GW26-e4615
Decreased Mechanical Function of Left Atrium Assessed by Novel Echocardiographic Techniques in Patients with Suboptimal Blood Pressure Control
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OBJECTIVES Suboptimal blood pressure (BP) control is commonly observed in patients receiving antihypertensive agents, but it remains unknown the relationship between uncontrolled BP and early impairment of left atria (LA) function.

METHODS This study enrolled 276 hypertensive patients who had been medicated, as well as 42 matched normal controls. The BP of systolic-140mmHg and diastolic-90mmHg was defined as optimal (HTgp1, n=145), otherwise as suboptimal BP control (HTgp2, n=131). LA function was assessed by tissue Doppler imaging (TDI) and two-dimensional speckle tracking free strain, including Peak systolic (Vp), peak early ventricular diastolic (Ve), late ventricular diastolic (Va), peak early ventricular diastolic (Ve), and leaflet mitral (S) strain. RESULTS Despite a similar LA empty fraction, both hypertensive groups had a higher BP reading, a thicker interventricular septum (IVS) thickness, and LA volume index. Systolic BP, mmHg 122±12 130±10 p<0.001, compared with the control group. Diastolic BP, mmHg 76±8 80±10 p<0.001, compared with the control group.

CONCLUSIONS Hypertensive patients with early stage-1 hypertension could achieve goal of blood pressure. Additional perindopril therapy could achieve lower blood pressure with lower sensitivity C-reactive protein (hsCRP) and macrophage inhibitory factor (MIF) serum levels. But the difference was slight in perindopril therapy compared with the short period of follow-up (8 weeks). In order to further define the anti-inflammatory effect of life style hypotenser treatment on stage 1 hypertension patients, we extended the follow-up period to 1 year and monitored the above indexes.

METHODS 86 patients were enrolled into the study after signing informed consent and they were divided into lifestyle modification group (average age 56.1±6.7yrs) and perindopril therapy group (average age 56.1±6.7yrs) by matched pair design. Perindopril therapy was added in the latter group while both groups received lifestyle modification. Peripheral serum was collected at the time of enrollment, week 4, week 8, week 12, week 24, week 36 and week 48. ELISA was applied to determine the serum level of hsCRP and MIF. Patients’ financial expense on medication was recorded. Data was finally analyzed by SPSS 19.0.

RESULTS In the last year’s submission we showed that additional perindopril therapy led to better blood pressure control, with lower hsCRP and MIF but the difference was slight at week 4 and 8. After 1 year’s follow-up there were 8 lost cases (9.3%, 5 cases in lifestyle modified group v.s. 3 cases in perindopril therapy group) (P<0.05). There was still no significant difference of blood pressure between two groups at week 12 and week 24. At week 36 and week 48 perindopril therapy group showed lower systolic blood pressure (week 36: 110.4±8.4mmHg v.s. 127±8.0mmHg, week 48: 110.2±7.2mmHg v.s. 123.0±8.4mmHg) (both P<0.05). At week 24, 36 and 48, patients in perindopril therapy group presented lower levels of hsCRP (week 24: 3.42±0.29mg/L v.s. 2.92±0.32mg/L v.s. 2.71±0.12mg/L, week 48: 2.92±0.36mg/L v.s. 2.31±0.19mg/L, all P<0.05) and MIF (week 24: 7.22±0.19mg/L v.s. 5.1±0.16mg/L, week 48: 6.1±0.07mg/L v.s. 7.62±0.25mg/L, all P<0.05). Though it led to lower inflammatory markers, 8 adverse events were reported in perindopril therapy group, with 5 cases of non-infection correlated cough, 2 cases of orthostatic hypotension and 1 case of hyperkalemia. Also perindopril therapy group had significantly higher financial expense on medication (4108.35±98.30 RMB v.s. 253±20±7.50 RMB, P<0.05).

CONCLUSIONS Extended follow-up showed that lifestyle modification still improved blood pressure control and lowered inflammatory markers. Additional perindopril therapy could help to further alleviate inflammation status with the price of increased adverse events and financial expense. Personalized therapy was still advised in those hypertensive patients with high risk factors and high load of inflammation.

GW26-e3862
Prevalence of left atrial enlargement and its independent risk factors in rural Chinese population: An important but ignored condition
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OBJECTIVES To discuss prevalence of LAE and its independent risk factors in rural Chinese population.

METHODS This study included a total of 10574 subjects (4768 men and 5806 women) aged ≥35 years. Disease history and...
Cardiovascular risk factors were assessed in all patients. The multivariable logistic regression analysis was used.

