GW25-e1539
Effects of acute exercise on plasma FGF-21 level and glucose lipid metabolism in male obese youth
Li Juan1, Chen Wei2
1PE college of Yan Shan University, 2Hebei Normal University of Science and Technology

Objectives: Obesity is a serious health problem in worldwide, which is think the result of genetic and environmental factors, especially an inappropriate lifestyle, characterized by high fat diet and physical inactivity. Obesity, insulin resistance and dyslipidemia often occur in concert, which in partly contribute to cardiovascular disease. Physical exercise strongly encouraged for obese people due to physical inactivity is an important contributor to the development of cardiovascular disease. Fibroblast growth factor -21 (FGF-21) is a cytokine closely related to the glucose and lipid metabolism, which is an important member of the fibroblast growth factor family was found in recent years, it mainly secreted by the liver and adipose tissue. It was recently shown that FGF-21 levels were positively associated with physical activity levels in healthy obese people. Regular exercise also plays an important role in improving the level of FGF-21. Recent research has also found that acute exercise can increase the level of plasma FGF-21 and promote fat decomposition, improve insulin sensitivity in healthy subjects; the increased level of FGF-21 may mediate glucose and lipid metabolism.

Methods: Simple obese male students (OG, n=10) and healthy non obese male students (CG, n=10) take 2 different intensity exercise test (VO2max 50% vs VO2max 75%) respectively, the venous blood was collected in a quiet state, immediately after exercise, 30min, 60min and 120min, plasma FGF-21, blood glucose, blood insulin and free fatty acids levels were measured.

Results: The AUC of FGF-21 were negatively correlated with AUC of insulin (r=-0.53, P<0.015) after acute exercise, in addition, the AUC of FGF-21 were positively correlated with AUC of FFA (r=0.536, P<0.009) after acute exercise in OG.

Conclusions: There is a certain degree of FGF-21 resistance in obese young men. And the response of FGF-21 to acute exercise is reduced in male obese youth compare with healthy subjects; the increased level of FGF-21 may mediate glucose and lipid metabolism regulated by acute exercise in healthy subjects, although the glycometabolism was not influenced by increased FGF-21 induced by acute exercise, but may contribute to their fat decomposition in male obese youth.

Cardiovascular Disease Clinical Research

GW25-e0806
Autologous CD133+ bone marrow cells for regeneration of ischaemic myocardium
Qin Jie1, Xiaoli Wang2, Mingjun Bai1, Shaozhong Huang3, Qin Jie1
1Department of Radiology, The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou 510630, China, 2Department of Ultrasound, The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou 510630, China, 3Division of Cardiothoracic Surgery, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou 510630, China

Objectives: To perform a double-blinded, randomized, placebo-controlled trial to determine the impact of CDI33+ bone marrow cells (BMC) on left ventricular (LV) function and clinical symptoms.

Methods: 70 patients with chronic ischemic heart disease and impaired LV function (left ventricular ejection fraction, LVEF <35%) were randomized (1:1) to inject autologous CD133+ BMC and placebo in the non-transmural, hypokinetic infarct border zone. Pre-operative LVEF was 29.7% in CDI33+ patients and 28.4% in placebo patients. Outcome was assessed after 6 months, and the primary endpoint was LVEF measured by cardiac magnetic resonance imaging (MRI) at rest.

Results: There was no difference in 5-min walking distance between groups at follow-up, and New York Heart Association class improved more in the placebo group (P=0.004). CDI33+ BMC treated patients showed a better recovery of regional wall motion when the target area was posterior by echocardiography. By cardiac MRI, LVEF at 6 months was 35.8% in the placebo group and 33.7% in BMC group (P=0.42), with an average inter-group difference of -2.4% (95% CI -4.2-2.6). Systolic or diastolic LV volume at 6 months was not different. In the CDi33+ group, myocardial perfusion at rest recovered better in LV segments than in the placebo group (10 vs. 3%; P<0.001). Scar mass decreased by 2.5±0.6 g in CDi33+ patients (P<0.05), but was unchanged in the placebo group (0.4±0.6 g; P=0.6; inter-group difference, mean change = 2.5 g (95% CI -1.5-4.8)).

