peroxidation index –MDA increased significantly after tachypacing in ATP group (from 1.99±0.51 to 2.94±0.78 nmol/ml, p<0.05), but no change in A+O group. 2. Compare to the result at the same time in R+O group, the ERP shortened dramatically (p<0.05) after tachypacing in ATP group; The Rate adaptive of ERP appeared non-performing significantly after pacing in ATP group; The level of MDA increased (p<0.05) after tachypacing in ATP group.

Conclusion Omeprazole could effectively suppressed tachypacing-induced electrical remodelling in rabbit AF model and greatly attenuated the oxidative stress by downregulating lipid peroxidation.

e0008 EFFECT OF HIF-1A ON MSC TRANSPLANTATION THERAPY OF RAT ACUTE MYOCARDIAL INFARCTION

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[1]Li Xueyuan, [2]Zhang Yang, [1]Qi Guoxian. *[1]The First Hospital of China Medical University; [2]The Centrol Affiliated Hospital of Shenyang Medical College*

Aims To investigate the effect and mechanism of HIF-1a on rat AMI therapy by MSC transplantation. Materials and methods Rat acute myocardial infarction model is made through coronary anterior descending artery ligation. Rats are randomly divided into four groups which are sham operation group, pure infarction group, infarction & MSC transplantation group and infarction & HIF-1a transfected MSC transplantation group. Eight rats from every group are observed. The cell transplantation is carried out immediately after the acute myocardial infarction model is successfully made. The rats are put to death 4 weeks after the operation and the heart is isolated for weight measuring, heart chamber and myocardium thickness testing. We also observe the myocardial angiogenesis in and around the infarct myocardium through HE staining, and the distribution of transplanted cells in the myocardium tissue under immunofluorescence staining. Western blot and RT-PCR is used to test the expression of HIF-1a and VEGF in the myocardium.

Results About 37% of the operations on AMI model making are successful. More MSCs transfected with HIF-1 are alive after transplantation than other groups (p<0.05). Heart weight and left ventricular chamber of the rats transplanted with MSCs transfected with HIF-1a are lower and smaller than the other three groups (p<0.05), the thickness of the left ventricular well is much thicker than the others (p<0.05). Capillary regeneration in and around the infarction area is greater than the others (p<0.05). Higher expression of HIF-1a (p<0.05) and VEGF (p<0.05) can be detected in the myocardium of the arts transplanted with MSCs transfected with HIF-1a.

Conclusions HIF-1a could raise the survival rate of MSC in the infarct myocardium area. MSC transfected with HIF-1a could restrain myocardium remodelling after infarction, and raise the density of capillary around infarction, which might be the mechanism of the former.

e0009 MULTIMODALITY MOLECULAR IMAGING OF ADIPOSE-DERIVED MESENCHYMAL STEM CELLS WITH VEGF IN HINDLIMB ISCHAEMIA MICE

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[1]Fan Weiwei, [1]Cao Feng, [1]Wang Yabin, [2]Liu Junting, [1]Li Shuang, [1]Zhang Rongqing, [1]Li Congye, [1]Li Chengxiang, [2]Tian Jie. *[1]Xijing Hospital; [2]Xidian University*

Background Peripheral arterial disease (PAD) is highly prevalent and particularly in elders, smokers, diabetics or patients with systemic atherosclerosis. Apart from the surgery and medication, stem cell transplantation offers promising approaches for therapeutic angiogenesis and tissue repair. In this study we try to use in vivo multimodality molecular imaging strategies to investigate adipose tissue-derived mesenchymal stem cells (MSCs) survival, function and relative mechanism.

