GW26-e4495
A study of the association of plasma irisin levels and coronary artery diseases
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OBJECTIVES Irisin is a newly discovered myokine, which is involved in energy metabolism and associated with ‘brown-fat’ of the white adipose tissue, obesity, diabetes mellitus and metabolic syndrome. It’s still uncertain that whether plasma irisin level is associated with coronary artery diseases (CAD). The purpose of this study is to explore the relationship between circulating irisin levels and CAD.

METHODS A total of 209 patients complained with ‘chest discomfort’ undergone coronary angiography were enrolled in this study. They were divided into non-CAD (n=74) and CAD (n=135) groups. The CAD group was further divided into three groups: SAP (n=52), UAP (n=30), AMI (n=53). The levels of plasma irisin, clinical parameters, lipid profile and C reactive protein (CRP) were measured, and echocardiography was performed on enrolled subjects.

RESULTS The levels of plasma irisin were significantly higher in the CAD group (124.10±58.56 ng/mL) than those in the non-CAD group (95.66±59.8 ng/mL), p<0.001. And positively associated with aortic root diameter (0.181, p=0.046), left ventricular posterior wall thickness (0.191, p=0.035), interventricular septum thickness (0.207, p=0.022), and multiple linear regression reveal that irisin concentration is associated with blood uric acid (r=0.397, p=0.003), serum creatinine (r=-0.239, p=0.03) independently. The levels of plasma irisin were significantly higher in the SAP group than UAP group (103.48±61.50 ng/mL VS 133.67±58.24 ng/mL, P=0.023) and AMI group (103.48±61.50 ng/mL VS 139.20±50.12 ng/mL, P<0.001). But it is not significantly different between UAP and AMI group (122.67±58.24 ng/mL VS 139.20±50.12 ng/mL, P=0.679). The plasma irisin concentration of CAD patients with normal renal function or abnormal renal function were 125.69±59.66 ng/mL, 110.78±51.09 ng/mL respectively. After one year of follow up of AMI group subjects, the data show that the incidence of MACEs is lower in irisin lower than irisin higher group (54.14%) than irisin higher group (61.50%) (P=0.029).

CONCLUSIONS The plasma irisin concentration is higher in CAD patients than non-CAD subjects, and correlated with aortic root diameter, left ventricular posterior wall thickness, interventricular septum thickness, blood uric acid, serum creatinine in the CAD patients. And gradually increasing in the subgroups of CAD (SAP, UAP, AMI). And lower in patients of CAD with normal renal function than abnormal renal function. The incidence of MACEs is lower in irisin higher than irisin lower group (54.14%) than irisin lower group (61.50%) (P=0.029).

GW26-e0397
Impact of rhBNP on reperfusion injury in the patients with acute myocardial infarction undergoing emergent percutaneous coronary intervention
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OBJECTIVES To investigate the effect of Lyophilized Recombinant Human Brain Natriuretic Peptide (rhBNP) on myocardial reperfusion injury in the patients with ST-segment elevation myocardial infarction (STEMI) of anterior wall undergoing emergent percutaneous coronary intervention (PCI).

METHODS This prospective study included patients with acute STEMI of anterior wall undergoing emergent PCI hospitalized at Affiliated Zhongshan hospital of Dalian University from January 2013 to October 2014. Patients with SBP>100mmHg, culprit vessel blood flow of TIMI 2-3 before PCI, and PCI related insufficiency were excluded. 60 patients were randomly divided into rhBNP group (n=29) and control group (n=31). In the rhBNP group, rhBNP was injected by intravenous with 1.5ug/kg between 3 minutes and 5 minutes followed with continuous infusion of 0.004-0.01ug-1.min-1, and the totle dose of rhBNP was 0.5ug in each patient. Other procedures of rhBNP group were similar with those of control group. Patients’ demographic, clinical and angiographic characteristics were obtained. The superoxide dismutase (SOD), malondialdehyde (MDA) were measured. The parameters presenting myocardial infarction including corrected TIMI frame count (CTFC) and myocardial blush grade (MBG) were calculated. The reperfusion arrhythmias was recorded. Left ventricular ejection fraction (LVEF) of the recruited patients was assessed at 3-5 days and 6 weeks after emergency PCI.

