

control rates (target blood pressure 90 mm Hg) were higher for aliskiren groups (300 mg, 52.46%; 150 mg, 49.82% and 75 mg, 45.91%) compared to ramipril (5 mg, 44.44%); and aliskiren 300 mg group was significantly superior to ramipril 15 mg group ($p=0.0359$). The overall incidence of adverse effects (AEs) was similar among the treatment groups. The ramipril group had at least a four times higher incidence of cough (6.0%) compared with the three aliskiren treatments (ranging from 0.4% to 1.4%).

Conclusion Aliskiren was well tolerated, and superior or non-inferior to ramipril in lowering BP in Chinese patients with essential hypertension.

e0353 PERIPHERAL PULSE WAVE VELOCITY AS SCREENING FOR SUBCLINICAL VASCULOPATHY IN RHEUMATOID ARTHRITIS

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Objective This study aims to evaluate a noninvasive method for screening of early vasculopathy in high risk patients suffering from rheumatoid arthritis (RA).

Methods Brachial-ankle pulse wave velocity (baPWV) was measured in RA group ($n=132$) and age, gender, height-matched healthy volunteers ($n=132$). Vasculitis specific biomarkers, biochemical and immune indices were recorded in RA patients. Multiple regression analysis was performed in RA group to determine the independent predictors of baPWV. Echo-tracking technique was used to measure pressure elastic coefficient (E_p) and stiffness parameter (β) of brachial and posterior tibial artery in 25 RA patients and 48 matched controls.

Results The baPWV in RA group was significantly increased as compared with control group (15.0 [9.2–30.0] m/s versus 12.6 [9.6–16.0] m/s, respectively, $p<0.0001$). On multiple regression, baPWV correlated independently with age, heart rate, mean arterial pressure and perinuclear antineutrophil cytoplasmic antibodies (p-ANCA) ($R_{2adj}=0.6868$, $p<0.0001$; $F=33.32$, $p<0.0001$; power=85%; $n=107$). The E_p (477.9 ± 138.1 versus 315.2 ± 111.9 KPa; $p<0.0001$) and β (34.90 ± 11.00 vs 24.99 ± 7.81 ; $p<0.0001$) of posterior tibial artery in RA group were significantly higher than those in control group. There were no significant difference in E_p and β of brachial artery between the two groups ($p>0.05$).

Conclusions There was a significant increase of baPWV, E_p and β of posterior tibial artery in RA group compared with control subjects, which related well to p-ANCA. BaPWV may provide a simple, noninvasive method for screening of early subclinical vasculopathy in RA patients.

e0354 ANGIOGRAPHIC CHARACTERISTICS OF PREMATURE CORONARY HEART DISEASE—ANALYSES OF SINGLE CENTER

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Background There are no large-sample published reports prospectively or consecutively assessing the angiographic characteristics of premature coronary heart disease in China.

Objectives The present study was carried out to collect and analyse the clinical and angiographic characteristics in a single center.

Methods From April 2004 to April 2008, based on the screening condition of male <55 years and female (<65 years), we selected premature coronary heart disease from a dedicated database of coronary angioplasty registry of the Center for Diagnosis & Treatment of Coronary Artery Disease, Fuwai Hospital. They had been subjected to coronary angiogram due to the angina pectoris or asymptomatic myocardial ischaemia in coronary heart disease.

Results 4478 consecutive patients (3056 males, 1422 females), average age was (49.9 ± 7.0) years, were defined as coronary heart disease according to clinical manifestation and coronary angiogram. Patients with unstable angina pectoris (UAP), stable angina pectoris (SAP) and without angina pectoris were 2400, 1534 and 544, respectively. The proportion of coronary heart disease, hypertension, hyperlipidaemia, diabetic mellitus (DM), smoking history, prior myocardial infarction (MI), prior percutaneous intervention (PCI), coronary artery bypass graft and history of cerebrovascular diseases were 6.7%, 53.0%, 35.3%, 20.8%, 90.3%, 43.3%, 16.6%, 1.5%, 1.1%, respectively. The ratio of eccentric lesions, concentric lesions, chronic total occlusion lesions (CTO) and calcified lesions were 93.7%, 23% and 42.8%, respectively. Comparison between UAP and SAP, there was more MI, PCI, complex lesions (B2+C), eccentric lesions and calcium lesions among 3934 patients. There were more MI, PCI, DM, hyperlipidaemia, hypertension, cerebrovascular diseases, smoking, eccentric lesions complex lesions, angulated lesions and calcified lesions in male than that in female (all $p<0.05$).

