

**Objective:** To present preliminary evaluation of clinical features, presenting symptoms and cardiovascular complications in patients with fibromuscular dysplasia (FMD) enrolled to ARCADIA-POL registry.

**Design and method:** The first 84 patients with confirmed FMD in any vascular bed were enrolled in ARCADIA-POL registry from 15 Polish sites. Based on Polish-French collaboration ARCADIA-POL registry was instituted in January 2015 to better understand clinical characteristics and management of FMD in Poland, representing region of Central Europe. A standardized FMD data form was used for data collection. All patients underwent detailed clinical evaluation including ambulatory blood pressure monitoring, biochemical evaluation, biobanking, duplex Doppler of carotid and abdominal arteries and whole body angio-CT.

**Results:** We included 84 patients (59F[70.2%], 25M[29.8%], mean age:  $42.5 \pm 14.8$  years, range: 18–72). In the analyzed group FMD was identified most frequently in renal arteries (88.1%). The mean age at the diagnosis of hypertension was  $31.7 \pm 17.8$  years and the FMD was diagnosed on average  $5.6 \pm 9.5$  years later with the mean age at the diagnosis of FMD  $38 \pm 15.8$  years. The most common presenting symptoms of the disease were: hypertension (84.5%), headaches (71.4%), tinnitus (40.5%), dizziness (36.9%) and epigastric (34.5%) or cervical bruits (11.9%). At evaluation 76 patients (90.5%) were found to be hypertensive and were taking a median number of 2 (interquartile range[IR]:1-3) antihypertensive agents. The mean office and 24 h ABPM systolic and diastolic BP values were  $131 \pm 21/82 \pm 13$  mmHg and  $126 \pm 16/77 \pm 10$  mmHg, respectively. 41 patients (48.8%) were smokers - 18(21.4%) and 23(27.4%) patients were current and former smokers respectively. Based on questionnaire taken from 84 patients, one patient reported confirmed FMD in her family - 9 members were evaluated and FMD was confirmed in two sisters and father. Among cardiovascular complications reported by patients, cerebrovascular events occurred in 19 patients (22.6%), coronary artery disease in 4 patients(4.8%) and myocardial infarction in 1 patient(1.2%).

**Conclusions:** Preliminary data of ARCADIA-POL registry showed that FMD is occurring primarily in middle-aged women and most frequently in renal arteries. Although a significant proportion of FMD patients may present with a serious cardiovascular complications, many present with nonspecific symptoms and a subsequent delay in the diagnosis.

PP.11.08

#### THE ASSOCIATION OF METABOLIC SYNDROME AND ITS COMPONENTS WITH CARDIO-ANKLE VASCULAR INDEX. GENDER DIFFERENCES

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**Objective:** Cardio-Ankle Vascular Index (CAVI) can reflect peripheral arterial stiffness. Metabolic syndrome (MS) and its components may increase arterial stiffness and the risks of cardiovascular diseases. However, the association of MS and its components with arterial stiffness has not been well studied. The aim of this study was to investigate the association between MS/its components and arterial stiffness evaluate by CAVI in Spanish population with intermediate cardiovascular risk

**Design and method:** Cross-sectional study. This study analyzed 2384 subjects who were included in the MARK study, aged 35 to 74 years (mean  $61.3 \pm 7.7$ ), 61.7% male. Measurement: CAVI using the VaSera device. Metabolic syndrome was defined according to the NCEP ATP III definition. Waist circumference, blood pressure (BP), fasting plasma glucose (FPG) and lipid profile were measured.

**Results:** CAVI was significantly higher in males ( $9.04 \pm 1.24$ ) than in female ( $8.77 \pm 1.13$ ) ( $p < 0.001$ ). In multivariate regression analysis, after adjusting for age, weight, height, antihypertensive drugs, lipid-lowering drugs and antidiabetic drugs, the CAVI maintained a positive association with the MS ( $\beta = 0.265$  and  $\beta = 0.247$ ;  $p < 0.01$ ), in male and in females. In males CAVI was associate with the BP, waist circumference and triglycerides ( $\beta = 0.444$ ;  $\beta = 0.195$  and  $\beta = 0.128$ ;  $p < 0.05$ ), and in females with the BP and FPG ( $\beta = 0.247$  and  $\beta = 0.231$ ;  $p < 0.05$ ). The HDL-C no maintained association in both genders. In the logistic regression analysis, after adjustment for confounding factors used in the multiple regression, subjects with higher (CAVI > 9) have twice the risk of having MS, OR = 1.708 in males and OR = 1.849 in females ( $p < 0.01$ ).

**Conclusions:** Metabolic syndrome was positively associated with CAVI. The association of the components of the MS with CAVI differs by gender. Monitoring CAVI can be helpful to identify early stage of arterial stiffness in those people with MS.

