PP.19.12 SUBCLINICAL LEFT VENTRICULAR DYSFUNCTION IN EGYPTIAN ISCHEMIC PATIENTS WITH TYPE 2 DIABETES MELLITUS BY SPECKLE TRACKING ECHOCARDIOGRAPHY

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Objective: To evaluate subclinical left ventricular dysfunction in Egyptian ischemic patients with Type 2 Diabetes Mellitus by Speckle Tracking Echocardiography (2D STE).

Design and method: The study included 80 known chronic stable angina patients and subdivided into DM group (40 patients with Type 2 Diabetes Mellitus) and non-DM group (40 patients without Diabetes Mellitus) and we used20 cases of apparently healthy volunteers as a control group. LV regional longitudinal, circumferential and radial peak systolic strain were measured respectively using Philip iE33 vendor beside Simpson method for assessment of EF.

Results: Although assessment of EF by Simpson method showed no statistically significant difference between all the three groups, the peak systolic longitudinal strain in LV basal segments, middle segments and apical segments were significant lower in diabetic ischemic group than non diabetic ischemic group ($P < 0.05$)and lower in non diabetic ischemic group than control group ($P < 0.05$). The peak systolic circumferential and radial strain parameters showed no significant difference between all the three groups.

Conclusions: The systolic longitudinal myocardial function of LV evaluated by 2D STE has been reduced before the reduction of left ventricular global systolic function in ischemic patients with Type 2 Diabetes Mellitus.

PP.19.13 VITAMIN D LEVELS AND OBESITY IN PATIENTS WITH ESSENTIAL HYPERTENSION

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Objective: Vitamin D deficiency has been linked to obesity. Different mechanisms have been postulated, including the sequestration of vitamin D in adipose tissue or a volumetric dilution effect. Our aim was to study this association in patients with essential hypertension (EH).

Design and method: Cross-sectional, observational study including 633 patients (51% women), aged 59 (14) years, with a EH diagnosis. We excluded patients with diabetes mellitus. Routine analysis were obtained from each patient, including levels of 25(OH)D, (ECLIA, Roche Diagnostics). We define vitamin D deficiency as a serum 25(OH)D < 20 ng./ml.

Results: BMI was 30 (11), BP 136 (17) / 75 (11) mm Hg. 43% were obese. Serum levels of 25(OH)D were 30 (12) ng/ml, with no differences between genders (male 29 (12) ng/ml and women 30 (15) ng/ml, p: n.s.). 21% of the sample had vitamin D deficiency, again without differences within genders. Vitamin D levels were lower in obese patients (28 (11) vs. 31 (12) ng/ml, $p = 0.007$). There were no differences in BMI in patients with vs. without vitamin D deficiency (31 (7) vs. 30 (11), $p = 0.530$). The presence of obesity was not associated with vitamin D deficiency (25% with obesity vs. 19% without obesity, $p = 0.182$). The levels of 25 (OH)D were positively correlated with age ($r = .186$, $p < 00001$) and HDL-cholesterol ($r = 147$, $p = 0.003$) and negatively correlated with eGFR-MDRD ($r = - .186$, $p < 0.0001$). The only independent determinants of serum 25(OH)D in multivariate analysis were HDL-cholesterol (beta = 0.125, 95% CI: 0.42- 0.208, $p = 0.003$) and eGFR-MDRD (beta = -0112, 95% CI: -0167 to -0057, $p < 0.0001$), while age and BMI were excluded from the final model.

Conclusions: In our patients with EH, vitamin D deficiency was common but it was not associated with obesity. The levels of 25(OH) were lower in obese patients, although within a normal levels. We found no correlation between serum 25 (OH)D and BMI and the later was not associated with the serum 25 (OH)D concentration.

PP.19.14 THE RELATIONSHIP OF INSULINE RESISTANCE/FUNCTION BETA-CELLS INDEXES AND CARDIOMETABOLIC RISK FACTORS IN OBESE HYPERTENSIVE PATIENTS WITH PRE-DIABETES AND TYPE 2 DIABETES MELLITUS

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Objective: to investigate the relationship between insulin resistance/function β-cells indexes and lipid profile/apo B in hypertensive patients (HTP) with abdominal obesity (AO), pre-diabetes and type 2 diabetes mellitus (T2DM).

Design and method: 160 obese HTP on average age 56.54 ± 10.96 matched in age and sex was examined. Control group consisted of 21 healthy men aged on average 53.40 ± 11.80 years. All patients underwent clinical examination, assessment of carbohydrate and lipids metabolism and determine the level of apoprotein B (Apo B). According to the criteria of the IDF (2005) was diagnosed AO. Carbohydrate metabolism was evaluated according to IDF (2012). Insulin resistance (HOMA - IR), function β-cells (HOMA-FBC) indexes were calculated. The patients were divided into 3 groups depend on glucometabolic profile.

