

# e0585 THE RELATIONSHIP BETWEEN RESPONSES OF BLOOD PRESSURE TO EXERCISE STRESS AND CHANGES OF ENDOTHELIUM DEPENDENT VASODILATATION IN REST BLOOD PRESSURE WELL-CONTROLLED PATIENTS WITH HYPERTENSION

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**Objective** To measure the relationship between responses of blood pressure to exercise stress and changes of endothelium dependent vasodilatation in rest blood pressure well-controlled patients with hypertension.

**Method** 60 rest blood pressure were well-controlled patients with hypertension were divided into two groups: exercise hypertension (Group A) and normal exercise blood pressure (Group B), and 30 normal persons were control group (Group C). Endothelium-dependent vasodilatation was assessed in the brachial artery by high resolution ultrasound technique before exercise and exercise stress test was assessed by 6-min walking test. Blood pressure (BP) and heart rate was measured before, at the time of the end of exercise and at 10, 20, 30 min after exercise. The serum concentrations of nitric oxide (NO), endothelin-1(ET-1) were measured before exercise and at the time of the end of exercise.

**Result** Compared with group B and Group C, FMD% in Group A significantly decreased ( $p<0.05$ ). Immediately after exercise, SBP, DBP, HR in three groups significantly increased and dropped down to the original level at 10 min after exercise. Compared with group B and group C, the change of SBP, DBP in group A was the more obvious. Before exercise the concentrations of NO in group A was the lower than group A and B ( $p<0.05$ ). Immediately after exercise there was significant increase of NO in three groups, and the change in group B and C was the higher ( $p<0.05$ ). Compared with group B and group C, the concentrations of ET-1 in group A were significantly increased before exercise. Immediately after exercise there was no significant change of the concentrations of ET-1 in three groups. There was significant negative correlation between increasing-range of DBP and FMD ( $p<0.05$ ); There was significant negative correlation between increasing-range of SBP and the change of NO ( $p<0.05$ ), significant positive correlation between increasing-range of DBP and the change of NO ( $p<0.05$ ); There was no correlation between increasing-range of SBP or DBP and the change of ET-1, and there was no correlation between increasing-range of HR and the FMD or the change of NO and ET.

**Conclusion** BP could increase after exercise in rest blood pressure well-controlled patients with hypertension. Endothelium dependent vasodilatation, the serum concentrations of NO, but not the serum concentrations of ET-1 could be related to change of DBP and SBP.

# e0586 EFFECT OF GLOMERULAR FILTRATION RATE AND MICROALBUMINURIA ON THE DAMAGE OF TARGET ORGAN IN ESSENTIAL HYPERTENSION

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**Objective** To observe the character of Ambulatory Blood Pressure Monitoring and the damage of target organs in hypertensive patients with abnormal GFR and (or) MAU. To observe the correlated factors of GFR and MAU.

**Methods** Our study population consisted of 202 cases of essential hypertensive patients (male 109, female 93, Han people 128, wei people 52, other race people 22, age 18–82 years, mean age is

44.39±11.32 years). Based on the value of GFR and MAU, the patients were divided into three groups and two groups departed. To analyse the index of ambulatory blood pressure, blood fat, blood glucose and the degrees of the damage of target organ in these groups. To analyse the correlation factor of GFR and MAU with statistical method.

**Results** (1) The all systolic blood pressure, the diastolic blood pressure in night and the pulse pressure in GFR<60 ml/min/1.73 m<sup>2</sup> group is higher than the other two groups. The incidence of Ventriculus sinister plump, carotid arteries, abnormal cerebral blood flow in GFR<60 ml/min/1.73 m<sup>2</sup> group is higher than the other two groups. (2) The all index of ambulatory blood pressure except the morning systolic and diastolic blood pressure, blood fat and blood glucose in 24 h MAU≥30 mg/d group is higher than the other group. No difference on the damage of target organ in these two groups. (3) The regression result display that GFR is associated with age and serum creatinine. MA is associated with the systolic blood pressure, fasting blood glucose and GFR.

**Conclusions** There is show that the cardiovascular incidence rate in essential hypertension patients with renal dysfunction is higher than pure essential hypertension. GFR is decline with the raise of age and serum creatinine. MA is increased with the decline of GFR and the raise of systolic blood pressure, fasting blood glucose.

