

GW26-e1387**The Expression of HSP22 in Atherosclerotic apoE-Deficient (ApoE^{-/-}) Mice and Therapeutic Impact by Atorvastatin**

Xiaoli Tu, Qi Chen, Hongzhou Zhang, Ruijuan Yan, Yanqing Wu
The Second Affiliated Hospital of Nanchang University

OBJECTIVES The aim of the study is to evaluate the expression level of HSP22 (a small heat shock protein) in atherosclerotic apoE-deficient (ApoE^{-/-}) mice induced by high fat diet and the effects of atorvastatin on it.

METHODS Total thirty-six 8-week-old ApoE^{-/-} male mice were used. They were randomly divided into three groups following one week normal rodent diet: the ND control group (normal diet), the HFD model group (high-fat diet) and the statins intervention group (high-fat diet+atorvastatin 10mg•kg⁻¹•d⁻¹). Atorvastatin was administered to mice after 4 weeks of high-fat diet feeding. All these mice were fed for 12 weeks to establish atherosclerosis models. HE staining and En face Oil Red O staining were used to find out the atherosclerotic lesion burdens in aortas. The expression level of HSP22 in serum was measured by ELISA method. The expression of HSP22 and p-p38 MAPK on aortas were detected by Western blot and immunohistochemistry. Measure the expression of endothelial nitric oxide synthase (eNOS) in aortic through western blot.

RESULTS Few lesions were found in the aortas in ND control group; Apparent atherosclerotic plaque burdens could be seen in HFD model group and statins intervention group, while the atherosclerotic plaque burdens in statins intervention group were notably reduced than HFD model group. The expression of HSP22 protein in serum and aorta in HFD model group and statins intervention group were significantly increased compared with ND control group ($P < 0.01$) and statins intervention group less than HFD model group ($P < 0.01$). The expression level of p-p38MAPK protein was higher in HFD model group as well as the statins intervention group than ND control group ($P < 0.01$), and atorvastatin intervention downregulated its expression compared with HFD model group. The expression of eNOS in HFD model group and statins intervention group were decreased compared with the ND control group ($P < 0.01$), however statins intervention group expressed more eNOS than HFD model group ($P < 0.01$).

CONCLUSIONS This paper demonstrated that in ApoE^{-/-} mice, high fat diet can increase the lipid level which promotes the development of atherosclerosis, upregulate the expression of HSP22 and p-p38MAPK and downregulate the expression of eNOS. This process can be influenced by atorvastatin through reversing the expression of HSP22, p-p38MAPK and eNOS, so it can block the progression of artery atherosclerosis. They suggest that hypercholesterolemia increased the expression of HSP22, p38-MAPK protein and damaged eNOS activity in aorta or serum of ApoE^{-/-} mice, and atorvastatin can prevents or reverses the effects.

GW26-e1523**Matrine Prevents Atrial Fibrosis and Atrial Fibrillation in Postmyocardial Infarction Rats**

Jin Ma, Shiyu Ma, Chunhua Ding
Guangdong Provincial Hospital of Chinese Medicine

OBJECTIVES Atrial fibrosis is a major contributing factor to atrial fibrillation (AF). Anti-fibrotic therapy is expected to be a new treatment of AF. Matrine (Mat) is an alkaloid, extracted from traditional Chinese herb *Sophora flavescens* Ait, which exhibited an anti-fibrosis effect. The purpose of the present study was to investigate whether Mat has a preventing effect on AF in myocardial infarction (MI) rats.

METHODS MI rat model was induced by subcutaneous injection of 120 mg/kg/d isoproterenol for 2 days. One week after the first injection, 100 mg/Kg/d Mat was gavaged for 4 weeks. Cardiac function was measured by echocardiogram. AF inducibility and duration were detected by transesophageal programmed electrical stimulation AF inducing technology. The atrial conduction velocity was detected by multi-electrodes arrays measurements. The expression of type I and III collagen and the changes of transforming growth factor β 1 (TGF- β 1), Smad3, matrix metalloproteinase 9 (MMP-9), and tissue inhibitor of metalloproteinase 1 (TIMP-1) in left atrial were measured by western blot.

RESULTS Four weeks after the administration, Mat-treated rats had lower rates of AF inducibility (44.4% in Mat vs. 86.6% in MI) and shorter AF duration (45.4-329.6s in Mat vs. 441.5-1317.5s in MI, $P < 0.05$). There was decline in left atrial fibrosis areas in Mat-treated rats ($P < 0.01$). Type I and III collagen in left atrium were both decreased in administration group compared with MI group ($P < 0.05$). The left ventricular ejection fraction in Mat increased a little compared to the MI group, but had no statistical difference ($P > 0.05$). Mat-treated rats had faster conduction velocities in their left atrial (31.05±2.23 cm/s in Mat vs. 21.35±1.72 cm/s

in MI, $P < 0.05$) at all pacing cycle lengths. Mat-treated rats had reduced TGF- β 1 protein expression but had no effect on Smad3. The MMP-9 and TIMP-1 protein levels in Mat group were lower than MI group, MMP-9/TIMP-1 ratio decreased.

