P-675
COMPARATIVE EFFECTS OF DOXAZOSIN AND GUANABENZ ON VASCULAR INFLAMMATION AND COLLAGEN METABOLISM IN PATIENTS WITH MORNING HYPERTENSION
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Morning hypertension has a high correlation with cardiovascular events and the sympathetic nervous system plays a major role in the changes in morning blood pressure (BP). In the current study, we evaluated whether the blockade of sympathetic nervous activity reduces morning BP and arterial stiffness as a practical surrogate endpoint with alterations in vascular collagen metabolism and inflammation. Patients with high morning BP (>135/85 mmHg) and normal evening BP were randomized double-blind to either bedtime administration of doxazosin (DOX, n = 20), the selective alpha1-receptor blocker, or guanabenz (GUA, n = 12), the centrally acting alpha2-agonists, for 6 months. BP levels were evaluated by self-measured home BP monitoring in the morning and the evening. Arterial stiffness is evaluated by PWV at baseline (M0), at 2 months (M2) and at 6 months (M6). At the same time periods, serum levels of metalloprotease 2 (MMP-2), MMP-9, high-sensitivity C-reactive protein (hsCRP), interleukin 6 (IL-6) and interleukin 10 (IL-10) were determined. Morning BP, but not evening BP, was lowered significantly to the almost identical levels at M2 in both treatment regimens and remained stable thereafter. Both treatments significantly reduced PWV at M2 (DOX p < 0.01, GUA p < 0.05), and DOX improved it further at M6, whereas GUA did not, suggesting that a further decrease in arterial stiffness is independent of BP reduction in DOX. HsCRP levels were reduced significantly in both groups compared with baseline (DOX p < 0.01, GUA p < 0.05). Only DOX significantly enhanced serum IL-10 levels (p < 0.001) and reduced serum MMP-2 (p < 0.01), MMP-9 (p < 0.001) and IL-6 (p < 0.05). In conclusion, evening administration of DOX and GUA are both effective for reduction of morning BP. However, treatment with DOX for morning hypertension may reduce cardiovascular events through not only BP reduction but also improvements of collagen metabolism and inflammation in vascular wall.

Key Words: vascular collagen metabolism, vascular inflammation, doxazosin

P-677
BRACHIAL-ANKLE PULSE WAVE VELOCITY IS INDEPENDENTLY ASSOCIATED WITH CAROTID ATHEROSCLEROSIS IN HYPERTENSIVE PATIENTS
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Atherosclerosis is an emerging major risk factor for cardiovascular events in hypertensive patients. Carotid plaque score (PS) and carotid-femoral pulse wave velocity (cfPWV) have been shown to be good surrogate markers of systemic atherosclerosis. There are reports indicating that cfPWV is independently associated with carotid plaques. However, the relation between PS and brachial-ankle PWV (baPWV), which includes the information form the more distal limb, is not fully investigated. We investigated the association between baPWV and carotid plaque score (PS) in Japanese hypertensive patients.

In conclusion, the reason why we use CCB as a first line drug in the treatment of hypertension is that CCB has organ protection as “beyond blood pressure control”.

Key Words: vasculoprotection, azelnidipine, calcium channel blocker
pressures (OBPs) (SBP≥140mmHg or DBP≥90mmHg) at two visits with at least 2 week interval. And at the third study visit, we measured 3 consecutive OBPs. baPWV was used to assess aortic stiffness and measured using a volume-plethysmographic device (form PWV/ABI; Colin Co., Ltd., Japan). Carotid PS was assessed using 7.5-MHz B-mode ultrasonography. Lesions with an Intima-media thickness ≥1.1mm were defined as atheromatous plaques. Its score was calculated as summing all plaque thicknesses in both carotid systems. The associations of PS with age, sex, height, body mass index, hypercholesterolemia, diabetes, smoking habits, baPWV, mean 3 consecutive OBPs (mean BP) and pulse pressure (mean PP) were assessed by multiple regression analysis.

The table summarizes the results (β and p-values). Only baPWV show significant association with PS.

In conclusion, baPWV is independently associated with carotid atherosclerosis in hypertensive patients. baPWV could be used as an alternative indicator to carotid PWV for assessing systemic atherosclerosis.