Results: The range HOMA-IR index for controls was 2.27 ± 0.94, for HTP with normoglycemia 2.95 ± 1.69, for HTP with pre-diabetes 5.17 ± 2.75, and for HTP with diabetes 11.07 ± 7.61. HOMA-FBC for controls was 156.42 ± 91.47, for HTP with normoglycemia 195.84 ± 47.96, for HTP with pre-diabetes 147.71 ± 87.02, and for HTP with T2DM 135.43 ± 74.60. AO was detected in 70% HTP and 70% HTP with pre-diabetes, and 89.74% in HTP with T2DM. Correlation analysis in HTP with normoglycemia has revealed relationship between HOMA-FBC index and high-density lipoprotein cholesterol (HDL-C) ($R = -0.20$), apo B ($R = 0.26$), $p < 0.05$. While there were no relationships between HOMA-IR and lipid profile, and apo B. Positive significant ($p < 0.05$) correlation between HOMA-FBC index and waist circumference (WC) ($R = 0.47$), very low density lipoprotein cholesterol (VLDL-C) ($R = 0.48$), triglycerides (TG) ($R = 0.59$), and apo B ($R = 0.61$) in HTP with pre-diabetes has been revealed. Along with this, HOMA-IR was associated with WC ($R = 0.59$), VLDL-C ($R = 0.42$), TG ($R = 0.55$), and apo B ($R = 0.52$), $p < 0.05$. In HTP with T2DM HOMA-IR was associated with apo B ($R = 0.70$), $p < 0.05$.

Conclusions: this investigation revealed that insulin resistance and beta cell function indexes are associated with the waist circumference, high-density lipoprotein cholesterol, very low density lipoprotein cholesterol, triglycerides and apoprotein B. However, in obese hypertensive patients with normoglycemia just function β-cells index is associated with high density lipoproteins and apoprotein B.

PP.19.15 IMPACT OF OBESITY ON THE RELATIONSHIP BETWEEN ELEVATED BLOOD PRESSURE AND CHRONIC KIDNEY DISEASE

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Objective: Controlling of blood pressure (BP) is a most important countermeasure against target organ damage in hypertension patients. The aim of this study was to assess the impact of obesity on the relationship between blood pressure control during 8-year follow-up and prevalence of chronic kidney disease (CKD) in prehypertension and hypertension.

Design and method: This study included 2,482 participants aged 40–69 with prehypertension or hypertension without type 2 diabetes mellitus (T2DM) at baseline examination of Korean Genome and Epidemiology Study. CKD was defined as glomerular filtration rate (eGFR) < 60 mL/min/1.73m^2. Controlled BP was defined as systolic BP < 120 mmHg and diastolic BP < 80 mmHg after 8-year follow-up. Multiple logistic regression analyses were used to identify the association between BP control and CKD.

Results: The prevalence of CKD after 8-year follow-up was 15.4%, and it was inversely associated with BP control (10.1% (controlled BP) vs 14.4% (uncontrolled BP), $P = 0.003$). However, in multiple logistic regression analysis, BP control was not associated with prevalent CKD after 8 years (Table). In subgroup of obesity, uncontrolled BP was significantly associated with prevalence of CKD (OR = 2.17, 95% confidence interval (CI), 1.06–4.43, $P = 0.034$) while in subgroups of overweight and normal weight, poorly controlled BP was not associated with CKD (OR = 0.55, 95% CI, 0.26–1.17 and OR = 0.53, 95% CI, 0.24–1.14, $P = 0.103$, respectively) (Table).

Table. Multiple logistic regression analyses for CKD with BP control according to obesity categories.

	Total (n=2,482)		Subgroup analysis					
			Normal weight (n=607)		Overweight (n=614)		Obese (n=1,261)	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
Controlled BP	1 (reference)	-	1 (reference)	-	1 (reference)	-	1 (reference)	-
Uncontrolled BP	1.15 (0.77, 1.73)	0.502	0.55 (0.26, 1.17)	0.121	0.53 (0.24, 1.14)	0.103	2.17 (1.06, 4.43)	0.034

Abbreviations: BMI, body mass index; OR, odds ratio; CI, confidence interval; BP, blood pressure; CKD, chronic kidney disease; Normal weight (BMI<23 kg/m^2), overweight (BMI≥23 and <25 kg/m^2), and obesity (BMI≥25 kg/m^2); Models were adjusted for age, sex, total cholesterol, fasting glucose, smoking status, family history of hypertension.

Conclusions: Our results indicated that the positive association between uncontrolled BP and CKD is accentuated with obesity. Weight loss, as well as BP control, in people with prehypertension or hypertension without T2DM is important to prevent CKD event.

PP.19.16 PARAMETERS OF THE METABOLIC SYNDROME IN PREHYPERTENSIVE SUBJECTS

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Objective: Insulin resistance has been found to be higher in hypertensive subjects. Whether this is also true in prehypertension is controversial. We examined both insulin resistance and lipidemic profile in subjects with prehypertension