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Efficacy and safety of eplerenone compared to amlodipine in Chinese adults with hypertension: an 8-week, multicenter, randomized, double-blind, parallel-group study

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OBJECTIVES This study compares efficacy and safety of eplerenone with amlodipine among adults with hypertension in China.

METHODS This was an 8-week, multicenter, randomized, double-blind, active-controlled trial. After a single-blind placebo run-in period (12-16 days), patients with DBP 90–110 mmHg were randomized to 8-week, double-blind treatment with eplerenone (n = 120; 5-10 mg/d) or amlodipine (n = 120; 5-10 mg/d). The primary outcome measure was DBP decrease value. Other efficacy variables were changed from baseline in SBP, the rate of effective blood pressure control, and 24-h ambulatory BP parameters.

RESULTS Of 240 randomized patients, 222 (92.5%) completed the study. By the end of treatment, mean reductions from baseline of SBP and DBP in eplerenone and amlodipine groups were 15.8/11.7 and 15.73/11.53 mmHg, respectively (P > 0.05). There was no significant difference in the rate of effective blood pressure control between two groups at week 4 (69% VS 71%, P > 0.05) and week 8 (85% VS 86%, P > 0.05). In the subset of patients who underwent ambulatory BP assessments, eplerenone provided similar reductions to amlodipine in mean 24-h SBP/DBP (10.58/7.15 mmHg VS 12.37/8.60 mmHg, P > 0.05). In terms of safety and tolerability, there were no report of death and serious adverse event (SAE) in all subjects. The proportion of patients with adverse events (AEs) in 19.2%, amlodipine 20.8% with headache, dizziness, and nausea reported most frequently.

CONCLUSIONS Eplerenone and amlodipine provided comparable BP reductions and effective BP control and were well tolerated in Chinese adults with hypertension.

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Relationship of postprandial hypotension and carotid artery atherosclerosis in hypertensive patients

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OBJECTIVES It has not been understood that association of postprandial hypotension (PPH) with carotid artery atherosclerosis. The present study observed the prevalence and clinical characteristics of PPH in hospitalized patients with essential hypertensive (EH), and evaluated the relationship between PPH and carotid artery atherosclerosis.

METHODS One hundred and eighteen hospitalized patients with EH were recruited in this study. The blood pressures of all patients were measured at 5 minutes before meals and every 15 minutes interval within 2 hours after meals. The patients were divided into postprandial hypotension group (PPH, n = 83) and non-postprandial hypotension group (NPPH, n = 35) according to the magnitude of the fall in of systolic blood pressure (SBP) after meals. The high frequency ultrasonography was employed to detect the intima-media thickness (IMT) and plaque formation of carotid artery. Crouse score of plaque and grade score of carotid artery atherosclerosis were calculated.

The relationship of postprandial hypotension and carotid artery atherosclerosis were analyzed by statistical methods.

RESULTS (1) The prevalence of PPH in all patients was 70.3% (95% CI 62.1%–78.5%). The PPH prevalence at breakfast (50.1%, 95% CI 41.1%–59.1%) was greater than that at lunch (35.6%, 95% CI 27.0%–44.2%) and at supper (27.5%, 95% CI 19.7%–35.9%) (P < 0.0167). Moreover, the decrease of SBP and DBP after breakfast were more than those after lunch and after observed (P < 0.05).

(2) The detection rate of plaque(69.7%), number of plaque(n = 2–3), Crouse score of plaque(2–5) and grade score of carotid artery atherosclerosis(21–23) in PPH group were significantly increased than that in NPPH group (67.5% (1–0), (0–1), (0–1,0), (0–2–1)) (P < 0.05); There was significant difference in both hard plaque and soft plaque between PPH and NPPH group (P < 0.05); The prevalence of PPH(81.5%) and the drop amplitude of postprandial blood pressure(21.3±2.3) in the formation of carotid atherosclerotic plaque group were significantly increased than in the non-formation of carotid atherosclerotic plaque group(53.3%) (17.4±2.7).

(3) Logistic regression analysis results showed that the SBP before meal(OR = 2.30, 95% CI 1.32–3.99), the age(OR = 2.21, 95% CI 1.02–4.78), the grade score of carotid artery atherosclerosis(OR = 2.69, 95% CI 1.52–4.76) were independent predictors of PPH in patients with essential hypertension, respectively.

CONCLUSIONS The prevalence of PPH in hospitalized EH patients is common, and the prevalence of PPH and drop amplitude of blood pressure are the highest after breakfast. The severity of carotid artery atherosclerosis and hard plaque may be associated with increased prevalence of PPH in hospitalized patients with EH.

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The relationship of fasting glucose, blood pressure and homocysteine levels with brachial-ankle pulse wave velocity (baPWV) in Chinese hypertensive adults - CSPT

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OBJECTIVES This study aimed to investigate the effect of hyperhomocysteinemia and blood pressure (BP) on baPWV (a measure of arterial stiffness) in different fast glucose (GLU) levels in Chinese adults with hypertension.

METHODS The analyses included 4101 participants whose GLU, Hcy, BP and baPWV were measured, along with other important covariates (blood lipids and creatinine); and excluded 134 subjects with a history of diabetes mellitus or current use of anti-diabetes medication. GLU was analyzed as continuous variable and categorical variable: normal (blood lipids and creatinine); and excluded 134 subjects with a history of diabetes mellitus or current use of anti-diabetes medication. GLU (<7.0 mmol/L), impaired fasting glucose (NFG, GLU 7.0–11.0 mmol/L); and diabetes (DM, GLU >11.0 mmol/L). We performed correlation and multiple linear regression analyses to divide the subjects into 3 groups according to Hcy(<10.0 μmol/L; 10–14.9 μmol/L; ≥15.0 μmol/L) and tertiles according to SBP (T1: 108.7 mmHg; T2: 117.3 mmHg; T3: 127.7 mmHg ≥125.3 mmHg).

RESULTS When analyzed individually, GLU levels were positively associated baPWV value in a dose-response fashion, even after adjusting for age, sex, BMI, smoking, alcohol intake, SBP, DBP, heart rate, lipid, creatinine and study center.

However, the baPWV value in IFG group was not significantly higher than that in NFG group (P = 0.052). When analyzed jointly, the lowest value of baPWV (mean ± SD: 1773.0 ± 335.3) was observed in participants with NFG and Hcy <10.0 μmol/L; and the highest value of baPWV (2073.1 ± 479.8) was observed in participants with GLU >7.0 mmol/L and Hcy ≥15.0 μmol/L (β: 156.5, 95% CI: 89.2-223.8, P = 0.0001). The joint association of GLU and SBP was analyzed, the highest value of baPWV (2199.1 ± 470.1) was observed in participants with GLU ≥10.0 mmol/L and 172.7 mmHg ≥259.3 mmHg (β: 89.6, 95% CI: 19.5, 159.7, P = 0.03), and the lowest value (mean ± SD: 1676.5 ± 281.3) was in subjects with NFG and T1.

CONCLUSIONS In this large sample of Chinese adults with hypertension, GLU is still an risk factor for the increase of baPWV (arterial stiffness). Furthermore, high GLU and Hcy levels can jointly increase baPWV, and this phenomenon was also observed in subjects with high GLU and SBP levels. The findings underscore the importance of identifying people with high GLU and Hcy and blood pressure in order to initiate appropriate treatment to lower GLU and Hcy and blood pressure, especially SBP; to achieve better BP control; and to prevent adverse cardiovascular events.