groups: normoxic control group (control group), normoxia+sRAGE group, hypoxia/ reoxygenation (H/R) group (model group), hypoxia/reoxygenation+sRAGE (H/R+sRAGE) group (experimental group). The viability of myocardial cell was detected by MTT. The leakage of lactate dehydrogenase in culture medium (LDH) was detected by colorimetric method. The activity of superoxide dismutase (SOD) was detected by xanthine oxidase. The content of malondialdehyde (MDA) was detected by thiobarbituric acid color method. The intensity of fluorescence was detected by DCFH-DA fluorescent probe combined flow cytometry-Reactive oxygen species (ROS) levels in response; nitrate reduce determination of nitric oxide (NO) levels. Results: Compared with H/R group, H/R+sRAGE group can improve the myocardial viability (0.0472±0.0021 vs. 0.0199±0.0012), reduce the amount of LDH leakage (0.0174±0.0054 vs. 0.0642±0.0189), increase SOD activity (14.066±6.3189 vs. 10.418±6.1931), lower MDA (1.1312±0.1975 vs. 1.8200±0.1372) and ROS levels (0.9223±0.1259 vs. 1.3368±0.0691) (P<0.05). Compared with H/R group, directly mitochondrial cells and antagonize the xanthine oxidase, the protective role is related to inhibition of oxidative stress.

GW25-e3405
The Effect of Huoxue Qianyang Recipe on the Myocardial Gene Expression in Insulin Signaling Pathway of “Blood stasis-Yang-kang-Phlegma” Hypertensive Rats

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Objectives: To investigate the Huoxue qianyang recipe’s influence on GCK, G6PC and Pdk4 gene expression in the myocardial insulin signaling pathway of “Blood stasis-Yang-kang-Phlegma” hypertensive rats. Methods: 36 five-week-old spontaneously hypertensive male rats (spontaneously hypertensive rat, SHR) were selected as objects, and were randomly divided into two groups: control group (SHR blank control group (SHR-C group) and SHR model group) according to the random number table; rats in SHR model group were treated with Acomine Tang via gavage and fat diet for 4 weeks, and then were randomly divided into SHR control group (SHR-M group) and SHR experiment group (SHR-H group). GCK, G6PC and Pdk4 were selected as the normal control group (WKY-C group). The rats’ iritability were observed, the blood pressure of tail artery were recorded. 4 weeks later, the fasting glucose, insulin, lipids, blood viscosity, angio-tension II and other indicators were obtained. The HOMA-IR index was calculated. Then the rats were anesthetized, and the heart were removed for histological sections. The functional genes in myocardial tissue RNA were screened via insulin functional gene chip, and major key genes (GCK gene, G6PC gene and Pdk4 gene) were selected as the target. The level of GCK mRNA, G6PC mRNA and Pdk4 mRNA were quantitatively identified via PCR method, and the protein expression of GCK, G6PC and Pdk4 gene were detected with Western Blot method.

Results: Before the treatment, the three SHR groups’ HOMA-IR index were all higher than the WKY group (P<0.01), and there was no difference among the SHR groups (P>0.05). After treatment, SHR-C, SHR-M groups’ HOMA-IR index increased than before (P<0.01), and SHR-H group’s HOMA-IR index didn’t change significantly (P>0.05). Among three SHR groups, SHR-C had the highest HOMA-IR index (P>0.01), and SHR-H had the lowest (P<0.01). WKY-C, G6PC mRNA expression (P<0.01), however SHR-M group had the lowest ones (P<0.01). GCK mRNA expression showed notable increase after modeling and notable increase after treatment. SHR-M group had the highest Pdk4 mRNA expression (P<0.01), however other groups had no significant different (P>0.05).The Pdk4 mRNA increased after modeling and decreased after treatment. GCK protein level in SHR group rats were significantly lower than WKY-C group (P<0.05), SHR-M group had a further decrease than the other two SHR groups. G6PC protein level in SHR group rats were significantly lower than WKY-C group (P<0.01), and SHR-M group had a lower G6PC protein level than SHR-C group (P<0.05). SHR-M group and SHR-H group had significantly higher Pdk4 protein level than SHR-C group, WKY-C group (P<0.01), but there was no significant difference between the two groups.

Conclusions: Huoxue qianyang recipe (huoxue qianyang qian) may improve insulin resistance through increasing GCK, G6PC gene expression and decreasing Pdk4 gene expression that involved in insulin PI3K signaling pathway.

GW25-e3453
Effect of Salidroside on the myocardial mitochondria function of rats after acute exhaustive
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Objectives: Mitochondria are the sites of aerobic respiration, and generally are the major energy production center in eukaryotes. Our work is to research the the effect of salidroside (SAL) on the myocardial mitochondria function of rats after acute exhaustive.