RESULTS The serum level of MDA significantly lower(5.52±1.21 vs.13.71±3.28, p<0.05). RhBNP group patients’ MBG was higher than that in control group at both 3 days and 6 weeks after emergency PCI (51.45±10.12 vs.22.97±3.28, p<0.05). The MBG ≥3 was more common(86.21% vs. 61.29%, p<0.05), and incidence of reperfusion arrhythmias was less common in rhBNP group than those in control group (all p<0.05). RhBNP group patients’ LVEF was higher than that in control group both at 3 days and 6 weeks after emergency PCI (53.82±9.26 vs. 51.45±10.12 and 55.12±5.4 vs. 52.17±3.03 respectively, all p<0.05). No significant differences including age, gender, hypertension, diabetes, hyperlipidemia, history of previous myocardial infarction, blood pressure and heart rate before PCI, time from onset to balloon, diseased vessel number and culprit lesion site were observed between the two groups.

CONCLUSIONS RhBNP can effectively reduce myocardial ischemic-related injury in patients with STEMI of anterior wall after emergency PCI.

GW26-e0387
Thromboelastograph in the clinical application of acute coronary syndrome
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OBJECTIVES The purpose of this study is to clear the relationship platelet reactivity to adenosine diphosphate by Thromboelastograph with ischemic events after PCI.

METHODS We measured platelet reactivity to adenosine diphosphate (ADP) by Thromboelastograph in acute coronary syndrome undergoing PCI. All patients take orally clopidogrel with loading dose of 300 mg, or maintenance dose of 75 mg at least 3 days. According to the result of Thromboelastograph, We divide the ADP inhibition rate into the two groups (A group ADP inhibition rate more than 50% and B group ADP inhibition rate less than 50%), and observe six to nine months events of the two groups. End point events were defined as new cardiovascular events (death, myocardial infarction, myocardial ischemia, peripheral vascular disease) and new cerebrovascular events (cerebral infarct and hemorrhage).

RESULTS Within six to nine months after discharge, 11 of 22 patients in A group occurred events, including TIA (n=1), unstable angina (n=5), variant angina pectoris (n=1), NSTEMI(n=1), STEMI(n=1), cardiac insufficiency(n=1). However in B group, there were 19 events that occurred in 67 patients within six to nine months after discharge, including death(n=1), cerebral infarction(n=1), NSTEMI(n=1), unstable angina(n=6). There was significant statistical difference between the two groups on gender, history of high blood pressure, use of aspirin, platelet inhibition mediated by ADP, AA (arachidonic acid) of platelet inhibition mediated by AA (arachidonic acid), ADP mediated MAP(0.004,P=0.022,P=0.029,P=0.00,P=0.0). Logistic regression analyses revealed that ADP mediated MA is the independent predict factors of the occurrence of major cardiovascular and cerebrovascular events (P=0.029).

CONCLUSIONS All data shows that ADP mediated platelet MA value can guide antiplatelet therapy in patients at risk of acute coronary syndrome, so as to reduce the incidence of end point events.
RESULTS (1) Compared with control group, the expression of 4 mRNAs related to coagulant factors (FGB, F5, F8 and F13) was obviously elevated (P < 0.05) in patients with CAD, and the expression of 2 mRNAs (F5 and F8) among 14 genes was significantly up-regulated (P < 0.01) in the AMI groups. (2) In AMI group, the expression of all mRNAs related to anticoagulant factors was higher than SAP and control groups, especially, the expression of 3 mRNA (TFPI THBD and SERPINA1) among 8 gens was significantly up-regulated (P < 0.01). (3) Compared with control group, the expression of 3 fibrosis factor-related mRNAs (SERPINE1 PLAU and LAU1) was significantly up-regulated (P < 0.01) in both groups AMI and SAP. PLAT mRNA expression was not obviously elevated and PLG mRNA expression was down-regulated in AMI and SAP groups.

CONCLUSIONS In this study, there were imbalances in the expression of mRNAs among coagulation, anticoagulation and fibrinolysis: the expression of many mRNAs related to coagulant factors and anticoagulant factors was significantly up-regulated, and the expression of mRNAs related to fibrinolytic system was disordered. This disequilibrium plays an important role in the progression of coronary artery disease and arterial thrombosis.

