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

METHODS Collect 491 kidney transplantation recipients longer than 1 year after transplantation in the outpatient of the Third Xiangya Hospital, Central South University during March 2011 and August 2011 retrospectively, and choose 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. Investigate the combination rate of tacrolimus and dihydropyridine CCB. Compare the blood pressure control situation of CCBs and non-CCBs antihypertensive agents combined with tacrolimus.

RESULTS 284 kidney transplantation recipients (174 male, 110 female, mean age 42.6 ± 10.0 years) were treated with tacrolimus. CCBs and non-CCBs antihypertensive agents were used in 105 and 107 patients, respectively. There were no antihypertensive agents used in 72 patients. The target blood pressure was 70.1% in CCBs group and 36.8% in non-CCBs group, the difference was statistically significant (p < 0.05).

CONCLUSIONS The blood pressure control situation of CCBs may be better than non-CCBs combined with tacrolimus.

GW26-e4377
Correlation between 24h ABPM rhythm and central blood pressure, arterial function in prehypertensive old participants

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

METHODS According to the blood pressure level, 411 cases were divided into two groups, Namely, normotensive controls, dipper and non-dipper group respectively, 24 h ABPM, central blood pressure and carotid pulse wave velocity (C6P/WV) 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 (11.05±5.39) and augmentation index (25.27±11.05) were changed more obviously in non-dipper group than dipper group, P<0.05. Carotid-radial pulse wave velocity (9.53±1.14) was changed more obviously in non-dipper group (8.38±0.88) m/s, P<0.01. Some factors including mSBP, SBPf, LDL-C, nDBP affected crPWV. AUGC and AI was affected by SBPf, DBPf, 24 h SBPf, TG.

CONCLUSIONS The abnormal rhythm of 24h ABPM lead to transformation of arterial Function in prehypertensive old participants, and was greater correlated with AUGC and crPWV.

GW26-e4515
Left ventricular diastolic dysfunction with hypertension is related with SDC-4 increased in 2K2C rats

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OBJECTIVES 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 function 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, 8wand 12w. Meanwhile, Hematoxylin-Eosin stain and Masson’s trichome stain 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, LVW/LVWT, 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 showing obvious hyperplasia of fibrotic tissue compared with those in the sham-operated group (p < 0.05). The increased proinflammatory 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 Derenervation for Resistant Hypertension Using High-intensity Focused Ultrasound

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OBJECTIVES Although showing therapeutic promise for lowering blood pressure (BP) and sympathetic overactivation, catheter-based radiofrequency renal denervation (RDN) is invasive with significant procedural variability. We investigate the antihypertensive efficacy and safety of a noninvasive RDN procedure using extracorporeal high-intensity focused ultrasound (HIFU).

METHODS Ten patients with resistant hypertension were enrolled in this prospective and nonrandomized study. The patients received the noninvasive HIFU-based RDN procedure with a color Doppler flow imaging guidance and were followed up for 6 months. The primary efficacy objective was a decrease in the mean 24-h ambulatory BP at 6 months. Secondary efficacy variables included of heart rate variability, echocardiography, and noradrenaline level. The safety objective included any adverse events during the study.

RESULTS The noninvasive RDN procedures were completed smoothly and were well tolerated by all patients. The mean HIFU ablation time was 19.0 min, and the acoustic energy was 292.8 kJ. The BP significantly decreased compared with the baseline values after treatment (24-h ambulatory BP decreased -11.4/-4.8 mmHg (P < 0.005) and office BP decreased -29.2/-11.2 mmHg (P < 0.009)) with improvement in the heart rate variability and heart systolic function at 6 months. No renal function damage, renal artery injuries, and/or other serious complications were observed.

CONCLUSIONS Noninvasive RDN using extracorporeal HIFU resulted in the sustained reduction of BP and had a good safety profile through 6 months in resistant hypertensive patients. This first-in-man study by using a clinical approved HIFU apparatus has provided the scientific basis for future randomized controlled trials.

GW26-e2248
Increased red cell distribution width in reverse dippers of essential hypertension

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OBJECTIVES Red cell distribution width (RDW) has been suggested as an independent risk factor for morbidity and mortality in cardiovascular diseases. Previously our group reported that reverse-dipper