were never treated in the past or didn't receive medical treatments in recently four weeks. All the patients provided detailed information of history of illness, received carefully physical and laboratory examinations and were performed ambulatory blood pressure monitoring (ABPM) and ambulatory electrocardiogram (ECG) recording meanwhile. We collected carotid ultrasonography, brachial-to-ankle pulse wave velocity (ba-PWV) and ankle brachial index (ABI) from most of these patients. All patients were divided into the MBPS group, which was defined as having the highest quartile of morning BP increase from sleep (≥28.67mmHg; n = 44) and the non-MBPS group(<28.67mmHg; n = 116). And then we compared all indexes between these two groups.

RESULTS MBPS was correlated positively with day-night systolic blood pressure (SBP) dipping (r = 0.5, p<0.001).And the circadian blood pressure pattern was mostly dipper in MBPS group, while non-dipper in non-MBPS group. Compared with patients in non-MBPS group, those in MBPS group had higher 24 hours systolic blood pressure variability (24h-SBP-BPV), 24 hours diastolic blood pressure variability (24h-DBP-BPV), nighttime systolic blood pressure variability (N-SBP-BPV) and nighttime diastolic variability (N-DBP-BPV). And their correlation coefficients with MBPS were 0.325,0.315,0.316 and 0.286 respectively (p <0.001). After adjustments for factors associated with MBPS these correlations still existed significantly, except for N-DBP-BPV. The morning heart rate surge (MHRS), the 24 hours mean systolic blood pressure (24 h-SBP) profile and daytime mean diastolic blood pressure (D-SBP) profile were higher in the MBPS group than in the non-MBPS group (MHRS: 15.81 ± 6.86 bpm versus 13.22 ± 7.11 bpm, p<0.05; 24h-SBP: 136.41 ± 16.32 mmHg versus 130.41 ± 15.93 mmHg, p<0.05; D-SBP:140.52 ± 16.44 mmHg versus 131.76 ± 17.34 mmHg, p <0.05) and they all had no linear correlations with MBPS.

CONCLUSIONS In young and middle-aged essential hypertensive patients, the day-night SBP dipping, 24h-BPV and N-BPV may be important factors associated with MBPS. Compared with DBP-BPV, SBP-BPV has greater influence on MBPS. 24h-BPV also has more influence on MBPS than N-BPV. Meanwhile, we also find that MHRS is related to MBPS. Therefore, we speculate that in these young and middle-aged essential hypertensive patients, sympathetic nervous system activation may be the main mechanism underlying MBPS. Moreover, 24h-SBP and D-SBP also have an effect on MBPS to some extent.

GW26-e2487

Clinical Analysis of Primary Aldosteronism with Hypertension

Shangyan Liang,[1] Xubin Yang,[2] Sihui Luo,[2] Yina Wang,[1] Qiongli Yin,[1] Xiaoming Ye[1]
[1]Special Medical Treatment Center, The Third Affiliated Hospital of Sun Yat-sen University; [2]Endocrinology Department, The Third Affiliated Hospital of Sun Yat-sen University

OBJECTIVES To evaluate the clinical characteristics of primary aldosteronism (PA) with hypertension.

METHODS From 2002 to 2015, 56 patients with PA were diagnosed according 2008 American endocrine society clinical practice guideline about PA. Clinical profiles and fasting serum sodium, potassium, aldosterone level, plasma rennin activity, angiotensin level, aldosterone-to-rennin activity ratio(ARR), cystatin C(CysC) and β2-microglobulin (β2-M) were recorded and analyzed.

RESULTS Of these patients, age of diagnosis was (48.9±12.4) years, 62.5% were male, 69.6% were aldosteronoma, 30.4% were idiopathic aldosteronism. Course of hypertension was (5.36±5.24) years, in which 27.8% were less than 1 year, 33.3% were 1-5 years, 29.6% were 5-10 years, 9.3% were over 10 years. The prevalence of 1, 2, and 3 stage hypertension in these patients was 61.1%, 29.6%, and 9.3%, respectively. It was found that systolic blood pressure (166.5±20.4) mmHg, diastolic blood pressure (94.3±16.7) mmHg, PRA(0.30±0.29) ng/ml/h, aldosterone level(26.1±17.3) ng/dl, angiotensin II level (115.5±103.9) pg/ml, ARR (107.17(45.28, 560.17)). The incidence of hypokalemia, hypernatremia and arteriosclerosis was 64.8%, 20.4%, 39.3%, respectively. Correlation analysis showed that the course of PA was positively correlated with CysC, β2-M, serum sodium (r=0.348, r=0.453, r=0.401, P<0.05), negatively correlated with serum potassium (r= - 0.277, P<0.05). It was also shown that diastolic blood pressure was positively correlated with aldosterone level (r= 0.282, P<0.05).