**RESULTS** The overall prevalence of LAE was 15.45% for subjects aged over 35, 16.8% in the hypertensive patients. LAE was associated with age (OR: 1.052, 95% CI: 1.045 to 1.059), female (OR: 3.633, 95% CI: 4.247), SBP (for Grade 1 hypertension OR: 1.394, 95% CI: 1.20 to 1.618, for Grade 2 hypertension OR: 1.955, 95% CI: 1.615 to 2.366, for Grade 3 hypertension OR: 2.744, 95% CI: 2.146 to 3.509), anemia (OR: 1.655, 95% CI: 1.420 to 1.929), LVM (OR: 1.003, 95% CI: 1.002 to 1.004), mitral stenosis (OR: 20.892, 95% CI: 2.594 to 168.258) and mitral incompetence (OR: 3.476, 95% CI: 2.550 to 4.738), LVEF (OR: 0.971, 95% CI: 0.957 to 0.986).

**CONCLUSIONS** Age, gender, SBP, anemia, LVM, etc. are risk factors for LAE. It is urgent for us to detect and intervene LAE early, in order to reduce the severe events.

**GW26-e0006**

**Associations of plasma homocysteine and high normal blood pressure with arterial stiffness in Chinese healthy population: result from the China stroke primary prevention study (CSPPT)**

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**OBJECTIVES** Pulse wave velocity (PWV) as direct indication of arterial stiffness is a critical predictor of cardiovascular events, there is a lack of research on the correlation between plasma homocysteine (Hcy) and arterial stiffness in large community-based sample of the Chinese population.

**METHODS** Plasma homocysteine and other cardiovascular disease risk factor variables were measured in 2148 community healthy people enrolled in the CSPPT Study. Large-artery stiffness was assessed in terms of brachial-ankle PWV (baPWV).

**RESULTS** The mean age of the population was (62.5 ± 7.5) years, more females (63.8%) and their average Hcy level was (14.17 ± 7.5) mmol/L while average level of baPWV was (1586 ± 379) cm/s. BaPWV was positively correlated with Hcy in entire group after adjustment for age, gender and other CAD risk factors (βHcy=−5.32, p < 0.001). There was a significant interaction effect of the blood pressure (BP) on arterial stiffness, the impact of Hcy on baPWV of subjects with the high normal BP was more significant than that of individuals with the optimal normal pressure (βHcy=−2.55 vs. 9.88, p=0.004). We chose optimal BP group as a reference, in whole population PWV showed a significantly positive correlation with different level of BP; Normal BP (βBP=101, p < 0.001), high normal BP (βBP=193, p < 0.001), Grade 1 hypertension (βBP=−413, p < 0.001). Regression analysis of PWV between high normal BP and homocysteine revealed a significant interaction between BP level and Hcy on baPWV.

**CONCLUSIONS** Plasma Hcy was an independent correlate of arterial stiffness in Chinese healthy population. High normal blood pressure may worsen the impact of Hcy on arterial stiffness, and is a risk factor for arterial stiffness.

**GW26-e0108**

**A Preliminary Research on the Relationship of Serum Chloride with Severity of Obstructive Sleep Apnea in Hypertensive Patients**

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**OBJECTIVES** Our objective was to investigate the relationship between mutations of the KCNJ5 gene and clinical phenotype in patients with aldosterone-producing adenoma (APA).

**METHODS** 46 Patients with PA was recruited between 2008 to 2012 from the people’s hospital of Xinjiang Uyghur Autonomous Region. The surgical adrenal specimens and adjacent adrenal tissue were collected and stored in liquid nitrogen immediately after excision and maintained at −80°C. Genomic DNA was prepared from adrenal tissues and peripheral blood. and all exons including the 5’- and 3’- untranslated regions (UTRs) (−1kb) of KCNJ5 gene were PCR amplified, PCR products were sequenced using an optimized direct sequencing analysis protocol. Serum aldosterone, serum potassium, and creatinine levels were measured. The UV dimension was measured by Doppler echocardiography.

**RESULTS** Three missense mutations were found in tissues of 46 patients with APA: C451G→G (p.G151R), G151R and E529T. There is no significant difference between the wild type group and the mutation group on gender, age, hypertension duration, systolic blood pressure, diastolic blood pressure, serum K+, tumor diameter, seated ALD, seated AR, ARR, serum lipid, IVS, LVM, LVassed, LVesed and LVMi (p > 0.05). uric acid and EF showed significant difference between the wild type and the mutation group. Comparison of the baseline date among G151R, G151R and E529T. The patients with G151R mutation had higher SBP and DBP than the other groups.

**CONCLUSIONS** The mutational spectrum of the KCNJ5 gene might help to explain the differences in the clinical phenotype in patients with aldosterone-producing adenoma.