control at the mean time. Patients' height, body weight, systolic blood pressure (SBP), diastolic blood pressure (DBP) were recorded. VOI=1.33*SBP-0.33*DBP+133.3mmHg. Fasting blood glucose, blood lipid profile, liver and renal functions, routine blood test and fibrinogen were also determined. Flow mediated dilation (FMD) of brachial artery (BA) induced by reactive hyperemia was examined by high-resolution vascular ultrasound. The intima media thickness of bilateral carotid artery was also measured. CA-IMT was defined as 1.5mm with any presence of plaque on either side of the carotid artery. All patients underwent echocardiographic exam to detect LVMI.

### Results

Stepwise multiple regression analysis showed that VOI was an influencing factor for CA-IMT in all subjects. For an increase of 10mmHg of VOI, CA-IMT was thinned by 0.05mm, so as in EH patients. After stratification of age, sex and risk factors, VOI was found to be a persistent influencing factor for CA-IMT in hypertensives.

### Conclusions

VOI was an important influencing factor for CA-IMT in EH patients.

GW25-e0433

Study on Correlation between Depression Severity of Primary Hypertension Patients and Level of Serum Homocysteine

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#### Objectives

This study mainly aims to provide an understanding of the status of patients, who got to a doctor for fluctuation of blood pressure and suffer from primary hypertension combined with depression, and to shed some light on the correlation between the depression severity and biochemical indexes including the Hcy levels.

#### Methods

We use the Patient Health Questionnaire-9 (PHQ-9) to evaluate 165 cases of primary hypertension patients who have been treated with conventional therapy for nearly one week but still suffer from dysarthrotery. According to the results, the cases are divided into three groups, with 34 cases in Group I (without depression), 88 cases in Group II (mild or moderate depression) and 43 cases in Group III (moderately severe depression). Comparisons are made among the three groups in terms of the level of Hcy, LDL, HDL, hs-CRP and FIB. In addition, we make correlation analysis and regression analysis of the scores of PHQ-9 and GAD-7, age, Hcy, LDL, HDL, FIB, hs-CRP.

#### Results

(1) Differences as a result of comparison among the GAD-7 scores and the Hcy levels of the three groups respectively have statistical significance (P<0.05 in all cases). The comparison result indicates that, in terms of the GAD-7 score, difference between Group III and Group I is the biggest (4.71±0.69), followed by the difference between Group II and Group I (3.50±0.56), while the difference between Group I and II is the smallest (-1.15±0.60).

(2) The PHQ-9 score is correlated with age, GAD-7 score and Hcy level (with the correlation coefficient of 0.158, 0.581 and 0.196 respectively and all P<0.05). The GAD-7 score is correlated with the Hcy level (with the correlation coefficient of 0.206 and the P<0.05). (3) Taking the PHQ-9 score as the dependent variable and the GAD-7 score, age and levels of Hcy, LDL, HDL, FIB, hs-CRP as the independent variables, a logistic regression analysis is made and the result indicates that the GAD-7 score, age and the Hcy level enter the regression equation.

#### Conclusions

The Hcy level is a key factor impacting the primary hypertension patients with depression and is positively correlated with depression severity, with more severe depression for higher Hcy level. More attention should be given to the mental health of the primary hypertension patients.

GW25-e0791

Role of AT1 blockade on cardiac ACE2 and mas expression in hypertensive rats

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#### Objectives

Inter-regulation between components of the renin-angiotensin system (RAS) is common, but little is known about the direct regulatory roles of cardiac ACE2 and Mas expression. This study was to determine if the cardiac ACE2, ACE and Mas levels change in hypertensive rats treated with AT1 blocker, losartan and ACE inhibitor, enalapril.

#### Methods

Forty rats were divided into 4 groups: sham operated (n=10), rats with the aortic ligation (AL, n=10), AL rats fed enalapril (20mg kg^-1 d^-1, n=10), and AL rats fed losartan (30mg kg^-1 d^-1, n=10). MAP was registered using a tail-cuff method. After 4 week treatment, levels of ACE2, ACE and Mas receptor in the heart were examined by RT-PCR, western blot and immunohistochemistry.