GW26-e2511 The Correlation Analysis between plasma Cystatin C and the prognosis of patients with STEMI
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OBJECTIVES In recent years, the mortality of acute ST segment Elevation Myocardial Infarction (STEMI) has been increased. Early assessment for prognosis of STEMI patients is very significant. Although there already have some clinical marker for predicting the prognosis of STEMI, it’s still dissatisfied. Preliminary research showed that Cystatin C (Cys-C) has the independent prediction value for STEMI. It seems to be that Cys-C might be involved in atherosclerotic processes. Another study show that Cys-C and its fragments may also affect the phagocytic and chemotactic ability of neutrophil, participates in the inflammatory process and regulates inflammatory responses. This study aims to analyze the correlation between plasma Cys-C and the MACE in STEMI patients.

METHODS Hospitalized patients in coronary care unit of the First Affiliated Hospital of Harbin Medical University from January 2012 to December 2013 are selected. Patients were diagnosed as STEMI. A total of 445 patients are selected. Observation indicator is the major adverse cardiac events (MACE) occurrence of those patients in hospital and out-hospital. Patients are divided MACE group and non-MACE group. Statistical analysis is performed. ROC curves of Cys-C, hsCRP, TnI and CKMB are respectively drawn. The predictive value for MACE as well as to determine the threshold value. According to the concentration of plasma Cys-C, patients are divided high concentration group and low concentration group, and respectively statistical analysis for two group patients, thus evaluating the correlation among plasma Cys-C level, the prognosis and adverse events of patients with STEMI.

RESULTS 1. The single factor analysis shows that the average value of Cys-C in the MACE group is 1.09 ± 0.23 mg/L, while in the non-MACE group it is 0.82 ± 0.15 mg/L, and there is statistical difference between two groups (P < 0.0001).
2. Multiple factors analysis shows that OR value of Cys-C is 9.710, 95% CI (5.971, 15.971), indicating that Cys-C is an independent risk factor for STEMI.
3. The area under ROC curve of Cys-C is 0.8431, higher than that of Hs-CRP (0.6249), TNI (0.544) and CK-MB (0.5569). The best cutoff values that Cys-C predicting the MACE in STEMI patients is 0.94 mg/L, the sensitivity was 77.14%, specificity of 80.85%.
4. With terms in-hospital stay, out-hospital stay in 1 ~ 6 months and in 7 ~ 12 months, in comparison, the incidence of MACE for the higher concentration group are 57%, 31.64% and 48.57%, and the lower group are 17.96%, 2.49% and 7.08% separately, P < 0.05; and for terms in-hospital stay, out-hospital stay within 1 ~ 6 months and within 7 ~ 12 months, the total mortality of higher concentration group is 11.5%, 30% and 48.5%, and the lower concentration group, 1.63%, 2.04% and 8.89% separately, P < 0.05.

CONCLUSIONS There might be some correlation between the Cys-C and the MACE in STEMI patients. Cys-C is an independent risk factor for hospital and potential prognosis indicator for MACE that happens both in-hospital and out-hospital in STEMI patients.

GW26-e4568 Mean Platelet Volume is the Predictor of Poor Myocardial Perfusion post Primary PCI
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OBJECTIVES Mean platelet volume (MPV) is shown to be the predictor of poor clinical outcome, as well as poor TIMI flow in patients receiving primary percutaneous coronary intervention (PPCI). But the correlation of MPV and myocardial perfusion has not been well described or studied. So the main objective of this study was to investigate the relationship between pre-intervention MPV and myocardial perfusion post PPCI in patient with acute ST-segment elevation myocardial infarction (STEMI).

METHODS Total of 168 consecutive patients from 2012, January to 2014, December suffered from STEMI undergoing PPCI were analyzed retrospectively. The inclusion criteria were (1) age >65yrs; (2) PPCI was performed within 12 hours from symptom onset; (3) the infarct-related artery (IRA) was totally occluded; and (4) post intervention flow was TIMI 2 or greater. Exclusion criteria were (1) post history of myocardial infarction, CABG or PCI of IRA; (2) presentation with shock or cardiac arrest; (3) TIMI 0 or greater flow at IRA at initial angiography; and