P-599
ASSOCIATION BETWEEN BIOCHEMICAL PARAMETERS THAT CONSTITUTE METABOLIC SYNDROME X, BLOOD PRESSURE DURING TREADMILL TEST AND STRUCTURE AND FUNCTION OF LEFT VENTRICLE IN HYPERTENSIVE PATIENTS
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In order to elucidate association between parameters that constitute metabolic syndrome X, blood pressure (BP) during treadmill stress test (TST) and geometric adaptation and function of left ventricular we studied 140 individuals (46.9±11.7 years old; 78 men and 62 women), of them had uncomplicated essential hypertension and 72 were healthy matched controls. All underwent maximal symptom limited TST using the Bruce Protocol with simultaneously measurements of systolic (SBP), diastolic BP (DBP) and rate (HR). On echocardiographic examination the left ventricular mass (LVM), the LVMI index (LVM/Ht2.7) and the isovolumic relaxation time (IVT) were estimated. We also measured biochemical parameters related with metabolic syndrome X (glucose, triglyceride, total and HDL serum cholesterol) and parameters that express sympathetic activity (HR, cardiac output (CO), urine catecholamine/24hours). At the end, we correlated all those parameters. Main data are reported in the table:

<table>
<thead>
<tr>
<th>HYPERTENSIVES</th>
<th>CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>LVM</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>LVM</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>LVM</td>
</tr>
<tr>
<td>Catecholamine in 24hrs urine</td>
<td>DBP at max</td>
</tr>
</tbody>
</table>

where: DBP3 and DBP6: DBP at 3rd and at 6th minute of recovery, PBP: pulse BP, DBP6 and DBP9: DBP at 3rd and at 6th minute of TST, SBPR6: SBP at 6th minute of recovery, BMI: body mass index. It is concluded that biochemical parameters related with metabolic syndrome X are also related with DBP during TST and changes in the structure and function of left ventricle in hypertensive and normotensive people.

Key Words: Metabolic syndrome X, Blood pressure, Left ventricle

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RELATIONSHIP OF HYPERTENSION AND INSULIN SENSITIVITY WITH HEMODYNAMIC REACTIVITY TO LABORATORY STRESSOR
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Insulin sensitivity, part of the mosaic of factors in the etiology or hypertension, has profound effects on the cardiovascular system. This study examined hemodynamic reactivity to a laboratory stressor in subjects receiving a high carbohydrate (CHO) or low CHO diet.

Fifty subjects were studied on two occasions, four weeks apart. They were randomly assigned to receive a high CHO (75% of Calories) or low CHO diet. The study examined hemodynamic reactivity to a laboratory stressor in subjects receiving a high carbohydrate (CHO) or low CHO diet (35% of Calories) diet. Subjects were white (16), black (34), male (34), female (16), normotensive (33), or hypertensive (17). Subjects were further classified to high (23) or low (27) insulin sensitivity using a median split on the insulin sensitivity index (ISI120). Dependent measures were systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR), stroke volume (SV), cardiac output (CO), and total peripheral resistance (TPR). BP was determined with a Dinamap monitor, HR by ECG, and SV via impedance cardiography. CO and TPR were calculated. Reactivity is reported as the percent change in the dependent measures in response to speech stressor. Data were analyzed using a 2 (race) X 2 (gender) X 2 (hypertension diagnosis) X 2 (insulin sensitivity) X 2 (diet) MANOVA.

The analysis revealed a significant diagnosis X insulin sensitivity X diet interaction (p = .002). No significant effects were observed for race or gender. The subsequent analyses found no significant difference on the low CHO diet. On the high CHO diet the following were observed: SBP, no difference; DBP, normotensive had a larger response than hypertensives (p = .042); HR, SV, CO bigger response in the insulin sensitive subjects (p’s < .02); TPR responses were smaller in the insulin sensitive normotensives, unchanged in the insulin sensitive hypertensives, and larger in the insulin resistant subjects.

These findings indicate that under a normal to high glucose load, individuals who are insulin sensitive will respond to stress with increased cardiac responses. On the other hand insulin resistant subjects with hypertension meet the same challenge by increasing vascular resistance.

Key Words: Insulin Resistance, Stress, Cardiovascular Reactivity

P-600
BODY WEIGHT, 24-HOUR BLOOD PRESSURE PROFILE AND INSULIN RESISTANCE IN LEAN AND OVERWEIGHT HYPERTENSIVES AND NORMOTENSIVE CONTROLS
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The aim of the study was to examine the relationship between body weight, circadian blood pressure profile, pulse pressure and insulin resistance. The participants were divided into a lean group with a BMI<26 and the overweight group with a BMI≥26. Sixty-five overweight and 55 lean subjects (age 50.5±14.4 and 49.9±14.4, respectively) were included. Ninety five were hypertensives (SBP ≥140 mm Hg and/or DBP ≥90 mm Hg on three office measurements). They were kept off antihypertensive agents for at least 3 weeks before the study and then assigned to 24-hour ambulatory blood pressure monitoring (ABPM) and a 2-hour oral glucose (75g)-tolerance test (OGTT). We determined fasting glucose, insulin, and after glucose ingestion. Insulin resistance was estimated by fasting insulin, fasting insulin/gluose ratio, the areas under the curve (AUC) of insulin and insulin/glucose ratio, the homeostasis model insulin resistance index (Homa’s index) and the sum of plasma insulin levels 0,30,60, and 120min after the OGTT (ΔIRI).

Overweight subjects presented higher waist: hip ratio (0.897±0.090 vs 0.843±0.075, P<.001), AUC_inulin (78.8±56.3 vs 54.5±38.9μU/ml, P<.01), ΔIRI (269.4±197.3 vs 186.6±135.1μU/ml, P<.01), Homa’s index (5.22±3.97 vs 3.06±3.21, P<.05), SBP load (% of 24-hour SBP>140 mm Hg) (62.8±24.9 vs 51.0±29.6, % P<.01), and pulse pressure (64.9±13.3 vs 60.4±13.7 mm Hg, P<.01). Nondippers (n=41) compared with dippers presented higher pulse pressure (70.4±12.8 vs 59.0±12.4 mm Hg, P<.001), waist: hip ratio (0.894±0.088 vs 0.860±0.086, P<.05). BMI was positively related to AUC_inulin (r=0.358), ΔIRI (r=0.338) and Homa’s index (r=0.262), all of them P<.01. In conclusion, these data indicate that among normotensive and hypertensive overweight subjects the prevalence of insulin resistance, SBP load and wide pulse pressure were higher than in lean subjects, and that insulin resistance may have some relationship with nondipper profile.

Key Words: Overweight, insulin resistance, ABPM