P56: ASSOCIATION BETWEEN URIC ACID AND CARDIAC, VASCULAR AND RENAL TARGET ORGAN DAMAGE IN HYPERTENSIVES SUBJECTS

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Abstracts

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In multivariable regression analysis, all four variables of SBPV 24-hour, daytime, or nighttime SBP and 2) weighted SD of 24-hour SBP. Moreover, variability (SBPV) is a prognostic factor for cardiovascular events in hypertensive subjects. Short-term blood pressure variability was defined as the difference between 10 pm and 6 am. The purpose of this study was to determine sex differences between day and night values of arterial wave reflection and the aim was to assess the relationship between short-term blood pressure variability and cardiovascular events in hypertensive subjects. It is noteworthy that blood pressure variability, especially during nighttime leading to highest values for women during the night. Thus, single patterns were not extensively investigated up to now. The aim of this study was to determine sex differences between day and night values of ambulatory central blood pressure as well as ambulatory pulse wave parameters related to arterial wave reflection.

Methods: A Mobi-OL Graph (EM, Stolberg) with built-in PWA technology was used in patients with antihypertensive treatment visiting a doctor’s practice for internal medicine. Aortic blood pressure was obtained using a generalized transfer function incorporating mean blood pressure for pressure calibration. Daytime was defined between 9 am and 8 pm and nighttime between 10 pm and 6 am.

Results: In the study, 132 men (mean age 50.5 years) and 155 women (57.3 years) were included. Men had higher central systolic (cSBP) and diastolic blood pressures compared to women. In contrast, augmentation index (Alx) and reflection magnitude (RM) were significantly lower in men compared to women both during day and night. For both sexes, Alx and RM were higher during the night, see table for full details (all day-night differences were statistically significant).

Conclusions: A typical blood pressure dipping during nighttime was found for both sexes. However, an increase in wave reflection parameters was found during nighttime leading to highest values for women during the night. Thus, single patterns were not extensively investigated up to now. The aim of this study was to determine sex differences between day and night values of arterial wave reflection and the aim was to assess the relationship between short-term blood pressure variability and cardiovascular events in hypertensive subjects.

Purpose/Background/Objectives: Hypertension is associated with several markers of subclinical organ damage (TOD). Short-term blood pressure variability (SBPV) is a prognostic factor for cardiovascular events in hypertensives. We hypothesised that there is a relationship between SBPV and TOD in never-treated hypertensives.

Methods: We enrolled 943 consecutive essential hypertensives (mean age 53 ± 12 years, 497 males). Markers of subclinical TOD [left ventricular mass index (LVMI), pulse wave velocity (PWV), total arterial compliance (TAC), aortic augmentation index (Alx/a075), ankle-brachial index (ABI) and estimated glomerular filtration rate (egfr)] and 24-h ambulatory blood pressure were evaluated in all patients. SBPV was calculated as follows: 1) SD of 24-hour, daytime, or nighttime SBP and 2) weighted SD of 24-hour SBP. Results: In multivariable regression analysis, all four variables of SBPV exhibited significant association with LVMI (p = 0.014, p = 0.002, p = 0.002 and p < 0.001, respectively), PWV (p = 0.021, p = 0.015, p = 0.055 and p = 0.006, respectively) and TAC (p = 0.048, p = 0.020, p = 0.036 and p = 0.006, respectively). In multivariable analysis, ABI and eGFR were not associated with indices of SBPV. We assessed TOD based on 2013 European Guidelines for Hypertension [left ventricular hypertrophy (LVMI > 115 g/m² in men and >95 g/m² in women), increased PWV (PWV > 10 m/s), increased Alx/a075 (Alx/a075 > 28%), decreased ABI (ABI < 0.9) and decreased renal function (eGFR < 60 ml/min)]. In multivariable logistic regression analysis, SBPV indices were not associated with markers of TOD (P > 0.05).

Conclusions: Our findings support a complex relationship between SBPV and TOD in hypertension. Specifically, SBPV is more closely related to markers of ventricular and vascular compliance than other markers of TOD in hypertension.