Method MSCs were cultured from murine adipose tissue from transgenic mice, which carried double reporter genes: firefly luciferase (Fluc) and enhanced green fluorescent protein (eGFP), by collagenase digestion method. Hindlimb ischaemia animal model was created in male nude mice by ligating the proximal and distal femoral artery. MSCs (1×10^5) along with/without VEGF (0.4 ng) were transplanted into ischaemic hindlimb. The animals were subjected to be imaged by bioluminescence imaging and CT scan. Laser Doppler perfusion imaging (LDPI) were used to show the spatiotemporal images of peripheral tissue blood perfusion. Micro-CT, histological and molecular analysis were tested to confirm the cells' location and angiogenesis anatomically and mechanically. Result The colour-coded index of LDPI was significantly higher in the MSCs-transplanted group than that in the control group from day 3 to 28 post cell transplantation. On day 3 after transplantation, the bioluminescence signals in MSCs with VEGF group were $4.6\times10^6\pm2.5\times10^5$ photons/s/cm^2/sr, while in MSCs group were $2.8\times10^6\pm3.1\times10^5$ photons/s/cm^2/sr, respectively (p<0.01 vs control). The signals of bioluminescence increased gradually from POD 3 to day 21, which proved survival and proliferation of the MSCs in the host. The group treated with MSCs and VEGF showed higher signals than that injected by MSCs only, which indicated the reinforcement of VEGF. Micro-CT angiography demonstrated more angiogenesis in the hindlimbs of the treated mice on day 21, which were also confirmed by molecular analysis. Histological analysis showed that MSCs therapy recovered vessel density compared with the control group.

Conclusion Bioluminescence fusion with CT scan provides higher detailed 3D imaging for monitoring MSCs in vivo. Angiogenesis activator VEGF might promote MSCs' beneficial function for hindlimb ischaemia therapy.

e0010 ATORVASTATIN INHIBITS OXIDISED LOW DENSITY LIPOPROTEIN INDUCED DIFFERENTIATION OF RAW2647 MURINE MACROPAHGES INTO DENDRITIC LIKE CELLS

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Liu Hua Hu. *Renji Hospital Medical College of Shanghai Jiaotong University*

Dendritic cells (DCs) are professional antigen-presenting cells and have an important role in the pathogenesis of atherosclerosis. It has been confirmed that the optimal oxLDL dose (10 ug/ml) can induce approximatelly 74% RAW264.7 cells differentiate into dendritic-like cells in our previous work. In this study, we examined whether atorvastatin could inhibit the differentiation of mature macrophages into DCs induced by oxLDL, since statins are lipid-lowering drugs. After 24 h treatment with atorvastatin (20 umol/ml), almost all the RAW264.7 cells induced by oxLDL simultaneously remained in cell size and macrophages morphology compared with those induced by oxLDL alone. Flow cytometric analysis detected reduced dendritic cell surface markers (CD40, CD86, MHC Class II and CD1d, table 1). Moreover, atorvastatin-treated RAW264.7 cells induced by oxLDL shown functional changes including increased phagocytic ability (table 2) in a time-dependent manner and reduced TNF-a as well as IL-12 p70 (table 3) productin. On the whole, these data suggest dendritic-like cells origined from macrophages induced by oxLDL treatment can be inhibited by atorvastatin and this may contribute to the effect of statins on preventing the formation of atherosclerotic plaques.

Table 1. dendritic cell surface markers expression (%) in 24 h RAW OxLDL OxLDL+atorvastatin CD40 6.09%±0.48% 51.68%±1.33% * 40.09%±1.59% * CD86 5.00%±0.62% 55.04%±1.27% * 24.29%±1.30% * CD1d MHC Class II 3.64%±0.41% 5.09%±0.13% 33.79%±2.47% * 17.10%±1.42% * 33.40%±11.54% * 22.87%±6.665 *

