GW26-e2404

Compare of blood pressure control between CCBs and non-CCBs agents combined with tacrolimus in post transplantation hypertension patients

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Objective: To investigate the blood pressure control situation of calcium channel blocker (CCBs) and non-CCBs antihypertensive agents combined with tacrolimus in post transplantation hypertension (PHT) patients.

Methods: To compare 284 cases treated with tacrolimus. Hypertension was defined as systolic blood pressure (SBP) greater than 140 or diastolic blood pressure (DBP) greater than 90 mmHg, or the routine use of antihypertensive agents. The comparison included mean arterial blood pressure, heart rate variability, echocardiography, and noradrenaline level. The safety assessment included any adverse events during the study. The efficacy objective was a decrease in the mean 24-h ambulatory BP at 6 months. The safety objective included any adverse events during the study. The primary efficacy objective was a decrease in the mean 24-h ambulatory BP at 6 months. The secondary objectives included heart rate variability, echocardiography, and noradrenaline level. All patients that received noninvasive HIFU-based renal denervation (n=18) were well tolerated by all patients. The mean HIFU ablation time (9.36±1.14) was changed more obviously in non-dipper group (8.38±0.88) m/s, P<0.01. Some factors including mSBP, SBPF, LDI-C, nDBP affected crPWV. AUG and AI was affected by SBPF, DBPF, 24 h SBP, TCG.

Conclusions: The abnormal rhythm of 24h ABPM lead to transformation of arterial function in prehypertensive old patients, and was greater correlated with AUG, AI and crPWV.

GW26-e4377

Correlation between 24h ABPM rhythm and central blood pressure, arterial function in prehypertensive old participants

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Objective: To investigate the correlation between 24 hours ambulatory blood pressure monitoring rhythm and central blood pressure, arterial function in prehypertensive old participants.

Methods: To divide into two groups, namely, normotensive controls, dipper and non-dipper group respectively, 24 hours ABPM, central blood pressure and crPWV were tested for all subjects.

Results: 24 hours systolic blood pressure (122.00±9.74) mm Hg was higher in non-dipper group than in dipper group (116.74±8.66) mm Hg, P<0.05. In accordance with systolic blood pressure fall, diastolic blood pressure, nocturnal systolic blood pressure, nocturnal diastolic blood pressure were significant difference between non-dipper group and dipper group (P<0.01). Central arterial augmentation pressure was 19.0 min, and the acoustic energy was 293.8 kJ. The BP significant decreased compared with the baseline values after treatment (24h-ambulatory BP decreased -11.4/-4.8 mmHg (P<0.005) and of increase of heart rate variability, echocardiography, and noradrenaline level. The safety objective included any adverse events during the study. The primary efficacy objective was a decrease in the mean 24-h ambulatory BP at 6 months. The secondary objectives included heart rate variability, echocardiography, and noradrenaline level. All patients that received noninvasive HIFU-based renal denervation (n=18) were well tolerated by all patients. The mean HIFU ablation time (9.36±1.14) was changed more obviously in non-dipper group (8.38±0.88) m/s, P<0.01. Some factors including mSBP, SBPF, LDI-C, nDBP affected crPWV. AUG and AI was affected by SBPF, DBPF, 24 h SBP, TCG.

Conclusions: The abnormal rhythm of 24h ABPM lead to transformation of arterial function in prehypertensive old participants, and was greater correlated with AUG, AI and crPWV.

GW26-e4515

Left ventricular diastolic dysfunction with hypertension is related with SDC-4 increased in 2K2C rats

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Objective: Our previous research found that with hypertension developed, cardiac remodeling and myocardial dysfunction were worse gradually. However it is not well clear that the relation among the cardiac fibrosis in hypertension, the cardiac fibrosis and the inflammation. Our study is to evaluate their relations in two kidney-two clip (2k-2c) rats.

Methods: Sprague-Dawley male rats (32) were divided into a 2K2C hypertension group (n=16) and a sham-operated group (n=16) for 12 weeks. Blood pressure, weight, cardiac morphological changed and left ventricular ejection fraction, and diastolic function indexes were recorded at 1w, 4w, 8w and 12w. Meanwhile, Hematoxylin-Eosin stain and Masson's trichrome stain for fibrosis were performed for histological observation of fibrotic processes. Syndecan-4, one of the crucial inflammatory factors, was measured in serum by enzyme-linked immunosorbent assay.

Results: The results of ultrasound indicated that IVST, LVPWT, E/A ratio and Tei indexes were increasing higher along with the process of hypertension (P<0.001, compared to sham group). Hematoxylin-Eosin stain and Masson's trichrome stain revealed the 2K2C hypertension group showed obvious hyperplasia of fibrotic tissue compared with those in the sham-operated group (P<0.05). The increase of fibrous SDC-4 level in the hypertension group was more than that in the sham-operated group (P<0.05).

Conclusions: Left ventricular diastolic dysfunction may be the main change during the early period of hypertension. Syndecan-4 may contributes to the formation of myocardial fibrosis and induce left ventricular diastolic dysfunction through its inflammatory process.

GW26-e2233

Noninvasive Renal Denervation for Resistant Hypertension Using High-intensity Focused Ultrasound

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Objective: To investigate the blood pressure control situation of CCBs and non-CCBs antihypertensive agents combined with tacrolimus.

Methods: In 105 patients coadministered antihypertensive agents combined with tacrolimus in post transplantation hypertension, the target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group. The target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group. The target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group. The target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group. The target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group.

Conclusions: The abnormal rhythm of 24h ABPM lead to transformation of arterial function in prehypertensive old participants, and was greater correlated with AUG, AI and crPWV.
pattern of blood pressure (BP) may promote carotid atherosclerosis and lacunar infarction. In this study, we investigated whether RDW are elevated in hypertensive patients with reverse-dipper BP pattern compared with other circadian BP patterns.