# e0587 OBSERVATION OF AMIODARONE COMBINING LOSARTAN AND SHENSONGYANGXIN CAPSULE ON MAINTAIN SINUS RHYTHM WITH HYPERTENSION AFTER ATRIAL FIBRILLATION REVERSION

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**Objective** To observe losartan combining with amiodarone and shensongyangxin capsule on maintain sinus rhythm with hypertension after atrial fibrillation reversion.

**Methods** 105 patients with hypertention after atrial fibrillation reversion were randomly divided into three groups. Group A was treated by amiodarone; Group B was treated by amiodarone and losartan; Group C was treated by amiodarone combining with losartan and shensongyongxin capsule. All patients were treated with general anti-hypertension therapy except ACEI and ARB. All patients were examined with UCG and Holter monitor before and after 12 months' therapy.

**Results** The left atrial dimension of the patients in Group B and Group C were smaller than those in Group A ( $p<0.05$ ), the rates of maintaining sinus rhythm in Group B and Group C were higher than those in Group A ( $p<0.05$ ,  $p<0.01$ ), especially the Group C which was even more obvious ( $p<0.01$ ).

**Conclusion** Amiodarone and losartan should be used to treat the patients with hypertension and atrial fibrillation, losartan also has definite curative effect in maintaining sinus rhythm. However combined with shensongyanxin capsule, the effect should be better.

# e0588 THE LONG-TERM PHARMACOECONOMIC ECONOMIC EVALUATION OF TWO INITIAL COMBINATION THERAPY REGIMENS FOR HYPERTENSION USING MARKOV MODEL

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**Objective** Our aim was to apply Markov model to the Pharmacoeconomic evaluation of the effect with long-term low doses of amlodipine plus amiloride or telmisartan antihypertensive therapy, to provide a basis for the selection of optimised combination

therapy, to offer the methodological reference for the Pharmacoeconomic evaluation of the domestic hypertension Intervention.

**Methods** 1. According to the natural history of hypertension, Markov model was constructed to simulate the dynamic changes of the five states (event free, non-fatal myocardial infarction, non-fatal stroke, natural death and non-natural death) in the hypertension patients who received the two combined treatment, and a 1-year cycle length was chosen. 2. We had applied Markov model using Roll back analysis, Markov cohort simulation and Monte Carlo simulation analysis to project expected life years, the expected quality-adjusted life years and the medical costs in the subsequent 40 yrs of life time for the hypertension patients who had been long-term treated with low dose of amlodipine plus amiloride or telmisartan. Sensitivity analysis were carried out to determine the robustness of our baseline results. 3. On the basis of the published study of China's population-based clinical trials, we had obtained Markov model transition probability between states, health utility values and health care costs in the states through literature review and search statistical data of China.

**Results** 1. The baseline Roll back analysis showed that after amlodipine plus amiloride antihypertensive therapy for 40 years, the average cost-effectiveness ratio was 1416 yuan/QALY and 1790 yuan/QALY respectively. According to Monte Carlo simulation analysis, the average cost-effectiveness ratio of the amlodipine plus amiloride treatment and its 95% CI were 1173.1 yuan/QALY (95% CI 1139.43 yuan/QALY to 1174.72 yuan/QALY). 2. The baseline Roll back analysis after amlodipine plus telmisartan antihypertensive therapy for 40 years showed that the average cost-effectiveness ratio was 2252 yuan/LYG and 2334 yuan/QALY respectively. According to Monte Carlo simulation analysis, the average cost-effectiveness ratio of the amlodipine plus telmisartan treatment and its 95% CI were 1843.6 yuan/QALY (95% CI 1, 817.15 yuan/QALY 1850.00 yuan/QALY). 3. Compared with amlodipine plus amiloride antihypertensive therapy, the incremental cost-effectiveness ratio of telmisartan plus amlodipine treatment was 75713 yuan/QALY. The incremental net monetary benefit and the incremental net health benefit were -7480.1 yuan (95% CI -7804.6 to -7155.6 yuan) and -0.329QALYs (95% CI -0.343 QALYs to -0.315 QALYs), which used the 2008 per capita GDP 22698 yuan as the threshold. The probability that the net benefits of the Amlodipine plus amiloride treatment was greater than that of telmisartan plus amlodipine treatment was 94.5%. 4. According to the sensitivity analysis, the change of key parameters in the set range did not affect the model results.