compared with RAW, p<0.05 Table 2. FITC DEXTRAN uptake (%) Atorvastatin OxLDL OxLDL+atorvastatin 6 h 15.89%±0.25% 18.62%±0.45% * 18.12%±0.76% 12 h 23.96%±1.83% 36.50%± 1.27% * 29.39%±0.50% * 24 h 25.07%±0.76% 26.55%±0.37 30.10%±0.21 *% FITC DEXTRAN uptake by RAW is 17.35%± 0.28%; * compared with Atorvastatin, p<0.05 Table 3. TNF-a (ng/ml) and IL-12 p70 (pg/ml) productin in 24 h DMEM+10%FCS OxLDL OxLDL+atorvastatin TNF-a 0.142±0.04 4.010±0.34 * 1.656±0.252 * IL-12 p70 34.06±5.65 172.89±33.90 * 72.03±5.62 * compared with DMEM+10% FCS, p<0.05.

Table 1 dendritic cell surface markers expression (%) in 24 hs

	RAW	OxLDL	OxLDL+atorvastatin
CD40	6.09%±0.48%	51.68%±1.33%*	40.09%±1.59%*
CD86	5.00%±0.62%	55.04%±1.27%*	24.29%±1.30%*
CD1d	3.64%±0.41%	33.79%±2.47%*	17.10%±1.42%*
MHC Class II	5.09%±0.13%	33.40%±11.54%*	22.87%±6.665

*compared with RAW, p<0.05.

Table 2 FITC DEXTRAN uptake (%)

	Atorvastatin	OxLDL	OxLDL+atorvastatin
6 hs	15.89%±0.25%	18.62%±0.45%*	18.12%±0.76%
12 hs	23.96%±1.83%	36.50%±1.27%*	29.39%±0.50%*
24 hs	25.07%±0.76%	26.55%±0.37	30.10%±0.21%*

FITC DEXTRAN uptake by RAW is 17.35%±0.28%.
*compared with Atorvastatin, p<0.05.

Table 3 TNF-a (ng/ml) and IL-12 p70 (pg/ml) productin in 24 hs

	DMEM+10%FCS	OxLDL	OxLDL+atorvastatin
TNF-a	0.142±0.04	4.010±0.34*	1.656±0.252*
IL-12 p70	34.06±5.65	172.89±33.90*	72.03±5.62

*compared with DMEM+10%FCS, p<0.05.

e0011 THE EFFECT OF SOCS1 SILENCING BY RNA INTERFERENCE ON APOPTOSIS IN HUMAN UMBILICAL VEIN ENDOTHELIAL CELLS

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Ding Hao, Li Ju-Xiang, Zhang Ji-Xiang, Dong Jia-Long, Wan Lei, Xia Zi-Rong, Yan Su-Juan, Luo Wei, Cheng Xiao-Shu, Wu Qing-Hua. *The Second Affiliated Hospital of Nanchang University (Nanchang China)*