**METHODS** Peripheral venous blood samples were collected from all 718 hypertensive patients recruited in our study and the value of RDW was measured using an automated hematology analyzer. The hypertensive patients were excluded if they

1. were <18 or >90 years old;
2. had acute stroke or myocardial infarction within the past 6 months;
3. were night workers;
4. were under antihypertensive treatment;
5. had sleep apnea syndrome;
6. were diagnosed as secondary hypertension;
7. could not tolerate the 24 hours ambulatory blood pressure monitoring (ABPM);
8. had other chronic diseases.

The classification of the dipper (10-20% SBP fall), non-dipper (0-10% SBP fall), extreme-dipper (<-20% SBP fall) and reverse-dipper (SBP nocturnal rise) was based on ABPM. The distribution of RDW in hypertensive patients among different circadian BP pattern groups was analyzed using analysis of variance (ANOVA). Multinomial logistic regression was applied to explore the associations of RDW and other relevant variables with ABPM results.

**RESULTS** Compared with dipper group, patients with reverse-dipper pattern are more often smokers (p < 0.05) and suffering diabetes (p < 0.01). There was significantly increased RDW in reverse dippers (13.5±1.05) than dippers (12.2±1.04) of hypertension (p = 0.007). Multinomial logistic regression analysis showed that RDW (OR 1.455, 95%CI 1.311-1.872, p = 0.004) and diabetes (OR 2.165, 95%CI 1.327-3.533, p = 0.002) were significantly different when comparing reverse-dipper BP pattern with dipper pattern. In addition to this, the decline rate of nocturnal SBP was negatively correlated with RDW (r = -0.102, p = 0.06).

**CONCLUSIONS** Our study suggested that RDW is associated with the reverse-dipper pattern of BP examined with 24h ABPM. More interestingly, BP reverse dipping may also contribute to the elevated RDW.

**GW26-e0011**

A prospective study on pulse wave velocity (PWV) and response to anti-hypertensive treatments: result from the China stroke primary prevention study (CSPPT)

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**OBJECTIVES** Recent data indicate that hypertension is not well controlled in many populations throughout the world. The factors that influence individual response to anti-hypertensive treatment need to be clarified. Pulse wave velocity (PWV), as a marker of arterial stiffness, has been demonstrated to have important relationships with BP progression; however, little information is available on the role of PWV in blood pressure (BP) control. We aimed to assess BP control during the run-in treatment period in the China Stroke Primary Prevention Trial (CSPPT).

**METHODS** These analyses included a total of 3056 treated hypertensive subjects (age: 59.6±7.5 years, male/female 1339/1717) with PWV measured at baseline. The average BP at enrollment was 166/95mmHg, and declined to 141/85mmHg after short-term antihypertensive treatment (a median follow-up of 20 days).

**RESULTS** There was a negative relationship between PWV level and BP reduction during the run-in period, most notably for systolic BP (with estimated coefficients of –9.01 (P < 0.001) for the top quartile, as compared to the bottom quartile). The association did not differ significantly by gender or types of antihypertensive drugs. Factors related to smaller BP decline were low baseline BP, high baseline PWV, high age, high creatinine, use of fewer types of antihypertensive drug, high heart rate (only for SBP), high homocysteine and low age (only for DBP).

**CONCLUSIONS** PWV appears to be an independent determinant of individual response to anti-hypertensive treatment.

**GW26-e0014**

Sex Difference in Response to Valsartan/Amlodipine Single-Pill Combination in CHINA STATUS II

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**OBJECTIVES** CHINA STATUS (Survey of hypertensive pAtienTs blood pressure control rate in clinic Service) II is a prospective, multicenter, open-label, post-marketing observational study included Chinese adults (≥ 18 years) with essential hypertension who were prescribed once-daily valsartan/amloPidine (Val/Aml, 80/5 mg) single-pill combination. In this analysis, we compared the differences of this therapy according to the different gender in CHINA STATUS II.

**METHODS** A total of 1, 132 patients (6455 (57%) men and 4856 (43%) women) were analyzed. Patients were treated for 8 weeks. First of all, the percentages of not achieving the target systolic blood pressure (SBP ≥ 140 mm Hg) or diastolic blood pressure (DBP ≥ 90 mm Hg) were compared by Fisher exact probability test in different age groups of men and women, respectively at the baseline, 4 weeks and 8 weeks after Val/Aml treatment. Then, the mixed model hierarchically estimated changes of BP according to different age and gender at 4 weeks and 8 weeks after the therapy.

**RESULTS** At enrollment, SBP was lower in men (159.30 ± 12.31 mm Hg) than in women (160.90 ± 12.71 mm Hg, P = 0.003), whereas DBP was higher in men (96.40 ± 10.65 mm Hg) than in women (94.50 ± 10.72, P < 0.001). The overall percentage of not achieving target BP in female patients were less than those in male (57.41% vs. 59.59%, P = 0.05 at 4 weeks and 22.22% vs. 23.78%, P < 0.05, OR = 0.95, 95% CI –0.90, 0.99 at 8 weeks after Val/Aml treatment). According age, male and female were divided into four groups that were <55y, 55-64y, 65-75y and >75y, respectively. Whether male or female patients, the percentage of not achieving target SBP from baseline to Val/Aml treatment was increased with age; however, the percentage of not achieving target DBP was decreased with age. The mixed model analysis showed that the difference in SBP was closely related with sex, that lower SBP effect in female patients was better than it in male patients after Val/Aml treatment. The difference in DBP was closely related with age. The differences of SBP and DBP remain after adjusted for other factors.