Conclusions: Although there may be some improvements in scar size and regional perfusion, intra-myocardial injection of CD133+ BMC has no effect on global LV ejection and clinical symptoms.

GW25-e0511
A Safety and Efficiency Study of CSWT For CAD Patients Without Coronary Artery Revascularization
Yang Ping, Guo Tao, Peng Yan-Zhu, Zhuo Ling, Wang Yu, Cai Hong Yan
Department of Cardiology, The First Affiliated Hospital of Running Medical University

Objectives: To evaluate the effectiveness and safety of CSWT for treatment of CAD patients without coronary artery revascularization.

Methods: A total of 87 CAD patients without coronary artery revascularization were enrolled in this study, 68 male and 19 female, aged from 43 to 80 years (66.8±8.41 years). The patients were divided into three group by using randomised single-blind method.

Results: During the CSWT, the angina of the patients was not to be worse and no heart failure, no hemorrhage, no embolism, no malignant arrhythmia (ventricular tachycardia/ fibrillation), no myocardial necrosis as well as no any obvious changes on blood pressure, heart rate and blood oxygen saturation. In follow-up from 3 months to 12 months, the NYHA class, CCS angina scale, SAQ scale, 6MWTT and nitroglycerin used dosage, 6-min walk test (6MWTT), left ventricular ejection fraction (LVEF), left ventricular end diastolic dimension (LVEDD) and so on to evaluate the effect of CSWT.

Conclusions: (1) CSWT is a non-invasive, safe, effective, easy to duplicate, new method to promote myocardial angiogenesis. (2) CSWT could relieve myocardial ischemia related symptoms in the early stage, improved myocardial perfusion and metabolism, increased the coronary artery reserve, improved myocardial perfusion, intra-myocardial injection of CD133+ BMC has no effect on global LVEF function and conventional treatment protocols.

GW25-e0809
Intracoronary mesenchymal stem cells infusion after acute myocardial infarction: a meta-analysis on clinical trials
Qin Jie1, Mingjun Bai1, Yongjiang Mao1, Qin Jie1
1Department of Radiology, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou 510630, China, 2Department of Ultrasound, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou 510630, China

Objectives: This meta-analysis aims to evaluate the efficacy of mesenchymal stem cells (MSCs) therapy in patients with acute myocardial infarction.

Methods: A random-effects meta-analysis was performed on randomized controlled trials (RCTs) investigating the effects of MSCs therapy in patients with acute myocardial infarction that were published from January 2000 to January 2014. The end points were left ventricular (LV) ejection fraction, LV end-systolic and end-diastolic volumes, infarct size, and major adverse cardiac and cerebrovascular event rates.

Results: Combining the results of 28 RCTs, LV ejection fraction increased by +2.25% (95% confidence interval [CI]: 0.68-3.82; P<0.01) in the MSCs group as compared with controls, evoked by a preservation of LV end-systolic volume (–4.05 mL; 95% CI -6.91–1.18; P<0.01) and a reduction in infarct size (<2.69%; 95% CI -4.83–0.45; P<0.01). There is no effect on cardiac function, volumes, or infarct size in RCTs (n=11) that used magnetic resonance imaging (MRI) -derived end points. No
beneficial effect could be detected on major adverse cardiac and cerebrovascular event rates after MSC infusion 6 months later.

**Conclusions:** Intracoronary infusion of MSCs does not improve clinical outcome and cardiac function on MRI-derived parameters.

**GW25-e1423**

**Correlation analysis between gene single nucleotide polymorphisms of P2Y12 and coronary heart disease**

Zhang Xinxia
Shenzhen Futian Hospital affiliated of Guangdong Medical College

**Objectives:** To investigate correlation between P2Y12 gene polymorphisms (rs2046934, rs6787801, rs6788347 and rs677801) and coronary heart disease.