#### Results

Cardiac ACE mRNA and ACE protein levels were greater in AL rats than in controls (P<0.05). In AL rats with enalapril treatment, cardiac ACE mRNA and its protein levels were decreased (P<0.01). Cardiac ACE2 levels were lower in AL rats than in controls (P<0.01). Both enalapril and losartan increased the levels of cardiac ACE2 expression and decreased MAP, however, losartan seemed more efficient in control of MAP compared to enalapril. Interestingly, Mas mRNA rose in AL rats treated with losartan, but not with enalapril.

#### Conclusions

Our findings demonstrate that enalapril and losartan increase the ratio of cardiac ACE2/ACE levels. Losartan significantly elevates the cardiac Mas expression, but not enalapril. These results indicate that the protective effect of AT1 blockade on the heart may occur by increasing the activity of the cardiac ACE2-Ang (1-7) -Mas axis of the RAS.

GW25-e1075

The incidence of cough in hypertensive population treated with ACEI (Lisinopril)

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#### Objectives

To observe the incidence and start time of cough in hypertensive popula-

GW25-e1665

Association between Plasma Homocysteine Levels and Blood Pressure Variability in Patients with Primary Hypertension

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#### Objectives

To investigate the association between homocysteine (Hcy) level and blood pressure variability (BPV) in patients with primary hypertension.

#### Methods

A total of 154 patients diagnosed with primary hypertension (mean age: 56.48±7.95 years; 103 males) were enrolled. All patients underwent blood sample tests and 24h ambulatory blood pressure (ABP) monitoring and were divided into two groups according to their Hcy levels: normal-Hcy group (n=79) and high-Hcy group (n=75). Indices including age, gender, smoking history, blood biochemical test data, and ABP, were statistically compared.

#### Results

The percentage of male patients in the high-Hcy group (82.7%) was significantly greater than that in the normal-Hcy group (P<0.001). No office BP data differed significantly between the two groups. In the high-Hcy group, the night-time SBP variability (14.67±5.74 mmHg) was significantly higher than in the normal-Hcy group (P=0.034). In addition, the morning pressure surge in the high-Hcy group (20.62±15.01 mmHg) was significantly higher than in the normal-Hcy group (P=0.001). Further, multiple linear regression showed that the interaction between Hcy and the night-time SBP variability or the morning pressure surge was still significant after adjusting for the effect of age, gender, smoking and laboratory data. The night-time DBP variability and the morning pressure surge were both positively and significantly related to Hcy (P=0.022 and P=0.005, respectively).

#### Conclusions

Plasma Hcy levels were associated with the variability in night-time SBP and the morning pressure surge in hypertensive patients. These findings suggest that increased night-time BPV and morning pressure surge may be a mediator for the link between hyperhomocysteinemia and target organ damage.

GW25-e2165

Left Ventricular Function Changes along with the Hypertension Progress in 2k2c Rats

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#### Objectives

Cardiac remodeling and myocardial dysfunction come with hypertension is well known. However it is not clear what is going on with hypertension developed.

#### Methods

We use the Patient Health Questionnaire-9 (PHQ-9) to evaluate 165 cases of primary hypertension combined with depression, and to shed some light on the correlation between hyperhomocysteinemia and target organ damage.

#### Results

Fifty male and 47 female with the course of hypertension from 5 months to 26 years were enrolled. The average age was 48.40±8.87 years. The BP after enalapril was 138.79±14.29/94.42±6.88 mmHg (sitting posture) and (139.28±15.50/98.11±8.38) mmHg (standing posture). The pulse was 72.25±6.61/min (sitting posture) and 73.75±6.72/min (standing posture). There were 42 patients (22 male and 19 female) happen to cough after admitted Lisinopril. The incidence of cough adverse effect was 44.0% in male and 42.55% in female with single Lisinopril treatment. Cough present was high in 10 days (0.73±0.56) with cough adverse effect was 42.55% in female and 44.0% in male. The incidence of cough adverse effect was different in age, gender or the course of hypertension. Careful clinical observation is recommended when Lisinopril or other ACEI has to be prescribed.