Conclusions The ratio of sex and clinical findings are different in Chinese premature coronary heart patients. There were more MI, PCI, complex lesions, eccentric lesions and calcified lesions in UAP group, comparison between sexes, there were higher incidences of hypertension, hyperlipidaemia, cerebrovascular disease and smoking history in male.

e0355 CLINICAL OUTCOMES OF PERCUTANEOUS CORONARY INTERVENTION WITH STENT KISSING BALLOON (SKB) TECHNIQUE IN OSTIAL LAD LESIONS

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Objective To explore a new technique (stent kissing balloon, SKB) for the treatment of special ostial LAD stenosis.

Methods From January 2008 to March 2010, 8 patients were enrolled to this study, the including entry criteria were left anterior descending artery (LAD) ostial stenosis $>70\%$, and with the angle between LAD and left circumflex artery (LCX) was less than 60° ; left main artery diameter was much larger than LAD ostial diameter (>1 mm), at same time LCX ostial without obvious stenosis lesions. The key point of procedure was as follows: firstly, the stent in LAD and the balloon in LCX should arrive at the positions simultaneously. Secondly, the proximal marker of the balloon was a little ahead of the proximal marker of the stent, then first release the stent with high pressure (12–14 atm) and at last inflate the stent and balloon simultaneously (final kissing with 8–10 atm). Follow-up was carried out by outpatient, phone calls or coronary angiography.

Results The patients average age was 54.4 ± 9.0 years, 6 was male, 2 was female, 3 patients with diabetes, four patients with hypertension, one patients with prior myocardial infarction, the characteristics of lesions was diffused in two patients and tubular in 6 patients. The average of diameter stenosis was $86\pm 8\%$. All the patients accomplished clinical follow-up, average 590 ± 202 days (268–810 days), there was no major adverse cardiac events (including target lesion revascularization, myocardial infarction and all-cause death), four patients accomplished 6–8 angiographic follow-up. There was no in-stent restenosis in these four patients.

Conclusions The SKB technique is safety and efficacy for the special ostial LAD lesions, long-term follow-up and large volume patients study is needed to verify the initial results.

e0356 THE RESEARCH ON CALCIUM HOMEOSTASIS EXPRESSION AND GENE TRANSCRIPTION OF ATRIAL MYOCYTES IN PATIENTS WITH ATRIAL FIBRILLATION

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Objective Inquire into the molecular biological mechanism of the occurrence and maintenance of atrial fibrillation (AF) by researching adjustment and control of the L type the passage and muscles sarcoplasmic reticulum (SR) Ca²⁺- the ATPase expression by main calcium ion (Ca²⁺) of AF and the sinus rhythm.

Methods We took 200 mg right auricle tissues and (or) left atrium tissues from each of the 63 patients undergoing cardiac surgery (including three groups: chronic AF, paroxysmal AF and sinus rhythm), extracted the protein and measured the density of overall sample protein, using Western-blot method to analyse the expression level of atria muscle L-type Ca²⁺ Passage and SR Ca²⁺-the ATPase. Isolated the total RNA of the atria muscle tissue by Trizol Method, measured the expression amount of atria muscle L-type Ca²⁺ Passage and SR Ca²⁺-ATPase mRNA with RT-PCR method. Detailed clinical data were obtained before and after operation.

Results Firstly, left atrial diameter was obviously higher in patients with chronic AF or paroxysmal AF than in patients with sinus rhythm. Secondly, the patients with chronic AF have lower ratio of L-type Ca²⁺/GAPDH protein and SR Ca²⁺-ATPase/GAPDH protein than the group of sinus rhythm both in left atrium and right atrium with significant difference. Compared with sinus rhythm group, ratio of L-type Ca²⁺/GAPDH protein and SR Ca²⁺-ATPase/GAPDH protein in paroxysmal AF group decreased with no statistical significance. 3. Level of L-type Ca²⁺ and SR Ca²⁺-ATPase mRNA of the chronic AF group declined than sinus rhythm group both in left and right atrium with statistical differences.

