EFFECTS OF ATORVASTATIN ON THE EXPRESSIONS OF PECAM-1 AND P-SELECTIN IN ATHEROSCLEROTIC RABBITS

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Objective To investigate the effects of atorvastatin on atherosclerotic rabbits serum lipid concentration and the expressions of PECAM-1 and P-selectin in rabbit thoracic aorta.

Methods Atherosclerotic rabbit models were made by feeding the rabbits with high cholesterol. Thirty New Zealand big rabbits, weight (2.0±0.2) kg, were randomly divided into three groups. Group A was fed with common forage, Group B was fed with high cholesterol diet, and Group C was fed with high cholesterol diet and atorvastatin simultaneously. After 16 weeks feeding, serum TC, TG, LDL-C, VLDL-C were measured. The aortic arteries were isolated and the samples adjacent to aortic arch were harvested for formirescope detection. The PECAM-1 and P-selectin gene expressions in rabbit thoracic aorta were detected by RT-PCR.

Results The levels of TC, TG, LDL-C, VLDL-C in group B were significantly increased compared with group A and group C (p<0.05), while the levels of TG, TC, LDL-C, VLDL-C in group C were higher than those in group A (p<0.05). The aorta structure in group A was clear, the aortic intimal in group B was significantly thick and infiltrated by a large number of foam and inflammatory cells, but the endothelium in group C only showed focal infiltration of those cells observed under the microscope. The mRNA expression of PECAM-1 and P-selectin in group B were significantly increased than in group A (p<0.01), while those in group C, which were also higher than group A, were significantly decreased than group B (p<0.05).

Conclusions Atorvastatin regulates lipid metabolism effectively and reduces the PECAM-1 and P-selectin expression, which are closely related to atherosclerosis.

EVALUATE SERIATE PROGRESS OF VULNERABLE PLAQUE BY OPTICAL COHERENCE TOMOGRAPHY ON RABBIT VULNERABLE PLAQUE MODEL

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Objectives Assess seriate progress of vulnerable plaque (VP) formation fusing Optical Coherence Tomography (OCT) with histopathological test to confirm what we find in the OCT imaging of vulnerable plaque on established rabbit vulnerable plaque model. Providing early characteristics of the signals displayed by VP in order to give accurate and reasonable therapy.

Method 25 New Zealand white rabbits were randomly divided into 4 groups after balloon injuring the intima with subsequently 1% high fat diet. Grouping: Examed at 4 time points: 6 (n=6), 8 (n=5), 10 (n=5), 12 (n=7) weeks. OCT and histopathological examination were performed at those time points to display each stage of vulnerable plaque. Serum blood fat test were collected, especially the low density lipoprotein (LDL-C) as a major predictor for the stability of the plaque.

Results There were 2 rabbits died separately in 6 and 8 weeks, and 5 died at 12 weeks. At 6th week (n=4), OCT showed that the intima were more and more thick with heterogeneously low and high signals. Part of the tissue was protruding into the lumen. The composition of this tissue verified by pathology is lipid infiltration. At 8th week (n=3), the protruding area was increased. The cover of the region with low density was stripped with strong and high signal; At 10th week (n=5), signal of the cover upon the plaque were much thinner, while, pathology examination had proved that this signal represent the fibrous cap. Signal high bright region contain radial pattern that showed in the thin cap with lipid rich plaque was infiltrated with large macrophage; At 12th week (n=4), OCT showed the lumen area was severely stenosis due to the large protrusion or ringed-shaped plaque formation. Fibrous cap thickness were less than 65 μm (mean value=0.05±0.01 mm). While, 28.6% of the plaques were total occlusion lesion. Total Cholesterol (TC) was at 6 weeks 36.77±0.80 mmol/l, 8 weeks 38.10±1.92 mmol/l, 10 weeks 35.94±0.93 mmol/l, 12 weeks 35.56±1.30 mmol/l; Low density lipoprotein (LDL) was 26.79±4.64 mmol/l at 6 week, 20.72±2.07 mmol/l at 8 weeks, 19.53±1.96 mmol/l at 10 weeks, 19.85±1.96 mmol/l at 12 weeks.

Conclusion Balloon injury intima and subsequently high fat diet for 12 weeks can successfully establish the vulnerable plaque animal model. Plaques with large lipid core and thin cap were tend to rupture with subsequently thrombus. This process was the same as human beings, so that we can study the process of the vulnerable plaque formation using optical coherence tomography to display early stage imaging characteristics of the plaque. With the long time high fat diet, Total Cholesterol (TC) and Low Density Lipoprotein (LDL) had sharply increased which have a strong relativity with the stability of the plaque. Thus, we can use blood fat test to predict the stability changes of the plaque.

CHANGES OF ADIPONECTIN EXPRESSION IN ACUTE MYOCARDIAL INFARCTION RATS AND THE SIGNIFICANCE OF BISOPROLOL INTERVENTION

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Background and Aims The aim of this study was to explore the expression changes of myocardial APN in acute myocardial infarction (AMI) rats, changes of serum APN, and the significance of Bisoprolol intervention.

