

Hypertension

GW25-e0068

Comparative study about central blood pressure and arterial elasticity in hypertensive patients combined with diabetic

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Objectives: To explore the alter of central aortic pressure and parameters, crPWV after joint buck hypoglycemic.

Methods: 280 patients with essential hypertension and type 2 diabetes aged from 60 to 79 years old were recruited, and 240 patients were randomized into four groups after 2 months of screening, namely, strengthen antihypertensive and strengthen hypoglycemic group, strengthen antihypertensive and conventional hypoglycemic group, standard buck and strengthen hypoglycemic group, standard buck and conventional hypoglycemic group. Strengthen hypoglycemic group was therapy by gliclazide. Insulin and other could be added when necessary. Conventional hypoglycemic group only taked antidiabetic drugs except gliclazide. All the subjects were collected blood and urine samples at the baseline and the end of the study. Basic clinical datas of all patients such as age, weight, height, BP, HR, ECG and others were collected. Central aortic pressures and carotid-radial pulse wave velocity (crPWV) were carried out noninvasively by using SphygmoCor device.

Results: The rates of decline of CSP (16.96 ± 8.19 mmHg), CDP (2.03 ± 1.67 mmHg), CPP (11.68 ± 2.05 mmHg), CMSP (10.75 ± 7.74 mmHg), CMDP (7.04 ± 12.66 mmHg), CESP (10.38 ± 11.40 mmHg), P1 Height (11.27 ± 10.86) on group I was greater than the other 3 groups after treatment ($P < 0.05$); The rate of decline of CSP (9.37 ± 8.05 mmHg/5.58 \pm 9.01 mmHg), CPP (7.17 ± 2.51 mmHg/5.01 \pm 2.36 mmHg), CMSP (5.79 ± 8.33 mmHg/5.14 \pm 8.96 mmHg), CESP (4.86 ± 11.97 mmHg/5.08 \pm 12.75 mmHg), P1 Height ($6.74 \pm 8.43/6.98 \pm 3.39$) and AI ($10.29 \pm 18.13\%/6.47 \pm 19.31\%$) on group II and III were greater than group IV after treatment ($P < 0.05$). The rate of decline of CSP, CMSP on group II were greater than group III, $P < 0.05$. The rate of decline of crPWV (4.66 ± 4.93 m/s) on group I was greater than the other 3 groups after treatment ($P < 0.05$).

Conclusions: The central aortic pressure and its reflected waves, the flexible functions of vascular were be improved by combined therapy.

GW25-e3199

Changes in pregnancy outcomes of hypertensive disorder complicating pregnancy in Shanghai between 2001 and 2010

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Objectives: To estimate the prevalence and relative risk factors of hypertensive disorder complicating pregnancy (HDCP), to compare changes in pregnancy outcomes of HDCP between 2001 and 2010.

Methods: We carried out a retrospective cohort study of pregnancy women (n=3008) giving birth in 2001 and 2010 in Shanghai tenth people's hospital. Chi-square test was conducted to compare the incident status of HDCP and changes in pregnancy outcomes. Multiples logistic regression was used to explore potential risk factors of HDCP. All statistical analyses were performed by SAS 9.1.3.

Results: The prevalence of HDCP in 2001 (6.52%) was obviously higher than 2010 (2.93%) ($\chi^2=21.68$, $P < 0.001$). There were 124 women with HDCP in total, with 65 occurred in 2001 and 59 in 2010. Among women with HDCP, the incidence of adverse maternal outcomes in 2010 was declined compared with 2001, such as postpartum hemorrhage, stillbirth, and fetal distress, but unfortunately, no significant statistical difference was found. The incidence of fetal distress was decreased from 7.69%-3.39%, and that of premature rupture of membranes was from 4.62%-1.69%. The incidence of adverse neonatal outcomes was also declined except for premature baby, whose incidence was increased from 10.77%-16.95%. Adjusted maternal age, history of diabetes, anemia, history of cardiovascular disease, multiple pregnancies, and family history of hypertension, the last two variables entered in the final logistic regression model. Multiple pregnancies [OR 4.5, 95% CI 1.5-13.4] and family history of hypertension [OR 5.7, 95% CI 1.6-20.1] are correlated with HDCP.

Conclusions: The prevalence of HDCP in 2010 is much lower than ten years ago which may indicate that HDCP was given more attention and better prevention than 2001. Multiple pregnancies and higher family history of hypertension were risk factors of HDCP. The incidence of adverse pregnancy outcomes was declined in some extent.

GW25-e3562

Goal of blood pressure in patients with chronic kidney disease: from the Survey of Prevalence, Awareness, and Treatment Rates in Chronic Kidney Disease Patients with Hypertension in China (PATRIOTIC)

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Objectives: Hypertension is closely associated with the decreased renal function, cardiovascular morbidity and mortality. It is well known that patients with chronic kidney disease (CKD) need aggressive antihypertensive treatment. However, the current guidelines rely more on experts' opinions than clinical evidences. In addition, as there is an "upper limit" of goal blood pressure (BP) in current guidelines, it will be useful to set a "lower limit" of BP for clinical practice. Thus, we referred to the normal range of laboratory values so that we could set goal BP ranges for different age groups' CKD patients.