Methods: (1) A total of 40 health male Sprague-Dawley rats were randomly divided into four groups (n=10 in each group), including sedentary control group, exhausted group, low-dose SAL group, high-dose SAL group. Each group was administrated with low-dose SAL (100mg/Kg), high-dose SAL (300mg/Kg) or saline intragastrically for 14 days. Rats were killed immediately after single bout of exhaustive exercise (Thomas exhausted standardization) besides sedentary control group which were killed in resting state during the same period. (2) Myocardium samples were taken to examine histomorphologic changes by light microscope and electron microscope alternatively. (3) ELISA study for concentration of cTnI, CK, MB in plasma and myocardial tissue. (4) The state 3 respiratory ability and state 4 respiratory ability of the myocardial mitochondrial complexes I with glutamate and malate as substrates, state 3 respiratory ability of the myocardial mitochondrial complexes II with succinate, used to study the state 3 respiratory ability of the myocardial mitochondrial complexes II with TMPD and Ascorbate. were measured by high-resolution respirometry in order to compared the Respiratory Control Ratio (RCR). Results: (1) Serum cTnI assay results: Compared with control group, there are no significant differences in high-dose group (P>0.05), but the exhausted group and low-dose group are significant higher (P<0.05). (2) Serum CK assay results: Compared with control group, the high-dose group, low-dose group and exhaust group are all significant higher (P<0.05). (3) Serum MB assay results: There were no significant difference between high-dose group and control group (P>0.05), the low-dose group and exhausted group are all significant higher (P<0.05). (4) State 4 respiratory ability of the myocardial mitochondrial complexes I: There are no significant difference in each group (P>0.05). (5) State 3 respiratory ability of the myocardial mitochondrial complexes I: Compared with control group, the high-dose group, low-dose group and exhaust group are all significant decreased (P<0.05). (6) Respiratory control ratio of the myocardial mitochondrial complex: Compared with control group, the high-dose group, low-dose group and exhausted group are all significant decreased (P<0.05). (7) State 3 respiratory ability of the myocardial mitochondrial complexes II: Compared with control group, there are no significant difference between in high-dose group (P>0.05), but the low-dose group and exhausted group are significant decrease (P<0.05). (8) State 3 respiratory ability of the myocardial mitochondrial complexes II: The high-dose group, low-dose group and exhausted group are all significant higher (P<0.05).

Conclusions: (1) Acute exhaustive exercise cause myocardial damage. High doses of Salidroside can prevent myocardial damage. (2) Acute exhaustive exercise would induce the respiratory rate of mitochondrial complex I, II, IV in state 3. (3) Salidroside can inhibit myocardial mitochondria respiratory rate and improve the OCR function. Furthermore, the protective effects of salidroside, high does is better than the low dose.

GW25-e4140
Expression and effect of TESSTIN on atherosclerosis in Rabbits

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Objectives: TES gene is a component of focal adhesions and cell-to-cell junctions located at 7q31.2. Our purpose was to investigate the expression of TES gene, and its relationship with the development of atherosclerosis in rabbits. Methods: 32 New Zealand rabbits were divided into two groups randomly: control group and high-cholesterol group. The level of lipids was measured before and after 3-months’ high-cholesterol intervention respectively. Immuno-histochemistry/fluorescence was used to detect the deposition of TES protein in aorta tissues in the two groups; real-time polymerase chain reaction (PCR) and Western blot was performed to compare the expression of TES protein in aorta tissues between the two groups. The correlations of TES gene to the development of atherosclerosis were also analyzed.

Results: After the atherosclerosis model established, the level of the serum lipids in high-cholesterol group significantly compared with control group, with statistical difference between the two groups (P<0.05). We found TES protein expressed in the endothelium layer of arteries predominantly. Real-time PCR analysis showed that the mRNA level of TES was markedly reduced by 10-fold in high-cholesterol group compared with control group (P<0.01), and Western blot analysis also showed the protein level was lower in high-cholesterol group (P<0.05).

Conclusions: The expression level of TES is significantly down-regulated in atherosclerosis. It suggests that TES may play a novel role in the development of atherosclerosis.