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ASSOCIATION BETWEEN URIC ACID AND CARDIAC, VASCULAR AND RENAL TARGET ORGAN DAMAGE IN HYPERTENSIVE SUBJECTS

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Background: To date no definitive results exist about the relationship of Serum Uric Acid (SUA) and TOD in HT subjects. We sought to determine if such an association exist between SUA and subclinical cardiovascular, vascular and renal alterations in HT.

Methods: We enrolled 632 consecutive outpatients, followed by the Hypertension Unit of S. Gerardo Hospital (Monza, Italy) affected by essential HT. We evaluated anamnestic data, clinical BP and laboratory data as well as TOD with cardiac echocardiography (both as LVMI and diastolic function – E/A), carotid ultrasound (IMT), arterial stiffness (PWV) and renal function analysis (creatinine and microalbuminuria).

Results: Age was 53 ± 12.7 years, SBP/DBP were 140.5 ± 18.8 and 85.1 ± 13.1 mmHg and SUA was 5.2 ± 1.4 mg/dL. Regarding TOD mean LVMI was 109.6 ± 31.4 g/m², IMT 0.7 ± 0.1 mm, PWV 8.5 ± 2.2 m/s, while creatinine and microalbuminuria were 0.8 ± 0.2 mg/dL and 25.4 ± 126.1 mg/24h respectively. When subjects were divided into high and low SUA group (depending on the median SUA of 5.2 mg/dL), with similar age and BP values the first group showed significantly higher values of metabolic index (BMI, HDL chl, triglycerides and glucose, p < 0.001), LVMI (117.1 ± 32.8 vs 102.1 ± 28.1 g/m², p < 0.01), IMT (0.73 ± 0.1 vs 0.70 ± 0.1 mm, p = 0.04), PWV (8.8 ± 2.4 vs 8.3 ± 2.1 mm/s, p = 0.01) and creatinine (0.9 ± 0.2 vs 0.7 ± 0.1 mg/dL, p < 0.01) and lower E/A (1.0 ± 0.3 vs 1.1 ± 0.3, p < 0.01). SUA showed significant correlation with sex, age, BMI, SBP, HDL chl, triglycerides, glucose, creatinine, IMT, LVMI and E/A. Regarding TOD only creatinine, triglycerides and glucose showed significant difference in logistic regression analysis.

Conclusions: In HT, SUA values correlate with metabolic derangements and with cardiac, vascular and renal TOD. The most significant correlation is with renal damage.

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ASSESSMENT OF PULSE WAVE VELOCITY AND ASSOCIATION TO TARGET ORGAN DAMAGE IN TREATMENT-NAIVE HYPERTENSIVE PATIENTS: A COMPARISON OF SYMPODCOR AND MOBIL-O-GRAF

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Introduction: Comparison of Mobil-O-Graph™ with Sphygmocor® exclusively in treatment- naive hypertensives has never been done. The aim of the study was to assess 1) intradevice agreement between both methods, 2) inter-device agreement between two surface measurements of Sc (subtracted distance (cpFWSub)) and direct distance > 0.8 (cpFWO,8)) with two patient’s positions of MG (supine (SUPFWestim)) and sitting (sitFWestim)), 3) the strength of association between tonometric and oscilometric measures of PWV with target organ damage (TOD).

Table 1: Mean values of both sexes during daytime and nighttime.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Day</th>
<th>Night</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>SBP (mmHg)</td>
<td>134.5*</td>
<td>130.2</td>
</tr>
<tr>
<td>Diastolic BP (mmHg)</td>
<td>75.2</td>
<td>77.1</td>
</tr>
<tr>
<td>CSBP (mmHg)</td>
<td>136.7*</td>
<td>131.5</td>
</tr>
<tr>
<td>AIx (%)</td>
<td>19.8*</td>
<td>28.2</td>
</tr>
<tr>
<td>RM</td>
<td>60.5*</td>
<td>63.4</td>
</tr>
</tbody>
</table>

* Indicates a significant difference between men and women (p < 0.05); bSBP = brachial systolic blood pressure, bDBP = brachial diastolic blood pressure, HR = heart rate, cSBP = central systolic blood pressure, AIx = augmentation index, RM = reflection magnitude.