 years) in northern Shanghai were recruited from June 2014 to June 2018. Weekly walking activity (low-intensity activity) was evaluated by standard questionnaire based on the International Physical Activity Questionnaires-short form, including how many days spent on walking at least 10 minutes at a time and walking duration time. Walking duration per time was classified into two subgroups (over 30 minutes/day and over 1 hour/day), and walking days per week was categorized into <3, 3–4, and ≥4 days/week. Within the framework of comprehensive cardiovascular examinations, HMOMD, including left ventricular mass index (LVMI), peak transmural pulsed Doppler velocity/early diastolic tissue Doppler velocity (E/Ed), carotid intima-media thickness (CIMT), arterial plaque, creatinine clearance rate (CCR), urinary albumin-creatinine ratio (UACR), carotid-femoral pulse wave velocity (c-fPWV) and ankle-brachial index (ABI), was evaluated.