GW25-e4142
A new and simple method for isolation of the rabbit’s coronary artery without using colored latex and the dissecting microscope

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Objectives: The rabbit, a common experimental animal, has been widely used in vasomotor research. However, it is difficult to isolate a small caliber coronary artery to observe and separate the coronary artery. Commonly adopted methods in the coronary artery separation in rabbit are: Internal filling, acid separation method and the application of microsurgical microscope. Among these former two uses a color solution, and probably influence the result of HE staining. While the use of microscope is a time consuming complex process which needs higher operating technology. Therefore the aim of this paper was to establish a new and simple method for isolation of rabbit’s coronary artery. Methods: Healthy male New Zealand rabbit obtained from Tianjin Aioyide Company, 1.5 years old and weighed 2.5kg, was anaesthetized with 30 mg/kg of 3% Pentobarbital sodium, and then the thoracic aorta was dissected and cut into small pieces, five in a envelope. After the catheters inserted into aorta, 4% formaldehyde was injected into the aorta. In this process, the coronary artery turned white gradually. After 20 minutes, the heart was isolated including the aortic arch. Then a coronary artery guide wire was plunged into
Myocardial infarction accelerates the activation of systemic and local cellular immunity in STZ-induced type 1 diabetic rats

Methods: We performed the comparison in four separate groups: 1) rats with sham surgery; 2) rats with surgically induced myocardial infarction (MI, n=10); 3) STZ-induced type 1 diabetic rats (DB, n=10); 4) STZ-induced type 1 diabetic rats with surgically induced myocardial infarction (DB+MI, n=10). The parameters of cellular immunity in the heart, spleen and blood were evaluated by flow cytometry and immunohistochemistry etc. In addition, cardiac remodeling and function was also evaluated.

Results: Twelve weeks after the operation, compared with DB or MI rats, DB+MI rats exhibited the following: 1) significantly increased cardiac enlargement, fibrosis and deteriorated cardiac function; 2) significantly increased infiltration of CD4+ T cells and the expression of IFN-γ, IL-17 and IL-4 in heart; 3) significantly increased proportion of CD4+ T cells and producing-IFN-γ, IL-17 and IL-4 CD4+ T cells and a decreased Treg/Ti ratio in spleen; 4) significantly increased the proportion of producing IFN-γ, IL-17 and IL-4 CD4+ T cells and Treg in blood. However the circulating immune complexes (CIC) and IgG did not show the difference between them.

Conclusions: In this study, MI significantly accelerated cardiac infiltration of CD4+ T cells and the spleen and serum activation of CD4+ T cells especially its inflammation associated subgroup in STZ-induced type 1 diabetic rats. Systemic and local cellular immunity probably involved in the post-MI CHF progression in diabetes.

Incidence of Acute Mountain Sickness in Young Adults at 3200 Meters

Methods: The purpose of this study was to compare two scoring systems used for diagnosis of acute mountain sickness (AMS): the Lake Louise Scoring (AMS-LLS) and Chinese Scoring System (AMS-CSS).

Results:
- The AMS incidence was 17.11% (n = 58) and 29.79% (n = 101) according to AMS-LLS and AMS-CSS, respectively. Two participants (0.59%) experienced high altitude pulmonary edema.
- The AMS-LLS and AMS-CSS showed the highest incidence of AMS after the second night at high altitude. There was a good correlation between AMS-CSS and AMS-LLS, but a little different details, with AMS-CSS showing a positive diagnosis outnumbers the LLS standard, but there might be a false positive.
- AMS-CSS is similar, but a little different details, with AMS-LLS. AMS-CSS identified all AMS cases diagnosed by AMS-LLS, plus an additional 43 missed by AMS-LLS. The AMS-CSS had a sensitivity of 100%, 84.7%, 57.4% and 100%, respectively.
- There was no relationship between oxygen saturation (SpO2) levels and AMS scores at 3200 m.

Conclusion: The first time to report that clopidogrel improves endothelial function in healthy Chinese subjects, which is irrelevant with CYP2C19 genotype and independent of antiplatelet action.

Prevalence and Incidence of Acute Mountain Sickness in Young Adults at 3200 m

Methods: We conducted a cross-sectional study with young adults residing at sea level (mean ± SD: 24.59 ± 3.27 years; height 173.93 ± 5.18 cm; weight 68.21 ± 7.79 kg) ascended to 3200 m by train and bus, a total journey time of 48 hours, all the persons were ascended as same way, and were divided into three groups. Group 1 (n = 88), group 2 (n = 91) and group 3 (n = 160) were assessed after one, two and three nights, respectively, at altitude.

Results: The overall incidence of AMS was 17.11% (n = 58) and 29.79% (n = 101) according to AMS-LLS and AMS-CSS, respectively. Two participants (0.59%) experienced high altitude pulmonary edema. Both scoring systems showed the highest incidence of AMS after the second night at high altitude. There was a good correlation between AMS-CSS and AMS-LLS scores (Pearson P = 0.820, P < 0.001), AMS-CSS identified all AMS cases diagnosed by AMS-LLS, plus an additional 43 missed by AMS-LLS. The AMS-CSS had a sensitivity of 100%, 84.7%, 57.4% and 100%, respectively.

Conclusion: There was no relationship between oxygen saturation (SpO2) levels and AMS scores at 3200 m.