PP.22.217 CHYMASE ACTIVITY IN MONONUCLEAR LEUKOCYTE IS INDICATOR FOR INSULIN RESISTANCE ACCOMPANIED WITH INCREASED HEPATIC TRANSAMINASES AND GAMMA GTP

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Background: Human chymase is an angiotensin II (AII) forming serine proteinase (AFSP) and its increased tissue activity is associated with development of various cardiovascular diseases. Convenient AFSP activity assay method was developed using the Nma/Dnp type fluorescence-quenching substrate of AI and used in the present study to investigate the association between various metabolism parameters and chymase dependent angiotensin II-forming activity (dAIIFA) in the circulating mononuclear leukocyte (CML).

Methods: Consecutive out-patients (n = 117) without antihypertensive agent were recruited into this study because our previous data indicated the influence of drug treatment on chymase dAIIFA in the CML. Chymase dAIIFA in CML was measured using the above substrate in the presence or absence of a specific chymase inhibitor (TPC806). Compared various clinical metabolic parameters were general blood data in routine clinical practice.

Results: Chymase dAIIFA in CML did not show any significant correlation with HbA1c, TG and non-esterified free fatty acid. Univariate regression analysis revealed that chymase dAIIFA showed a positive correlation with AST ($p<0.05$), ALT ($p<0.01$), GTP ($p<0.001$), fasting serum glucose ($p=0.06$) and insulin ($p<0.005$), HOMA-R($p<0.005$) or CRP ($p<0.0001$). There were no significant differences in chymase dAIIFA in CML with or without alcohol intake or hepatic virus infection.

Conclusion: Increased chymase dAIIFA in CML appeared to be clinical marker for insulin resistance and/or liver dysfunction probably due to fatty liver.

PP.22.218 DIASTOLIC DYSFUNCTION, LEFT VENTRICULAR AND VASCULAR REMODELING IN HYPERTENSIVE PATIENTS WITH OBESITY

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Objective: To investigate the peculiarities of left ventricular (LV) remodeling, diastolic dysfunction (DD) and common carotid artery (CCA) remodeling in hypertensive patients with obesity.

Design and method: 75 hypertensive patients (32 male, 43 female) with preserved LV systolic function had been observed, including 51 obese patients (21 male, 30 female). An ultrasound examination of heart (including estimation of transmitral blood flow and mitral valve annulus motion parameters) and CCA was performed. LV geometric pattern, E/A and E/Em ratios, ring segment weight (VM) of CCA were calculated. The statistical analysis was conducted using Mann-Whitney and Pearson χ^2 methods.

Results: Normal LV geometrical pattern was observed in 6 (11,8%) obese patients and 4 (16,7%) – without obesity, p>0,05; concentric remodeling – 7 (13,7%) and 1 (4,2%), p>0,05; concentric hypertrophy (CH) – 29 (56,9%) and 8 (33,3%), p=0,028; eccentric hypertrophy – (EH) 9 (17,6%) and 10 (41,7%), p=0,015. LV CH prevalence in obese patients was significantly higher vs EH, p<0,0001. Patients with obesity had higher LVMM (309,3±15,9 vs 258,8±16,8 g, p<0,05), but not MMI (148,5±7,1 vs 139,7±7,9 g/m2, p>0,05). LV DD was revealed in 48 (94,1%) obese patients (including 23 (100%) with II-III st. obesity) and 19 (79,1%) – without obesity, p=0,05. Type I of DD was observed in 31 (60,8%) obese patients, type II – in 17 (33,3%), p=0,028; in non-obese – 12 (50,0%) and 7 (29,2%) accordingly, p=0,07. CCA wall hypertrophy was observed in 44 (86,3%) obese patients (including 22 (95,7%) with II-III st. obesity) and 18 (75,0%) – without obesity, p<0,01. The values of mitral valve annulus motion parameters, intimal medial thickness and ring segment weight of CCA are given below, median [LQ; UQ].

Conclusion: Hypertensive patients with obesity were characterized by higher prevalence of LV hypertrophy, concentric patterns of remodeling and DD. Indices of CCA remodeling were also increasing along with BMI. Tissue Doppler parameters of mitral valve annulus motion are important early markers of LV DD.