Conclusion L-type calcium channel and SR Ca²⁺-ATPase mRNA and the amount of protein changed significantly in the patients with chronic AF and not significantly in paroxysmal AF group. There was statistical significance between left and right atrium.

e0357 DIAGNOSTIC VALUE ADENOSINE STRESS ^{99m}Tc-MIBI GATED MYOCARDIAL PERFUSION IMAGING FOR CORONARY ARTERY DISEASE

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Objective Stress ^{99m}Tc-MIBI myocardial perfusion imaging (MPI) be useful in evaluating myocardial ischaemia and judging coronary artery stenosis. The purpose of this study was to evaluate the sensitivity, specificity and accuracy of adenosine stress ^{99m}Tc-MIBI gated myocardial perfusion SPECT (G-MPI) for the diagnosis of coronary artery disease (CAD).

Materials and methods The subjects were 46 patients diagnosed or suspected CAD, including forty with angina, six with old myocardial infarction. Adenosine stress G-MPI were performed 90 min after injection of adenosine, and resting G-MPI performed in same day. All patients underwent coronary artery angiography within two weeks. Significant stenosis was defined when the coronary artery intraluminal stenosis $\geq 50\%$. Analyse the imaging and calculate the sensitivity, specificity and accuracy of adenosine stress G-MPI in diagnosing CAD and judging coronary artery stenosis. Do correlation analysis of left ventricular systolic function (left ventricular ejection fraction) between adenosine stress ^{99m}Tc-MIBI G-MPI and echocardiography.

Results The sensitivity, specificity, accuracy, positive predictive value and negative predictive value of adenosine stress ^{99m}Tc-MIBI G-MPI for the diagnosis of CAD were 87.0%, 85.7%, 86.6%, 93.8%, and 72.7% respectively. The sensitivity, specificity and accuracy for the diagnosis of LAD, LCX and RCA stenosis were 88.2%, 90.9%, 88.9%; 78.6%, 83.3%, 80.0%; 90.5%, 81.8%, 87.5% respectively. LVEF-G-MPI correlated with LVEF-UCG significantly, with a correlation coefficient of 0.885 (R=0.0001).

Conclusions In Conclusion, stress adenosine ^{99m}Tc-MIBI G-MPI have provided better sensitivity, specificity and accuracy in the diagnosis of CAD, and is probably an accurate method for detecting coronary artery stenosis. It can be used in evaluating left ventricular function, especially for patients unsuited in the exercise MPI.

e0358 PROFIBROTIC INFLUENCE OF HIGH GLUCOSE ON HUMAN CARDIAC FIBROBLAST FUNCTIONS

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Aims Recent studies have demonstrated an important role of chronic high glucose concentration for collagen deposition in fibroblasts. However, little is known about the action of angiotensin II type 1 receptor blocker and inflammatory cytokines on ACE inhibitor on matrix metalloproteinase (MMP) regulation and collagen synthesis in human cardiac fibroblasts. In this article, we determined the influence of chronic high glucose concentration on human cardiac fibroblasts functions and the effects of 606A and imidaprilat in these responses.

Methods and results Human cardiac fibroblasts were long-time exposure in normal or high glucose media in the absence or presence of 606A or imidaprilat. We have determined their MMP-2 activities by using in-gel zymography. In addition, the collagen IV synthesis was evaluated by the means of ELISA. Results show that chronic high glucose concentration inhibits the activity of MMP-2 and accelerates collagen IV synthesis. When Equimolar mannitol was used as an osmotic control, the activity inhibition of MMP-2 were also observed, however, it is not as strong as that by using high glucose. Inhibition of MMP-2 activity and enhancement of collagen IV synthesis were reserved incompletely by 606A. But complete reservation of MMP-2 activity and collagen IV synthesis was observed by using imidaprilat in cultured media in the experiments.

Conclusions Chronic high glucose inhibits the activity of MMP-2 and increases collagen IV synthesis by means of regulating MMP-2 mRNA expression in human cardiac fibroblasts through osmotic and non-osmotic pathways. Inhibition of MMP-2 activity and enhancement of collagen IV synthesis were reserved incompletely by 606A. But complete reservation of MMP-2 activity and collagen IV synthesis was observed by using imidaprilat in cultured media in the experiments.