CONCLUSIONS Primary aldosteronism with hypertension was more likely to happen in middle-aged men due to aldosteronoma, manifested as mild to moderate hypertension, with relatively long course before diagnosis which may affect several related factors.

GW26-e1004

A study of relation between plasmic Brain Natriuretic Peptide and Essential Hypertension (EH) Target-organ Damage

Ping Yang, Xiaohua Dong, Qingyuan Dai, Qixian Wang
Department of Cardiology, The first affiliated Hospital of Kunming Medical University

OBJECTIVES To investigate the association between plasmic Brain Natriuretic Peptide (BNP) and essential hypertension (EH) Target-organ Damage (TOD).

METHODS We studied 83 never-treated patients with essential hypertension and 20 normal subjects. Hypertensive patients were divided into two groups. one group was 68 patients with target-organ damage and the other was 15 patients without target-organ damage(pure hypertensive patients). Then 68 patients with TOD were subdivide into subgroups: with 30 left ventricular hypertrophy(LVH), 10 carotid artery wall thickening, 10 renal damage and 18 stroke. All subjects received general situation, blood pressure, fasting plasma glucose and blood lipid levels, liver function, renal function, urinary albumin, a standard 12-lead ECG, 24-hour blood pressure, echocardiography, carotid ultrasonography and cerebral CT or MRI so on. The plasmic BNP quantity were measured by Enzyme-linked immunosorbent assay(ELISA).

RESULTS 1.The plasma level of BNP was elevated in the essential hypertension(EH) group than normal subjects(P<0.05). 2.essential hypertension with target organ damage in each subgroup of plasma BNP levels were higher than in pure essential hypertension group and normal control group, the differences were statistically significant (P<0.05). And the plasma BNP level comparison among various subgroups of essential hypertension with target organ damage, there were no statistically significant difference (P>0.05). 3.In patients with LVH correlation analysis showed that: The plasma level of BNP took positive correlation with left ventricular mass index(LVMI) (r=0.693, P<0.01), took inverse correlation with LVEF(r=-0.768, P<0.01).

CONCLUSIONS These results indicate that BNP is related to the occurrences and developments of essential hypertension and target-organ damage, may become a no-traumatic laboratory indicator in the process of essential hypertension diagnosis and treatment. It has a positive meaning in the disease of changes and prognosis assessment to guide clinical treatment through measuring BNP levels in patients with hypertension and target-organ damage.

GW26-e4665

Efficacy of different doses atorvastatin on the blood pressure: a Meta-analysis

Huanhuan Zhao, Yuemin Sun
Tianjin Medical University General Hospital

OBJECTIVES Although the effects of statins on blood pressure has been confirmed, the efficacy of different dose atorvastatin on blood pressure remains controversial. Our meta-analysis was performed of different dose atorvastatin on blood pressure in humans including the randomized, controlled trials of atorvastatin therapy.

METHODS We collected data from twenty-seven randomized control trials of atorvastatin that had the blood pressure reported as one of the endpoints. Weighted Mean Difference(WMD) was used as a measure of the effect of atorvastatin on blood pressure.The analysis was further stratified by factors that could affect the treatment effect.

RESULTS We found that systolic blood pressure (SBP) in the atorvastatin group decreased by 3.14 mmHg (95% confidence interval [CI]:2.13 to 4.15 mmHg) and diastolic blood pressure (DBP) by 1.35 mmHg (95% CI: 0.78 to 1.92 mmHg). In 10mg atorvastatin groups, SBP decreased by 1.17 mmHg (95% CI: 0.22 to 2.13 mmHg), but DBP had no change (DBP: 0.17 mmHg; 95% CI:-0.64 to 0.98 mmHg). In 20mg atorvastatin groups, SBP decreased by 5.82 mmHg (95% CI: 2.32 to 9.32 mmHg) and DBP by 2.93 mmHg (95% CI: 1.11 to 4.75 mmHg). In 40mg atorvastatin groups, SBP decreased by 3.58 mmHg (95% CI: 0.10 to 7.06 mmHg) and DBP by 2.76 mmHg (95% CI: 0.38 to 5.14 mmHg). In 80mg atorvastatin groups, SBP decreased by 2.98 mmHg (95% CI: 2.12 to 3.84 mmHg), but DBP had no changes (DBP: 0.24 mmHg, 95% CI: -2.72 to 3.20 mmHg).

CONCLUSIONS Our findings indicated that different dose atorvastatin therapy has a relatively small but statistically significant and clinically meaningful effect on blood pressure.