little about large arterial properties associated with prehypertension in Chinese. **Design and methods:** In a military factory located in the Zhejiang Province, South-east China, we recruited 966 Chinese (mean age, 42.6 ± 14.2 years; 66% men) and performed various arterial measurements, including carotid ultrasonography with the ARTLAB system, radial pulse wave analysis and carotid–femoral pulse wave velocity (PWV) with the Sphygmocor system, and brachial–ankle PWV with the Omron VP1000 device. Prehypertension was defined according to the conventional blood pressures measured at the sitting and at supine positions. **Results:** Of 966 subjects, 189 (19.6%) had prehypertension, 264 (27.3%) were hypertensives, and 92 (34.8%) were on antihypertensive treatment. After adjustments for age, sex, body mass index, current smoking and drinking habit, total/HDL cholesterol ratio and serum blood glucose, subjects with prehypertension, compared to the normotensives, had significantly higher carotid intima–media thickness (593 vs 577 μm, P = 0.04), Young’s elastic modulus (238 vs 213 kPa; P = 0.03), central augmentation index (17.4% vs 14.4%; P = 0.01), carotid–femoral PWV (7.6 vs 6.9 m/s; P < 0.001), and brachial–ankle PWV (13.6 vs 12.2 m/s; P < 0.001), and significant lower carotid distensibility (47.3 vs 54.5 kPa-110; 3; P = 0.005). The large artery abnormalities were more evident (P < 0.05) in prehypertensive subjects carrying 2 or more risk factors compared to those without. **Conclusion:** Prehypertension was independently associated with large artery damage in Chinese, especially in subjects with multiple risk factors.

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**An association between aortic pulse pressure and estimated glomerular filtration rate in hypertensive patients**

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**Objective:** To investigate the relationship between aortic pulse pressure (PP) and estimated glomerular filtration rate (eGFR) in patients with essential hypertension. **Methods:** A total of 300 untreated hypertensive patients were consecutively recruited for a first diagnostic coronary angiogram. The following data were collected: invasive intra-aortic systolic and diastolic blood pressures, aortic PP, clinical and laboratory characteristics. **Results:** With the decline of eGFR, patients’ age, history of hypertension, A/E ratio and aortic PP were increased progressively (P < 0.05–0.01). Multivariable linear correlation and regression showed that: eGFR was significantly and negatively correlated with age, history of hypertension, aortic PP, left ventricular mass index, A/E ratio, fasting blood glucose, serum uric acid, total cholesterol and low-density lipoprotein cholesterol (r = −0.496, −0.236, −0.219, −0.218, −0.184, −0.163, −0.207, −0.177, −0.153, P < 0.05–0.01); eGFR was significantly and positively correlated with body surface area and aortic diastolic pressure (r = 0.256, 0.133, P < 0.05–0.01). **Conclusion:** Aortic PP is significantly and negatively correlated with eGFR, it is an independent effect factor to eGFR.

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**Activation of TRPV1 inhibits angiotensin II induced vasoconstriction in mice**


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**Objective:** We investigated the long-term effect of capsaicin, a transient receptor potential vanilloid 1 (TRPV1) agonist, on vascular reactivity in C57BL/6j mice. **Design and methods:** Two-month-old male C57BL/6j mice were fed with regular diet (control group, n = 12) and capsaicin-containing diet (capsaicin group, n = 12). Tail-cuff systolic blood pressure (SBP) was examined at the baseline and at the end of the intervention. After 6-month treatment with capsaicin, invasive carotid artery blood pressure and heart rate were measured, and the aortic contraction was examined using isotemic myograph (Danish Myotech Technology, Denmark). Plasma levels of renin, angiotensin II (AngII) and aldosterone were determined. Vascular smooth muscle cells (VSMCs) were obtained from thoracic aorta of mice and cultured by tissue explant method. Angiotensin II type 1 receptor (AT1R) protein expression was detected by western blotting. Cytosolic calcium level was detected in VSMCs using the fluorescent dye technique. **Results:** SBP, invasive carotid artery blood pressure and heart rate had no difference between two groups. Norepinephrine-induced contraction response in thoracic aorta was not different; while AngII-induced contraction of aortic ring was lower in the capsaicin group than control group (P < 0.05). Plasma levels of renin, AngII and aldosterone were not different between the two groups. Treatment with capsaicin significantly decreased AT1R protein expression and AngII-induced calcium entry in cultured VSMCs (P < 0.05). **Conclusion:** Long-term activation of TRPV1 with dietary capsaicin significantly blunted AngII-induced contraction response in aortic segments, which was related to the down-regulation of AT1R expression and reduction of AngII-induced calcium entry in VSMCs.

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