

# e0591 EFFECTIVENESS OF CONTINUOUS POSITIVE AIRWAY PRESSURE ON BLOOD PRESSURE IN PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA

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**Background and Objective** Obstructive sleep apnoea is an independent risk factor of hypertension. Several recent meta-analyses based on European and Americans have shown a reduction of blood pressure (BP) of about 2 mm Hg with continuous positive airway pressure (CPAP). This lowering of blood pressure is significant in terms of reduction in both cardiovascular and cerebrovascular risk and death. This is a randomised and controlled study to evaluate the effect of CPAP on blood pressure in Chinese cohorts with cardiovascular and cerebrovascular diseases.

**Methods** Polysomnogram was performed to 45–75 years old patients with cardiovascular and cerebrovascular diseases in China. Forty-four middle-severe OSA patients were enrolled and baseline demographic data as well as sleep study data was recorded in these patients. The subjects were then randomly assigned to receive medical therapy either alone (22 patients) or with the addition of continuous positive airway pressure (22 patients). Daytime blood pressure, heart rate and Epworth score (ESS score) of the two groups was compared after one month follow-up.

**Results** Twenty-one patients in the CPAP group and 22 control subjects completed the study. Compared with the control group, CPAP treatment markedly reduced the daytime diastolic blood pressure ( $\Delta -0.85 \pm 4.67$  vs  $\Delta -5.09 \pm 5.38$ , respectively,  $p=0.038$ ), and improvement in ESS scores ( $\Delta -0.80 \pm 2.16$  vs  $\Delta -5.31 \pm 2.43$ ,  $p<0.001$ ). In contrast, there were no significant changes in systolic blood pressure ( $\Delta -0.51 \pm 5.8$  vs  $\Delta -2.82 \pm 8.09$ ,  $p=0.425$ ) and heart rate.

**Conclusions** Compared with the control group, CPAP treatment for one month was associated with significant reduction in diastolic blood pressure and improvement in ESS score. The reduction of daytime systolic blood pressure did not reach the significant point; however, it was more than 2 mm Hg. In conclusion, CPAP treatment in OSA patients with cardiovascular and cerebrovascular diseases leads to effective reduction in daytime blood pressure, which is significant for reduction of both cardiovascular and cerebrovascular risk and death.

# e0592 STUDY ON THE CORRELATION BETWEEN GENETIC POLYMORPHISM OF ANGIOTENSIN-CONVERTING ENZYME (ACE) IN HAINAN LI NATIONALITY AND HYPERTENSION WITH ATHEROSCLEROSIS

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**Objective** To study the correlation between genetic polymorphism of angiotensin-converting enzyme (ACE) in Hainan Li Nationality and hypertension with atherosclerosis.

**Methods** ACE I/D gene polymorphisms were detected by PCR in 260 hypertension with atherosclerosis group and 276 healthy groups from Hainan Li nationality, and investigated the genotype frequencies and allele frequencies of DD, DI and II.

**Results** (1) In the hypertension with atherosclerosis group of Hainan Li nationality, the genotype frequencies of DD, DI and II were 15.0%, 27.3%, 47.7% respectively, and the allele frequencies of D and I were 33.7% and 66.3% respectively. In the healthy control of

Hainan Li nationality, the genotype frequencies of DD, DI and II were 17.8%, 40.6% and 41.7% respectively, and the allele frequencies of D and I were 38.0% and 62.0% respectively. There were no significant differences both in the genotype frequencies of DD, DI and II, and in allele frequencies D and I between these two groups ( $p>0.05$ ). (2) The logistic regression showed that there were associations between TG (OR=2.14), ApoA (OR=360.39), SBP (OR=1.21), DBP (OR=1.08) and the hypertension with atherosclerosis group ( $p<0.05$ ). The MIMT level in ACE DD subset were significant higher than in DI and II ( $p<0.05$ ).

**Conclusions** The ACE DD genotype increases the susceptibility of carotid atherosclerosis. It is the risk factor in the hypertension with atherosclerosis group of Hainan Li nationality. It may be an early prediction factor in atherosclerosis.

# e0593 ASSOCIATION OF LEFT VENTRICULAR HYPERTROPHY WITH RENAL FUNCTION IN PATIENTS WITH ESSENTIAL HYPERTENSION

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**Objective** To investigate association of left ventricular hypertrophy (LVH) with renal function in patients with essential hypertension.

**Methods** 318 patients with essential hypertension hospitalised in the department of Cardiology of First Hospital of China Medical University between 2008 and 2010 were investigated. Glomerular filtration rate (eGFR) was estimated by serum creatinine (Scr), age and sex, Left ventricular mass index was determined using echocardiography. Patients were divided into two groups, LVH group and non-LVH group.

**Results** Difference of age, sex, course, body mass index (BMI), systolic blood pressure (SBP), diastolic blood pressure (DBP), uric acid (UA), total cholesterol (TC), triglyceride (TG), fasting blood glucose (FBG) between two groups were of no statistical significance. Mean eGFR was  $77.43 \pm 26.38$  ml/min/1.73 m<sup>2</sup> in LVH group and  $83.74 \pm 23.70$  ml/min/1.73 m<sup>2</sup> in non-LVH group ( $p>0.05$ ). However, the slope of the regression line of eGFR vs age was accentuated ( $p<0.05$ ) in LVH group (slope values of  $-1.818 \pm 0.303$  ml/min/1.73 m<sup>2</sup> per year) when compared with non-LVH group (slope values of  $-0.902 \pm 0.304$  ml/min/1.73 m<sup>2</sup> per year).

**Conclusion** LVH accelerates decline of eGFR with age; LVMI appeared to be a potential marker of accelerating age-associated decline of eGFR.

# e0594 ROLE OF VASCULAR PEROXIDE 1 IN VASCULAR REMODELLING IN ESSENTIAL HYPERTENSION

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**Objective** To determine the role of Vascular peroxide 1 (VPO1), a newly identified haem-containing peroxidases in vascular remodelling in hypertension.

**Methods** The carotid arterial intima-media thickness in patients with essential hypertension and the Media thickness, lumen diameter, media thickness/lumen diameter ratio, mean nuclear area in artery media in spontaneously hypertensive rats (SHRs) were