Purpose It is well known that apoptosis of endothelial cell (EC) involves the development of atherosclerosis. Down-regulation of SOCS1 (Suppressor of cytokine signalling-1) could induce apoptosis of a variety of cells. However, it has not been reported whether there is any similar phenomenon in EC. Here, we investigated the effect of SOCS1 silencing on Human Umbilical Vein Endothelial Cell (HUVEC) apoptosis induced by hypoxia/reoxygenation and its association with atherosclerosis.
Methods 1. SOCS1 expression in Human Umbilical Vein Endothelial Cell (HUVEC) was determined by RT-PCR and Western Blot. 2. Four different pairs of siRNA (siRNA-1, siRNA-2, siRNA−3, siRNA-4) were designed. 3. The negative control siRNAs with fluorescence were divided into four groups according to different concentrations (25 nmol/l, 50 nmol/l, 75 nmol/l, 100 nmol/l) and transfected into HUVEC with liposome. Fluorescent microscope was employed to determine the concentration at which siRNAs were transfected most effectively. 4. HUVEC were divided into eight groups: four groups transfected by the different siRNAs already designed, GAPDH positive control group (GAPDH-siRNA-PC), negative control group (siRNA-NC), mock control group (Mock) and blank control group (Blank). These siRNAs were transfected at the optimal concentration. After 48 h, the one that most extremely silenced SOCS1 was selected by RT-PCR and Western Blot. 5. The selected siRNA as well as siRNA-NC was transfected at the optimal concentration. After 24 h, HUVEC were divided into four groups: a. siRNA-NC; b. siRNA-NC+hypoxia/reoxygenation; c. SOCS1 siRNA; d. SOCS1 siRNA+hypoxia/reoxygenation. Then, the expressions of Caspase−3 and Bax were detected by Western Blot, and the apoptosis rates were assessed by flow cytometry.
Results 1. It was 50 nmol/l at which siRNAs were transfected most effectively. 2. The expressions of SOCS1 in siRNA-1, siRNA-2, siRNA−3 and siRNA-4 groups declined compared to four control groups (p<0.05). siRNA−3 had the optimal silencing efficiency in four different pairs of siRNA (p<0.05). 3. After RNAi and hypoxia/reoxygenation, the expressions of Caspase−3 and Bax in SOCS1 siRNA+hypoxia/reoxygenation group elevated compared to other three groups (p<0.05). The expressions of Caspase−3 and Bax in siRNA-NC+hypoxia/reoxygenation group increased compared to siRNA-NC group (p<0.05). The expression of Caspase−3 in siRNA-NC+hypoxia/reoxygenation group increased compared to SOCS1 siRNA group (p<0.05). There was no statistical significance of Caspase−3 between siRNA-NC and SOCS1 siRNA groups (p>0.05). Bax in SOCS1 siRNA group was higher than that in siRNA-NC group (p<0.05). 4. After RNAi and hypoxia/reoxygenation, the apoptosis rate of SOCS1 siRNA+hypoxia/reoxygenation group increased compared to other three groups (p<0.05). The apoptosis rate of siRNA-NC+hypoxia/reoxygenation group increased compared to siRNA-NC and SOCS1 siRNA groups (p<0.05). There was no statistical significance between siRNA-NC and SOCS1 siRNA groups (p>0.05).
Conclusion 1. The expression of SOCS1 in EC could be inhibited effectively by RNAi. 2. SOCS1 silencing could exacerbate EC apoptosis induced by hypoxia/reoxygenation.

e0012 APELIN STIMULATES GLUCOSE UPTAKE THROUGH PI3KAKT PATHWAY IN INSULIN RESISTANT 3T3L1 ADIPOCYTES

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Zhu Shunming, Cao Feng, Li Weijie, Wang Chen, Wang Yabin, Liang Dong, Wang Haichang. *Xijing Hospital*

Background Apelin, a cytokine mainly secreted by adipocytes, shows beneficial effect on insulin resistance. However, the molecular mechanism underlying is still poorly understood. This study was to investigate the mechanisms of apelin on insulin resistant improvement in 3T3-L1 adipocytes.
Methods Insulin resistance in 3T3-L1 adipocytes was induced by TNF-α. The effects of apelin on glucose metabolism were investigated by 3H-2-Deoxy-glucose uptake. The effects of apelin on glucose transporter four translocation were visualised by immunofluorescence microscopy. The role of PI3K/Akt pathway was assessed by immunoblotting. The effects of apelin on interlukin-6 and adiponectin mRNA expression were observed by RT-PCR.
Results Insulin-stimulated glucose uptake could be reduced by 47% by treatment with TNF-α for 24 h. Apelin could improve insulin-stimulated glucose uptake with the involvement of PI3K/Akt pathway. In addition, microscopy imaging showed apelin could increase GLUT4 translocation to plasma membrane. RT-PCR assay indicated apelin also increased adiponectin while reduced interlukin-6 mRNA expression in insulin-resistant adipocytes.
Conclusion This study suggested that apelin stimulates glucose uptake through PI3K/Akt pathway and GLUT4 translocation, while moderate inflammatory responses in insulin-resistant 3T3-L1 adipocytes.