CONCLUSIONS Mat reduced the AF inducibility rate and duration after MI by inhibiting left atrial fibrosis and improving atrial electrical conduction function via regulating TGF- β 1 and MMP-9/TIMP-1 balance. Anti-fibrotic therapy can prevent AF effectively in the early stage of MI.

GW26-e2106**The Impact of the Drug Composition Containing Medicine Serum Contains Cassia Twig Liquorice Decoction Components on ICa^{-L} of Guinea Pig Single Ventricular Myocyte**

Yongxia Wang,¹ Zuoying Xing,¹ Chulin Zhu,¹ Yingjie Cao,¹ Shuangxing Yuan,² Hongjun Liu,¹ Youping Wang,¹ Yuan Gao,¹ Bin Li,¹ Mingjun Zhu¹

¹Henan traditional Chinese medicine college of the first affiliated hospital; ²Jiyuan city people's hospital

OBJECTIVES Observe the impact of the drug composition containing medicine serum contains Cassia twig liquorice decoction components on ICa^{-L} of guinea pig single ventricular myocyte, to explore the influence of the traditional Chinese medicine material compound to add and subtract changes on medicinal.

METHODS Preparing the medicated serum of rats, acute isolated guinea pigs single ventricular myocyte, will receive the ventricular muscle cells suspension after returning to the physiologic calcium concentration, respectively with blank group containing the concentration of 15% (irrigation suits saline), licorice group (liquorice decoction), cassia twig group (cassia twig decoction), liquorice and cassia twig group (liquorice decoction and cassia twig decoction mixed) and cassia twig liquorice decoction group (cassia twig and licorice by 2:1 ratio mixed decoction), in the medicated serum of rats in 37 °C, 5% CO₂ incubation box incubating cells after 24 hours, switch to the corresponding myocardial cell inside and outside liquid, patch clamp technique was used to measure the peak current density, the activation and inactivation time constant, recovery time constant of the myocardial cells of ICa^{-L}, change between groups were analyzed.

RESULTS Each group of Blank group, liquorice, cassia twig, liquorice and cassia twig group, cassia twig liquorice decoction group the ICa^{-L} peak current density (pA/pF) are: -13.01±1.371, -6.658±0.4806, -6.424±0.4362, -6.634±0.5681 and -7.936±0.4907, inhibition rate is respectively:48.8%; 50.6%; 49%; 39% (n = 8, $P < 0.05$). Activation time constant (τ)ms are: 2.06±0.2718,4.235±0.3971, 4.592±0.4281, 3.647±0.3596 and 3.796±0.2262, each group prolongs the IC^{-L} activation time constant (n = 8, $P < 0.05$). Fast inactivation time constant (τ_f) ms are: 14.58±1.345, 33.16±3.52, 28.52±1.161, 26.65±2.747 and 30.62±2.969, each group extends fast inactivation time constant (n = 8, $P < 0.05$).

Slow inactivation time constant (τ_s) ms are: 109.2±12.16, 193.2±12.08, 201.4±8.814, 180.2±10.16 and 177.8±17.44, each group prolongs slow inactivation constant (n = 8, $P < 0.05$). Recovery time constant (τ) ms are:92.28±19.63, 150.2±22.74, 172.7±32.85, 166.7±28.73 and 163.8±35.46; each group prolongs recovery time (n = 8, $P < 0.05$).

CONCLUSIONS Cassia twig liquorice decoction components have different degree of inhibition for guinea pig ICa^{-L} peak current density, the licorice inhibition rate is the most significant; Extend the activation and inactivation time constant, liquorice and cassia twig group effect are significant; Each group extends recovery time constant.

GW26-e2149**A novel polymorphism of cholesterol absorption gene Numb is associated with Coronary Artery Disease in Han population**

Mayila Abudoukelimu, Zhenyan Fu, Yitong Ma
Department of Cardiology, The First Affiliated Hospital of Xinjiang Medical University, Urumqi, People's Republic of China

OBJECTIVES Hypercholesterolemia is a major risk factor for coronary artery disease (CAD). As Numb is crucial for intestinal cholesterol absorption, therefore, the aim of the present study is to investigate the association between human Numb gene polymorphism and CAD among Han and Uighur population.

METHODS We have conducted two independent case-control studies, Han population (384 CAD patients and 433 controls) and Uighur population (506 CAD patients and 351 controls). All subjects were selected from The First Affiliated Hospital of Xinjiang Medical University and genotyped for four SNPs (rs12435797, rs12108552, rs1019075 and rs17781919). SNP is used as a genetic marker for human Numb