We measured BP, systemic hemodynamics (thoracic bioimpedance, TBI), large (C1) and small artery (C2) elasticity (pulse contour analysis), global vascular compliance (stroke volume/pulse pressure (SV/PP)), renal function (GFR, iothalamate clearance) and cardiopulmonary volume (CVP, TBI) in ESLD (N=13), LTx (N=10) and NI controls (N=55) who were nonsmokers and age < 60 yrs.

<table>
<thead>
<tr>
<th>Vasculated (ESLD)</th>
<th>N1 Controls</th>
<th>Vasconstricted (LTx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP (mm Hg)</td>
<td>105 ± 4.02</td>
<td>118 ± 1.74</td>
</tr>
<tr>
<td>Cardiac index (L/min/m²)</td>
<td>3.7 ± 0.2**†</td>
<td>3.3 ± 0.1</td>
</tr>
<tr>
<td>SVRI (id/sec·cm⁻²·m⁻²)</td>
<td>1759 ± 131†</td>
<td>2245 ± 53</td>
</tr>
<tr>
<td>SV/PP (mL/mm Hg)</td>
<td>2.3 ± 0.2* (0.8)</td>
<td>2.0 ± 0.1</td>
</tr>
<tr>
<td>C1 (mL/min Hg × 10)</td>
<td>18.6 ± 2.0* (0.07)</td>
<td>15.6 ± 0.7</td>
</tr>
<tr>
<td>C2 (mL/min Hg × 100)</td>
<td>5.4 ± 0.6</td>
<td>6.2 ± 0.4</td>
</tr>
</tbody>
</table>

SVRI = systemic vascular resistance index
* P<0.05 vs LTx, † p<0.01 vs controls

Vasculated pts with low SVRI and elevated cardiac index had increased SV/PP and C1 vs LTx and controls. CPV was increased vs other groups (p<0.01). Vasconstricted pts were hypertensive with high SVRI, reduced SV/PP and C1. C2 was reduced and urinary microalbumin increased (8±2 mg ESLD to 54±15 mg LTx, p<0.01). Overall, C1 correlated with SVRI (r=0.26), SV/PP (r=0.54) and GFR (r=0.29), p<0.02 for all while C2 correlated with SV/PP (r=0.43), GFR (r=0.28) and microalbumin (r=0.25, p<0.03 for all). C2 was not related to SVRI yet correlated with C1 (r=0.43, p<0.01)

These results confirm that hepatic failure represents a state of systemic vasodilation and expanded volume. HTN after LTx reflects progressively reduced large and small artery compliance during immunosuppression with a calcineurin inhibitor. Multiple levels of vascular disturbance and the appearance of microalbuminuria suggest widespread endothelial dysfunction and both large and small vessel disturbances participate in this model of rapidly developing HTN after transplant.

Key Words: arterial compliance, hemodynamics, transplant hypertension

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CAROTID SINUS STIMULATION RESPONSES ARE MAINLY DETERMINED BY CAROTID ARTERY ELASTICITY STATUS IN ESSENTIAL HYPERTENSIVE SUBJECTS
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Carotid sinus stimulation (CSS) responses are associated with advancing age and carotid or coronary artery disease. We sought, in this study, to evaluate the relationship between the common carotid artery (CCA) elasticity and carotid sinus hypersensitivity in newly diagnosed hypertensive subjects. Towards this end, CSS with simultaneous recordings of the electrocardiogram (ECG) and blood pressure was performed in 102 untreated, newly diagnosed patients with stage I-II essential hypertension (aged 54±10 years, office BP=154/97 mmHg) who had no history of cardiac or vascular disease or syncope. Our study population was also consisted of 30 normotensive controls matched for age and sex. Cardioinhibitory type of CSS responses was evaluated by calculating an index, defined as the ratio of the longest R-R interval on the ECG recording during sinus massage to R-R interval at rest. Carotid distensibility was calculated as a function of changes in diameter (determined by echocardiography) and pulse pressure (determined sphygmomanometrically at the brachial artery) by the use of the formula: Distensibility = 2π(pulsatile change in diameter)/(diastolic diameter) x (pulse pressure). Patients and controls did not differ regarding demographic and laboratory data. Hypertensive subjects compared to controls had increased relative wall thickness (RWT) (0.48 vs, p<0.05), decreased carotid distensibility (1.2 vs 1.64 dyne·cm⁻¹·10⁻⁶) and increased CSS response index (1.74±1.03 vs, p<0.005). By a multivariate model including age, office pulse pressure, left ventricular mass index and CCA distensibility, it was revealed that only CCA distensibility was a significant determinant of CSS responses index (B=-.392.19, p<0.005). In conclusion, hypertension-induced alterations in carotid artery rigidity are accompanied by augmented CSS responses. The above data may contribute in the understanding of the underlying mechanisms between atherosclerotic disease and carotid sinus massage responses in the setting of essential hypertension.

Key Words: Carotid sinus responses

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PROGESTERONE ATTENUATES THE BENEFICIAL EFFECTS OF HORMONE REPLACEMENT THERAPY ON LARGE ARTERY ELASTICITY IN HYPERTENSIVE POSTMENOPAUSAL WOMEN

Nowadays, based mainly on the results of the Heart and Estrogen/ progestin Replacement Study (HERS), the cardiovascular beneficial effects of hormonal replacement therapy (HRT) on cardiovascular morbidity and mortality, are in doubt. In the present study we sought to define the possible differential effects of combined and uncombined HRT on large artery elastic properties in hypertensive postmenopausal women. Towards this end, we studied aortic compliance in 56 postmenopausal women (aged 52 years, 3.4 years after menopause) with untreated, mild essential hypertension. Our pooled population was randomized to conjugated estrogen alone (n=20), estrogen plus medroxyprogesterone (n=20) or placebo (n=16) and classified into three groups respectively. At baseline and after 12 weeks of treatment, we evaluated the aortic elasticity non-invasively on the basis of pulse wave velocity (PWV) measurements. In the entire study population BMI was 27.2 kg/m², office BP149/93 mmHg, left ventricular mass index (LVMI) 104±26 g/m², and mean plasma levels of total cholesterol 230mg/dl. At baseline the three groups were matched for age, time since menopause, smoking status, office blood pressure, BMI, LVMI and PWV values. At 12 weeks of treatment, in the women receiving estrogen alone, aortic PWV was significantly reduced (231 vs 209 cm/sec, p<0.005), while in the women receiving combined HRT or placebo, PWV did not change (232 vs 228 and 233 vs 230 cm/sec, respectively, p=NS for both cases). In all three groups, blood pressure and heart rate values did not change significantly after treatment. At baseline, aortic PWV had a positive correlation with the age of women (r=0.32, p<0.05) and LVMI (r=0.29, p<0.05). In conclusion, long-term combined HRT has no beneficial effects on the augmented large artery stiffness in hypertensive postmenopausal women. These findings confirm the view that progesterone may attenuate the beneficial effects of unopposed HRT on vascular function in the above-mentioned essential hypertensive patients.

Key Words: Large artery elasticity

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RELATIONSHIP BETWEEN CARDIOVASCULAR RISK FACTORS AND CAROTID ELASTICITY IN HEALTHY YOUNG ADULTS: THE BOGALUSA HEART STUDY
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Decreased arterial elasticity, indicating abnormal vascular function, has been associated with increased risk of cardiovascular disease in middle