Methods: A Survey of Prevalence, Awareness, and Treatment Rates in Chronic Kidney Disease Patients with Hypertension in China (PATRIOTIC) was performed in 61 tertiary hospitals from 31 provinces, municipalities, and autonomous regions in China (except Hong Kong, Macao, and Taiwan). Trained physicians measured BP and collected clinical data following a standard protocol. The decreased renal function was defined as glomerular filtration rate (GFR) < 60 mL/min/1.73 m². Cardiovascular disease was defined as coronary artery disease, left ventricular hypertrophy, congestive heart failure, or arteriosclerosis. Cerebrovascular disease was defined as stroke. Systolic BP was classified as ≥ 170 mmHg, 160-169 mmHg, 150-159 mmHg, 140-149 mmHg, 130-139 mmHg, 120-129 mmHg, 110-119 mmHg, and < 110 mmHg. Diastolic BP was classified as ≥ 120 mmHg, 110-119 mmHg, 100-109 mmHg, 90-99 mmHg, 80-89 mmHg, 70-79 mmHg, 60-69 mmHg, and < 60 mmHg.

Results: The analysis included 8927 non-dialysis CKD patients. 6513 aged < 60 years, and 2414 ≥ 60 years. In < 60 years group, 3954 had no decreased renal function, 5989 had no cardiovascular disease, and 6372 had no cerebrovascular disease; the most common BP ranges without decreased renal function, cardiovascular, and cerebrovascular disease were 120-129/70-79 mmHg (SBP 28.2%, DBP 36.0%), 120-129/70-79 mmHg (SBP 23.8%, DBP 30.3%), and 120-129/80-89 mmHg (SBP 22.8%, DBP 29.9%), respectively. In ≥ 60 years group, 770 had no decreased renal function, 1563 had no cardiovascular disease, and 2087 had no cerebrovascular disease; the most common BP ranges without decreased renal function, cardiovascular, and cerebrovascular disease were 120-129/80-89 mmHg (SBP 23.2%, DBP 37.4%), 130-139/80-89 mmHg (SBP 19.6%, DBP 34.1%), and 130-139/ 80-89 mmHg (SBP 18.4%, DBP 32.9%), respectively.

Conclusions: To reduce the occurrence of decreased renal function, cardiovascular, and cerebrovascular disease, it would be better to maintain BP 120-129/70-89 mmHg in CKD patients at < 60 years, and to maintain BP 120-139/80-89 mmHg in CKD patients at ≥ 60 years.

GW25-e4456

Molecular mechanism and characterization of maternally inherited essential hypertension

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Objectives: We aimed to observe the relationship between the mitochondrial tRNA mutation and the essential hypertension by examining the mutation of four tRNA (tRNA^{Lys}, tRNA^{Ile}, tRNA^{Gln} and tRNA^{Met}). We also wanted to explore the inherited signs and clinical characters of maternally inherited essential hypertension.

Methods: We collected the data of general information, blood routine test, blood biochemical examination and color Doppler echocardiography examination of the subjects. We extracted DNA from subject's white blood cell, and amplified the target fragment using the special primers. We then purified the PCR products, and then we directly sequenced them. At last, we analysed the sequencing results and blasted it on net. We also made a comparative analysis of the collected data of the essential hypertension subjects who carried tRNA mutation and those who did not carry mutation using the methods of 1:1 case-control study.

Results: (1) From the mutation analysis of mitochondrial DNA of 2,000 essential hypertensive subjects, we totally found 26 mutation sites in 57 subjects, and 22 mutation sites were new. The most frequently occurrence of the mutation site was A4386G in tRNA^{Gln} gene, next to this was G4394A in the same tRNA gene. (2) The onset ages of the individuals carrying the mutation were earlier than those who did not bear them, which was not associated with the change of body mass index. (3) tRNA mutations significantly affected serum lipids, blood electrolyte, blood creatinine, blood urea nitrogen and heart structure and function, and different tRNA mutations produced different effects. (4) Most essential hypertensive patients had maternally inherited history, which fulfilled the feature of mitochondrial hereditary.

Conclusions: (1) Mitochondrial tRNA mutations might result in the change of their structure and function, and then damaged the blood metabolism, the balance of the blood electrolyte, the steady-state of the blood cells and the heart structure and function, which were involved in the progress of the essential hypertension. (2) Part of the essential hypertension patients clinically presented the characters of maternal inheritance, which might be associated with the tRNA mutation.

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Elevated Uric Acid biosynthesis is Associated with Injured Vascular Function in Patients with Pregnancy-Induced Hypertension

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Objectives: Patients who develop pregnancy-induced hypertension (PIH) exhibit a striking increase in uric acid biosynthesis than healthy subjects, which may deteriorate injured vascular function. This study was to evaluate the association between hyperuricemia and vascular dysfunction in patients with PIH.