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ATPIII-DEFINED METABOLIC SYNDROME IS ASSOCIATED WITH PREVALENCE OF LV HYPERTROPHY IN WHITE, BUT NOT IN AFRICAN AMERICAN, TREATED HYPERTENSIVES: THE HYPERGEN STUDY

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Metabolic syndrome (MS) is linked to cardiovascular risk. Recently published Adult Treatment Panel III (ATPIII) criteria provide a definition for diagnosis of MS. We analyzed the impact of the ATPIII-defined MS on left ventricular (LV) hypertrophy in treated hypertensive adults of the HyperGEN study. LV structure was examined by echocardiography in 912 treated hypertensive non-diabetic participants of the HyperGEN study (329 white and 583 African American), without prevalent cardiovascular disease. White participants were older (60±9 yrs vs 51±10 yrs; p<0.001) and had higher prevalence of MS (53.5% vs 36.2% p<0.001) as compared to African Americans. White participants with the metabolic syndrome (50% women) had similar age, blood pressure and heart rate as compared with non-MS participants (all p=ns). After controlling for type of hypertensive medication and gender differences, white MS participants exhibited similar LV diastolic diameter (p=ns), but higher values of relative wall thickness and LV mass/BSA as compared to non-MS whites (all p<0.05), with a significant higher prevalence of LV hypertrophy (27.4% vs 16.9%; p<0.05). African American participants with the metabolic syndrome (68.7% women) had similar age, blood pressure and heart rate as compared with non-MS participants (all p=ns). After controlling for type of hypertensive medication and gender differences, MS participants exhibited similar LV diastolic diameter, relative wall thickness, LV mass (all p=ns) as compared to non-MS. African Americans had a higher prevalence of LV hypertrophy (33%) than whites with no significant difference between the MS and the non-MS group.

In treated hypertensive patients, ATPIII defined metabolic syndrome has a higher prevalence in whites than in African Americans. Presence of the MS is also associated with a significant higher prevalence of LV hypertrophy in whites, while no significant effect is found in African Americans where the high prevalence of LV hypertrophy is independent of the presence of ATPIII defined MS.

Key Words: Metabolic Syndrome, Echocardiography, Ethnicity

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IMPACT OF BLOOD PRESSURE ON CARDIAC STRUCTURE AND CARDIOVASCULAR OUTCOME IN THE METABOLIC SYNDROME: THE STRONG HEART STUDY

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Metabolic syndrome (MS) is linked to cardiovascular risk. Adult Treatment Panel III (ATPIII) criteria provide a definition for diagnosis of MS. ATPIII defined non-optimal blood pressure (≥130/85mmHg) might provide effective partition to identify cardiac abnormalities in the presence of MS. Echocardiography was performed in 595 non-diabetic MS participants (31.5% men, 59±7.8 years) of the Strong Heart Study. Participants with the MS were divided according to the presence of non-optimal blood pressure (≥130/85mmHg). Comparison of quintiles of participants with non-optimal blood pressure was used to assess the effect of increasing values of blood pressure on cardiovascular structure and outcome. MS participants with non-optimal blood pressure (n = 369; 39% men) were older (61 vs 58 y, p<0.001), with no significant differences in body mass index, heart rate or fasting glucose compared to MS participants with normal blood pressure. After controlling for age and gender, non-optimal blood pressure was associated with higher left ventricular (LV) diameter, LV indexed mass (both p<0.001), as well as with higher relative wall thickness, reduced midwall shortening and prolonged mitral deceleration time (all p<0.05). In Cox regression analysis, controlling for age and gender, the presence of non-optimal blood pressure was independently associated with a higher rate of CV events (OR=1.58, 95%CI= 1.04 vs 2.42; p=0.039). Higher quintiles of blood pressure were associated with older age and higher body mass index (both p<0.01), with no significant differences in heart rate and plasma insulin or fasting glucose. After controlling for covariates no differences could be found in cardiac structure or function among quintiles of non-optimal blood pressure. Furthermore in Cox regression analysis, within participants with non-optimal blood pressure, higher blood pressure was not associated with a higher rate of CV events.

In the presence of MS, non-optimal blood pressure is related to abnormal LV geometry and function, and associated with increased risk for CV events. When MS is present, blood pressure ≥130/85mmHg is as effective a marker to identify individuals with cardiac abnormalities as is the traditional definition of hypertension in individuals without the MS, and should lead to more aggressive treatment.

Key Words: Metabolic Syndrome, Echocardiography, Outcome

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EFFICACY OF LOSARTAN IN HYPERTENSIVE OBESE PATIENTS

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Aim of the study was to compare the effect of losartan and felodipine on blood pressure (BP) and plasma norepinephrine (pNE) in hypertensive patients with obesity, a condition characterized by increased sympathetic activity.

Fifty-four obese patients (BMI > 30 Kg/m2) with mild to moderate hypertension (DBP evaluated with appropriate size cuff ≥ 95 mmHg < 110 mmHg) aged 32-58 years after a 4 week placebo period were randomized to Losartan 50 mg (n = 27) or to felodipine 5 mg(n = 27) for 16 weeks; after the first 4 weeks of treatment there was a titration with dose doubling in non responder (DBP > 90 mmHg) patients. At the end

<table>
<thead>
<tr>
<th>Status Post Test</th>
<th>Normal</th>
<th>High-Normal</th>
<th>Intolerance</th>
<th>Diabetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>23</td>
<td>11</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Age (y)</td>
<td>47 ± 20*</td>
<td>60 ± 11</td>
<td>63 ± 8</td>
<td>65 ± 11</td>
</tr>
<tr>
<td>Creat clearance</td>
<td>97 ± 30*</td>
<td>75 ± 29</td>
<td>70 ± 29</td>
<td>78 ± 34</td>
</tr>
<tr>
<td>EUA (mg/day)</td>
<td>6 ± 5</td>
<td>5 ± 3</td>
<td>20 ± 30</td>
<td>96 ± 208*</td>
</tr>
<tr>
<td>PWV (m/seg2)</td>
<td>13.8 ± 4*</td>
<td>18.0 ± 4</td>
<td>16.8 ± 4</td>
<td>19.1 ± 10</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>29 ± 4</td>
<td>29 ± 3</td>
<td>29 ± 3</td>
<td>32 ± 6*</td>
</tr>
</tbody>
</table>

* P < 0.05 vs. other groups

Key Words: glucose overload test, early target organ damage, pulse wave velocity