Methods AMI rat model was established for the purposes of this study and was used for analysis of serum APN as determined by ELISA. Expression changes of myocardial APN mRNA in AMI rats were determined via RT-PCR and expression changes of myocardial APN protein were determined by the way of immunohistochemistry.

Results Serum APN concentration and APN protein expression of the myocardium decreased significantly in the AMI groups compared with the sham operation group, with the lowest serum APN and APN protein expression on day 7 after AMI. On days 7 and 10 after AMI, the expression of myocardial APN mRNA in the AMI groups decreased significantly compared with the sham operation group. However, the APN mRNA increased on day 10 compared with that on day 7. Notably, there was an increase in levels of serum APN and myocardial APN expression after Bisoprolol intervention.

Conclusions The expression of myocardial APN and serum APN decreased in AMI rats. APN may be an important protective factor against AMI. Bisoprolol can also protect against AMI due to its increasing APN expression.

Epidemiology and Preventive Medicine:

Epidemiology of Cardiovascular Disease

A STUDY ON EPIDEMIOLOGICAL TREND OF ELDERLY HYPERTENSION IN BEIJING

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Object To explore the epidemiological trend of elderly hypertension, so as to provide basis for prevention of hypertension.
Method A group of 2332, 1828, 2277 elderly residents aged ≥60 in 
Beijing were chosen into this study in the year 2000, 2004, 2007 by 
well-established statistical sampling techniques such as cluster, 
stratification and random selection, and epidemiological trend of 
elderly hypertension was analysed by x² analysis.

Result The prevalence rate (69.2%, 61.9%, 56.0%) of hypertension 
and the control rate (22.6%, 16.7%, 21.5%) lowered annually, and 
awareness rate (45.7%, 55.8%, 57.6%) of treatment elevated annu-
ally. There was no rising in the control rate of male (26.2%, 16.7%, 
20.8%), less older (28.0%, 18.4%, 21.0%) and rural (19.5%, 9.6%, 
13.4%).

Conclusion The results indicate that the prevalence of hypertension 
is high in the elderly rural people, while the rates of awareness, 
treatment and control are low. It suggests that effective public 
measures need to be developed to improve the prevention and 
control of hypertension.

**e0246** THERAPEUTIC EFFECT OF A DUAL-CHAMBER PACEMAKER 
WITH THE OPTIMISED PROGRAM-CONTROL MODE ON 
LONG-QT SYNDROME

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Objective To explore the optimised program-control mode of a dual-
chamber pacemaker combined with β-blocker to treat congenital 
long QT syndrome (LQTS).

Methods 12 LQTS patients in our hospital that still have symptoms 
despite use of regular drug therapies or that can not endure the 
therapies were implanted with DDD cardiac pacemaker. The QT/ 
QTc intervals of those patients were measured at different pacing 
rates respectively. Their cardiac pacemakers were all programmed 
to selectively turn on and turn off some related functions at the pacing 
rate of 80 beats/min. The dosage of β-blockers was adjusted 
according to the patients’ FR intervals and blood pressures. The 
MACE and the cardiac function of the patients were recorded after 
operation.

Results The measured QT/QTc interval decreased with the pacing 
rate increasing. The pacing rate of 80 beats/min can make QT/QTc 
interval basically normal. The MACE of the patients were statisti-
cally declined (p=0.005) and no negative effect on cardiac function 
was found during the follow-up.

Conclusion The optimised program-control mode of a dual-chamber 
pacemaker combined with β-blocker to treat congenital LQTS are: 
to pace at the rate of 80 beats/min and program to turn off lag, 
sleep, automatic preventing PMT and automatic threshold-capture 
feature and turn on the PVC, rate adaptation and atrioventricular 
node priority function.

**e0247** PREVALENCE OF METABOLIC SYNDROME AND ITS EFFECT 
ON CAROTID ARTERY INTIMA-MEDIA THICKNESS IN 
XINJIANG KAZAK POPULATIONS

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Objective To investigate the prevalence of metabolic syndrome (MS) 
in Xinjiang Kazak populations, and explore the effect of metabolic 
syndrome on Carotid artery intima-media thickness in Kazak 
populations.

Methods A cross sectional study was conducted in 1610 kazak 
participants aged from 19 years to 98 years (mean±SD, 46.7±12. 
654 men and 956 women) in Xinjiang Yili. The National Cholesterol 
Education Program (NCEP) criteria for MS were used in the study. 
Carotid intima-media thickness (IMT) was measured by echo-
cardiography. According to NCEP criteria, populations were divided 
into MS group and non-MS group.

Results The prevalence rate of MS by the NCEP criteria Was 40.1% 
(44.8% in men and 36.9% in women). IMT was significantly higher 
in MS group than non-MS group (p<0.05).