PP.11.09

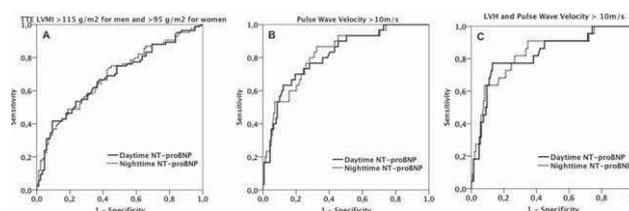
#### PLASMA NT-PROBNP MIRRORS THE DELETERIOUS CARDIOVASCULAR CONTINUUM IN HYPERTENSION

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**Objective:** The aim of the present study was 1) to test the ability of N-terminal pro-brain natriuretic peptide (NT-proBNP) to detect cardiovascular remodeling denoted by either left ventricular hypertrophy (LVH) or arterial stiffness and 2) to test its reproducibility on two different conditions.

**Design and method:** The study included 169 hypertensive subjects, aged  $47 \pm 16$  years, 51.5% of whom were men. 24-h ambulatory blood pressure was  $141/88$  mmHg. None of them had symptoms of heart failure, ejection fraction < 50%, and eGFR < 30 mL/min. LVH was defined by transthoracic echocardiography as greater than  $115 \text{ g/m}^2$  in men and  $> 95 \text{ g/m}^2$  in women; increased arterial stiffness was defined by a carotid-femoral pulse wave velocity greater than 10 m/s.

**Results:** Mean daytime NT-proBNP was slightly higher than nighttime NT-proBNP (64 [30–140] vs. 56 [27–126] pg/mL,  $p = 0.005$ ) but the 2 assessments were highly correlated ( $r = 0.919$ ,  $p < 0.001$ ). Values of NT-proBNP increased significantly according to the number of target organ damages: daytime NT-proBNP 40 [22–74], 75 [37–155], 243 [144–358] pg/mL, for 0, 1 and 2 organ damages respectively,  $p < 0.001$ ). The areas under the receiver-operating characteristic curves and optimal NT-proBNP were respectively: 1) for LVH, 0.673 and 166 pg/mL; 2) for arterial stiffness 0.817 and 294 pg/mL; 3) for both target organ damages 0.826 and 346 pg/mL (Figure).



**Conclusions:** This study demonstrates that NT-proBNP mirrors the cardiovascular consequences of hypertension, which precedes overt heart failure. Based on that and also on a good reproducibility, NT-proBNP is a promising tool for the management of hypertensive patients.

PP.11.10

#### CYSTATIN C AND ITS ASSOCIATION WITH CAROTID PLAQUE AND INTIMA MEDIA THICKNESS IN SUBJECTS WITHOUT KNOWN CARDIOVASCULAR AND KIDNEY DISEASES

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**Objective:** Cystatin-C was reported to be a surrogate of kidney function while a high level of this marker has been shown to be a strong predictor of CardioVascular (CV) events in patients with Chronic Kidney Disease (CKD). It has also been shown to correlates with CV events and with carotid plaque and preclinical atherosclerosis (i.e. Intima Media Thickness – IMT) in patients without CKD or known CV risk factors, although these results have not been confirmed by recent studies. The present work is aimed at assessing the association between cystatin-C and carotid atherosclerosis in a population free of CKD and CV diseases.

**Design and method:** We studied 480 healthy and normotensive blood donor subjects. We evaluated common carotid IMT and plaques by ultrasound (Philips 5500, 7.5 Hz Probe) together with office Blood Pressure (BP). Cystatin-C was measured on plasma (ELISA methods); blood glucose, total, HDL and LDL cholesterol were also measured.

**Results:** 2.5% of the population (12 subjects) showed an IMT higher than 0.9 mm. Those subjects were older ( $53.1 \pm 7.5$  vs  $44.7 \pm 9.6$  years,  $p < 0.001$ ) and showed a significantly higher plasma glucose ( $97.6 \pm 19.2$  vs  $89.6 \pm 10.6$  mg/dL,  $p = 0.01$ ) and Cystatin-C levels ( $0.72 \pm 0.29$  vs  $0.62 \pm 0.13$  mg/L,  $p < 0.05$ ) than subjects with IMT < 0.9 mm. 8.9% of the population (43 subjects) had carotid plaque. Those subjects were older ( $52.7 \pm 7.6$  vs  $44.9 \pm 9.6$  years,  $p < 0.001$ ) and showed higher plasma glucose ( $94.4 \pm 12.7$  vs  $89.8 \pm 11.1$  mg/dL,  $p = 0.01$ ) total and