**Conclusion** 1. Two combination regimens were able to attain significant clinical effectiveness and economic Benefit, however in the case of limited resources, priority should be given to the amlodipine plus amiloride combined antihypertensive therapy as the initial program, in order to obtain better economic benefit. 2. Markov model can be good used for Economic evaluation of blood pressure intervention.

e0589

# EFFECTS OF INITIAL THERAPY FOR HYPERTENSION WITH COMBINATION THERAPY REGIMEN AND IMPACT ON RENAL FUNCTION

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**Objective** To evaluate the effects and side effects of initial therapy for hypertension with a combination of low-dose amlodipine plus amiloride or low-dose amlodipine plus telmisartan regimen.

**Method** A total of 302 hypertensive patients were included. Inclusion criteria were: essential hypertension, 50-79 years of age with at least one cardiovascular risk factor and signed consent forms.

Patients were randomly assigned to receive low-dose amlodipine plus amiloride (group A) or low-dose amlodipine plus telmisartan (group B). Blood pressures, side effects, metabolic parameters and renal function indexes were observed during 1-year following-up. All patients will be followed-up for 1 year.

**Results** After 1-year treatment, mean blood pressure in group A and B were reduced to (128.1±10.3)/(76.6±8.0) mm Hg and (131.5±12.3)/(77.3±9.2) mm Hg from (157.1±12.0)/(91.1±9.4) mm Hg and (156.4±13.6)/(91.2±9.5) mm Hg (p<0.05), respectively. Blood pressure control rates reached 87.1% in group A and 76.5% in group B (p=0.024) the serum uric acid level significantly elevated from (310.59±76.32) μmol/l to (353.71±76.77) μmmol/l (p=0.000) after treatment in group B. The serum creatinine level decreased from (85.15±21.25) μmmol/l to (82.70±20.21) μmmol/l (p=0.001) after treatment in group B.

**Conclusion** Initial low-dose amlodipine-based antihypertensive combination regimens could significantly decrease blood pressure level and achieve satisfactory blood pressure control rate with few side effects. Compatibility of telmisartan may provide renal protection independent of BP lowering in combination regimen. The two combination schemes could markedly improve quality of life in patients with hypertension.

e0590

# THE ONE-YEAR PHARMACOECONOMIC EVALUATION OF HYPERTENSION'S TREATMENT BY LOW DOSE AMLODIPINE PLUS TELMISARTAN OR AMLODIPINE PLUS AMIRORIDE REGIMEN

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**Objective** To evaluate the cost-effectiveness of low-dose amlodipine plus telmisartan (group A) or amlodipine plus amiloride (group B) therapy in hypertensive patients using a decision-tree model with a time horizon of 1 year. To provide evidence on the optimal combination therapy regimens and treatment options in hypertensive patients.

**Method** Based on the trial data, a cost-effectiveness decision-tree model was developed to assess, about 1 year period, the short-time economic effects, where the total effective rates, Blood pressure control rates and QALYs were estimated as indicators of effectiveness, respectively. Roll back, cost-effectiveness analysis, cost-utility analysis and incremental cost-effectiveness analysis were adopted in the decision-tree model. Both one-way and two-way sensitivity analysis were carried out to determine the robustness of our baseline results.

**Results** 1. Expected values: About the average cost per patient needed with a time horizon of 1 year, group A need ¥1247, group B need ¥1917. About the total effective rates and blood pressure control rates, group A reached 87.6% and 80.9%, group B reached 84.0% and 70.7%. About the average QALYs per patient gained, group A were 0.046 QALYs and group B were 0.085 QALYs. 2. The one year cost-effectiveness analysis showed that, the cost of effective treatment was ¥1389 and ¥2230 per patient in group A and group B, respectively. At the cost of blood pressure controlled for each case, group A need ¥1540, and group B require ¥2712. At the cost of gain 1 QALY after 1 year therapy, group A need ¥26979, and group B require ¥22517. The estimated ICER for group A vs group B was ¥17222 per QALY gained. 3. The sensitivity analysis results showed that there were no impact of variations in key model inputs on the model.

**Conclusion** From group decision-making considerations, applying the economic benefit, the initial low-dose amlodipine plus amiloride is optimal opinion; And consider from improving the quality of life, amlodipine plus telmisartan is preferred scheme.