Abstract PP.22.218 - Table

	Sm, cm/sec	Em, cm/sec	Exc, mm	E/Em	IMT, mm	VM
Patients without obesity	10,03 [8,61; 10,81]	10,5 [8,71; 12,73]	13,7 [11,8; 15,4]	6,86 [5,58; 8,57]	0,9 [0,7; 1,1]	0,332 [0,266; 0,420]
I st. obesity	8,42* [7,43; 9,97]	9,49 [7,68; 11,74]	13,0 [10,8; 14,8]	7,12 [5,44; 8,66]	1,0* [0,8; 1,2]	0,366 [0,306; 0,424]
II-III st. obesity	8,65* [7,99; 9,71]	9,18* [7,67; 11,2]	12,3 [11,5; 15,3]	7,69^ [6,31; 8,96]	1,0 [0,9; 1,3]	0,394*^ [0,339; 0,451]

Note: * - p<0,05 compared to group without obesity; ^ - p<0,05 compared to I st. obesity group.

PP.22.219 EFFECTIVENESS OF ANTIHYPERTENSIVE DRUGS WITH LIPASE INHIBITOR IN COMBINATION IN OBESE PATIENTS WITH ESSENTIAL HYPERTENSION

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Objective: The aim of present study was to evaluate the probability of the combination of ACE inhibitor Ramipril (R) and diuretic indapamide(I) with lipase inhibitor orlistat(O) and hypocaloric diet for the possible beneficial effects on left ventricular (LV) mass index,lipid profile and glycemic control in obese hypertensive patients.

Methods: Fifty obese non diabetic mild-to-moderate essential hypertensives (27 males and 23 females,mean body mass index (BMI)=38,8 kg/m², mean age= 52 years) with LV hypertrophy and dyslipidemia: total cholesterol (TC) > 190 mg/dl, low-density lipoprotein cholesterol (LDL-C) > 115 mg/dl were randomly assigned to R 10 mg daily and I 1,5 mg daily (group I – 25 patients) or R 10 mg daily and I 1,5 mg daily with O 120 mg three times a day and hypocaloric diet in combination (group II – 25 patients). Echocardiography was performed at baseline and after 12 months of therapy. The parameters of LV hypertrophy were evaluated. LV mass index (LV mass/body surface area) was calculated according to Devereux formula. TC was measured from fasting plasma samples obtained at baseline and at the end of the study. LDL-C was calculated by the Friedewald formula.Fasting plasma glucose was measured at baseline and at the end of the study.

Results: BP was lowered to less than 140/90 mm Hg in 88% of the patients of group I and in 92% of the patients of group II. BMI significantly reduced only in group II(-6,07±1,44 kg/m², p<0,001). At the end of the study LV mass index reduced from 164,3 ±7,2 to 132,1±6,2 g/m2 in group I (p<0,01) and from 163,8±5,3 to 123,6±4,9 g/m2 in group II(p<0,001).Only treatment with O and hypocaloric diet additionally to antihypertensive agents (group II) induced a notable reduction in TC (from 216,5±10,3 to 181,5±9,9 mg/dl, p<0,01),LDL-C (from 145,2±7,0 to 123,2±6,2 mg/dl, p<0,01),fasting glucose (from 115,3±4,9 to 101,8±4,4 mg/dl, p<0,05).

Conclusions: O with hypocaloric diet apart from improving the echocardiographic parameters of LV hypertrophy,promotes to improvement lipid profile and glycemic control,contributing to cardiovascular risk reduction.

PP.22.220 OBESITY AND ASSOCIATION WITH PREHYPERTENSION

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Introduction: Obesity amd waist circumference (WC) are well defined risk factors for cardiovascular disease. We know that association between the blood pressure and cardiovascular morbidity and mortality in this category is linear. Our aim was to investigate the association between waist circumference and blood pressure in prehypertensive obese patients.

Patients and method: We studied 1854 consecutive patients (not known hypertension), age 18-61 y. The prehypertension (PH) was defined as a systolic blood pressure of 120 to 139 mmHg or a diastolic blood pressure of 80-89 mm Hg. We investigated the blood pressure, body mass index (BMI), waist, hip circumferences, we calculated the waist/hip ratio.