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CLINICAL STUDY ABOUT EFFECT OF AMLODIPINE WITH COMPOUND AMILORIDE OR TELMISARTAN ON NON-INVASIVE CENTRAL AORTIC BLOOD PRESSURE AND VASCULAR FUNCTION

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Objective To observe the effect of amlodipine with compound amiloride or telmisartan on non-invasive central aortic blood pressure (CABP) and vascular function, and try to elucidate its internal relations and the possible mechanisms, which might guide the clinical management.

Methods 76 patients with hypertension were enrolled in this prospective randomised controlled clinical research, then divided into two groups randomly: group of amlodipine with compound amiloride (group A) or group of telmisartan (group B). Following parameters were examined at admission and after 1 year: blood pressure, central aortic blood

pressure, augmentation index, pulse wave conduction velocity, ankle-brachial index, carotid artery intima – media thickness. These patients were followed-up and collected clinical events regularly. Control goals of blood pressure are as following: the blood pressure goal of common hypertension should be lower than 140/90 mm Hg, if the hypertension patients with diabetes or kidney disease, the blood pressure should be lower than 130/80 mm Hg; The SBP goal of older hypertension patients should be lower than 150 mm Hg. Drugs used in this research are as follows: amlodipine (2.5 mg/tablet), compound amiloride (1 tablet: Ami 2.5 mg/Hydrochlorothiazide 25 mg), telmisartan (40 mg/tablet).

Results (1) As compared with admission, the blood pressure of two groups and the pulse pressure of group A decreased significantly ($P \leq 0.010$), but the pulse pressure of group B had no difference ($p = 0.077$); No significant differences were showed in two groups about BP and PP ($p < 0.05$). (2) The central aortic blood pressure of group A and B after treatment (137.82 ± 8.71 ; 135.56 ± 10.10) compare with admission (140.53 ± 8.18 ; 142.26 ± 11.92) decreased significantly ($p < 0.05$) and between two groups there are significant differences ($p = 0.032$). (3) The pulse wave velocity of group A and group B on the right and left side after treatment (1603.88 ± 244.38 , 1634.47 ± 274.61 ; 1538.22 ± 206.48 , 1556.22 ± 207.32) compared with before (1611.32 ± 272.85 , 1642.41 ± 288.11 ; 1619.74 ± 254.13 , 1654.74 ± 282.76) were lower, but the group A had no significant difference ($p > 0.05$) and group B had significant difference ($p < 0.01$). between two groups there was no significant difference ($p > 0.05$). (4) As compared with admission, the carotid intima – media thickness of two groups had increased, but no significant difference ($p > 0.05$) between the two groups there was no significant difference ($p > 0.05$).

Conclusion (1) Amlodipine with compound amiloride or telmisartan reduces blood pressure increasing similarly, but on the central arterial pressure and vascular function are different. (2) Amlodipine with compound amiloride or telmisartan can improve arterial compliance and delay the advancing of arteriosclerosis by blood pressure. (3) The group of telmisartan can reduce central aortic blood pressure lower and delay advancing of atherosclerosis more as compared with the group of compound amiloride. (4) With the improvement of PWV, CABP can be decreased. PWV with CABP might be used to estimate the effect of antihypertension.