### Variables Multiple Regression Analysis of PS

<table>
<thead>
<tr>
<th>Variables</th>
<th>β</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age(years)</td>
<td>0.138</td>
<td>0.293</td>
</tr>
<tr>
<td>Men gender</td>
<td>−0.134</td>
<td>0.384</td>
</tr>
<tr>
<td>Height(cm)</td>
<td>0.039</td>
<td>0.800</td>
</tr>
<tr>
<td>Body mass index(kg/m²)</td>
<td>−0.080</td>
<td>0.480</td>
</tr>
<tr>
<td>Hypercholesterolemia</td>
<td>0.131</td>
<td>0.198</td>
</tr>
<tr>
<td>Diabetes</td>
<td>0.060</td>
<td>0.558</td>
</tr>
<tr>
<td>Smoking habits</td>
<td>0.101</td>
<td>0.343</td>
</tr>
<tr>
<td>baPWV(cm/sec)</td>
<td>0.340</td>
<td>0.020</td>
</tr>
<tr>
<td>mean BP(mmHg)</td>
<td>−0.182</td>
<td>0.142</td>
</tr>
<tr>
<td>mean PP (mmHg)</td>
<td>0.109</td>
<td>0.408</td>
</tr>
</tbody>
</table>

β: standardized coefficient

Key Words: plaque score, pulse wave velocity, atherosclerosis

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### P-678

**DIABETES MELLITUS AND HYPERTENSION IN ELDERLY AFRICAN AMERICANS: ARE WE MEETING THE RECOMMENDED GOALS?**

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**Background:** Epidemiologic studies suggest that lower blood pressure treatment goals may have potential benefits for diabetics with hypertension. The blood pressure treatment goal for diabetics without macroalbuminuria is less than 130/85 mm Hg and less than 125/75 mm Hg for patients with diabetes and nephrotic syndrome. However, hypertension control in elderly African Americans with diabetes remains a challenge.

**Objective:** To determine the prevalence of hypertension among elderly African American patients with diabetes and to evaluate the prevalence of uncontrolled hypertension in this population.

**Methods:** A cross-sectional medical review of medical records for elderly diabetic patients receiving care between January 1 2003 and 30 December 2003 in a large, urban public hospital (Grady Memorial Hospital). The medical records of identified patients will be obtained and data will be abstracted by a trained coordinator.

**Patient Population:** Study subjects will consist of patients with a diagnosis of DM. We define DM as causal plasma glucose greater than or equal to 11.1mmol/l recorded at baseline examination, the use of insulin or hypoglycemic drug therapy and physician documented history of DM. Subjects identified as being diabetics will have their medical records reviewed for a diagnosis of Hypertension. We define as hypertension as blood pressure greater than 130/85 mm Hg in subjects without macroalbuminuria and 125/75 mm Hg for patients with diabetes and nephritic syndrome.

**Inclusion criteria will comprise the following:** Both male and female patients age >65 years of age and those all should be African Americans.

**Results:** Patients in these populations were less likely to meet the treatment goals for blood pressure management.

**Conclusion:** Studies have shown that controlling blood pressure in diabetics can lead to reduction in all cause mortality, myocardial infarction (MI), stroke, congestive heart failure (CHF) and microvascular diseases in diabetes. Interventions to improve blood pressure management in elderly diabetics are important to help reduce negative health consequences.

Key Words: DIABETES MELLITUS, HYPERTENSION, ELDERLY

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### P-679

**THE ADJUNCTIVE EFFECT OF CANDESARTAN TREATMENT IN HYPERTENSIVE PATIENTS WITH RESPONDER BLOOD PRESSURE REDUCTION**

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**Background:** The block of the renin-angiotensin system is one of the most significant hypertensive treatment. Monotherapy frequently of the angiotensin II receptor antagonists does not cause adequate blood pressure (BP) reduction.

**Methods:** We performed ambulatory BP monitoring (ABPM) twice before and after once-daily dose of candesartan therapy in 42 hypertensive patients and measured plasma and urine levels of neurohumoral factors. We compared the ABPM levels of the first time before and after a treatment and, on the other hand, compared the ABPM levels of the second time before and after a treatment. Therefore we reviewed it in 84 examples in total. Morning BP was defined as the average BP during the first 2h after waking.

**Results:** Candesartan reduced clinic, 24h and morning systolic BP and diastolic BP (p<0.0001). There were sixteen nonresponders for treatment. A baseline BP-dependent BP reduction was found for morning SBP (r=-0.41, p<0.001) but was not found for 24hr SBP (r=−0.14, ns). There were significant differences in conventional risk factors and neurohumoral factors between responders and nonresponders (figure).

**Conclusion:** Candesartan might obtain the reduction of morning BP. It is impossible to recognize the difference that the effect of BP reduction for angiotensin II receptor antagonists is accepted in patient background.

Key Words: angiotensin II receptor antagonist, ambulatory blood pressure