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 <140 mmHg and diastolic <90 mmHg 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 (V_s), peak early ventricular diastolic (V_e), late ventricular diastolic (V_a), Peak systolic (S_s), peak early ventricular diastolic (S_e), and late ventricular (S_a) strain.

RESULTS
Despite a similar LA empty fraction, both hypertensive groups had a higher BP reading, a thicker interventricular septum (IVS) and a larger LA mass index than the control group. The reduction of V_s, V_e, V_a, S_s, S_e, S_a was also obvious in the 2 groups. When compared between HTgp1 and HTgp2, the latter showed a more impaired V_e and S_e. (Table)

CONCLUSIONS
Hypertensive patients are associated with early impairment of LA myocardial function detected by TDI and free strain speckle tracking. Furthermore, early impairment of LA function could be a target of suboptimal BP control as these patients are associated with reduced V_e and S_e, therefore, more intensive therapy should be considered.

GW26-e1577
Serum Cystatin C as a Potential Predictor for the Progression of Prehypertension-to-Hypertension
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OBJECTIVES
Cystatin C (CysC) is considered to be a risk factor of cardiovascular diseases. However, the association between CysC and the progression of prehypertension-to-hypertension is not evaluated before.

METHODS
A total of 463 consecutive patients with prehypertension were enrolled. Serum CysC levels at baseline were measured via an immunoturbidimetric technique. Then, all subjects underwent a median three-year follow-up. The primary endpoint was the progression of prehypertension-to-hypertension diagnosed by upper-arm blood pressure monitoring. A proportional hazard regression analysis was implemented to model the interval-censored progression-free survival time data. Receiver operating characteristic curves (ROC) and multivariate logistic regression analysis were used to evaluate the predictive value of serum CysC.

RESULTS
At last, a total of 124 prehypertensive patients progressed to hypertension, with a progression rate of 26.78%. Serum CysC levels were positively associated with the progression rate (hazard ratio: 1.82, 95% CI: 1.32-2.13). Multivariate logistic regression analysis considered that increased baseline serum CysC level [OR=1.385 (1.025, 2.835), p=0.001] was an independent predictor for the progression of prehypertension-to-hypertension. ROC analysis showed that the AUC of serum CysC for predicting the progression of prehypertension-to-hypertension was 0.824 (95% CI: 0.743-0.912), with an optimum cut-off of 1.18 mg/dL.

CONCLUSIONS
Serum CysC might serve as a potential predictor for the progression of prehypertension-to-hypertension.

GW26-e2329
Lifestyle Modification Combined with Perindopril Therapy on hsCRP and MIF Serum Levels in Patients with Stage 1 Hypertension: 1-year Follow-up
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OBJECTIVES
Last year we reported that lifestyle modification in patients with 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 and might be associated with the short period of follow-up (8 weeks). In order to further define the anti-inflammatory effects of hypotension 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 modification 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 showed lower systolic blood pressure (week 36: 110.4±8.4mmHg v.s. 128.5±6.9mmHg, week 48: 110.2±7.2mmHg v.s. 123.0±4.8mmHg) (both P<0.05). At week 24, 36 and 48, patients in perindopril therapy group presented lower levels of hsCRP (week 24: 3.10±0.12mg/L v.s. 3.42±0.29mg/L, week 36: 2.92±0.31mg/L v.s. 3.37±0.17mg/L, week 48: 2.71±0.12mg/L v.s. 3.31±0.19mg/L, all P<0.05) and MIF (week 24: 7.22±0.39μg/L v.s. 8.01±0.46μg/L, week 36: 6.88±0.24μg/L v.s. 7.85±0.16μg/L, week 48: 6.16±0.37μg/L v.s. 7.62±0.25μg/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 (140.55±98.30 RMB v.s. 253.20±72.50 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 was a study including a total of 10574 subjects (4768 men and 5806 women) aged ≥35 years. Disease history and