**Methods:** 455 patients with coronary artery disease who were diagnosed by coronary angiography or coronary artery CT angiography and 90 health control individuals were enrolled in this study. The single nucleotide polymorphisms rs2046934, rs6787801, rs6788347 and rs677801 of P2Y12 gene were detected by MassARRAY Time of Flight Mass Spectrometry. The genotypes and allele frequencies in the two groups were compared.

**Results:** Genotypes and frequencies of P2Y12 gene polymorphisms rs2046934 in coronary heart disease group and control group were as below: CC genotype 2.4% vs. 4.4%, TT genotype 71.0% vs. 74.4%, CT genotype 26.6% vs. 21.2%; and C allele frequencies were 2.4% vs. 4.4%, T allele frequencies were 84.3% vs. 85.0%. There was no significant difference between the two groups (P>0.05). Genotypes and frequencies of polymorphisms rs6787801 in coronary heart disease group and control group were as below: AA genotype 19.7% vs. 17.8%, AG genotype 36.9% vs. 31.3%, GA genotype 45.7% vs. 51.1%; and G allele frequencies 40.2% vs. 43.3%; A allele frequencies 59.8% vs. 56.7%. There was no significant difference between these two groups (P>0.05). Genotypes and frequencies of P2Y12 gene polymorphisms rs6788347 and rs6788347 in coronary heart disease group and control group were as below: AA genotype 9.1% vs. 6.7%, GG genotype 41.6% vs. 52.2%, AG genotype 49.3% vs. 41.1%; and A allele frequencies 29.9% vs. 27.2%, G allele frequencies 70.1% vs. 72.8%. There was no significant difference between control group and coronary heart disease group (P>0.05). Genotypes and frequencies of P2Y12 gene polymorphisms rs6801273 in coronary heart disease group and control group were as below: CC genotype 13.4% vs. 10.0%, TT genotype 42.6% vs. 50.0%, CT genotype 44.0% vs. 40.0%; and C allele frequencies 35.4% vs. 30.0%, T allele frequencies 64.6% vs. 70.0%. There was no significant difference between the compared groups (P>0.05).

**Conclusions:** Single Nucleotide Polymorphisms of P2Y12 gene polymorphisms in rs2046934, rs6787801, rs6788347 and rs6787801 are not associated with coronary heart disease.

**GW25-e4527**

**Dynamic variance of plasma superoxide dismutase (SOD) and malondialdehyde (MDA) after ischemic postconditioning in patients with acute ST-segment elevated myocardial infarction**

Xiao Jun
Department of Cardiology, 309th Hospital of Chinese PLA, Beijing, China

**Objectives:** The dynamic variance of plasma superoxide dismutase (SOD) and malondialdehyde (MDA) in acute myocardial infarction after ischemic postconditioning has not been reported. The present study was to explore the effect of ischemic postconditioning on plasma superoxide dismutase (SOD) and malondialdehyde (MDA) in acute ST-segment elevated myocardial infarction and clinical outcomes.

**Methods:** One hundred twenty patients [aged (60±16) years; 86% male] of acute myocardial infarction treated with emergency percutaneous coronary intervention (PCI) were randomly assigned to a postconditioning or standard protocol. The plasma SOD and MDA concentrations were compared between two groups.

**Results:** There was no significant difference in the two groups in the left ventricular ejection fraction (LVEF), left ventricular end-diastolic volume index (LVEDVI), left ventricular end-systolic volume index (LVESVI), regional wall movement index (RWMII) and occurrence rate of cardiac events at 2 weeks. There was a significant difference in plasma SOD concentration in the postconditioning group was 107.3±36.8 ng/ml vs. 85.7±30.3 ng/ml at 48 h respectively than those in the standard group. However, there was no significant difference in plasma MDA concentration in the postconditioning group was lower than those in the standard group. There was a significant difference in plasma SOD concentration between two groups at 36 h, 48 h and 72 h and plasma MDA concentration between two groups at 48 h, 72 h and 96 h.

**Conclusions:** Ischemic postconditioning can increase plasma SOD concentration and decrease MDA concentration in acute ST-segment elevated myocardial infarction.