GW26-e1236
Early intravenous low/high doses of Metoprolol in myocardial infarction dogs on the effects of cardiac sympathetic activity and electrophysiological properties
Danning Wang, Dening Liao
Department of Cardiology, Changzheng Hospital, Second Military Medical University, Shanghai

OBJECTIVES Observed effects of early intravenous low/high doses of Metoprolol in myocardial infarction dogs on cardiac sympathetic activity and electrophysiological properties.

METHODS 32 mongrel dogs were randomly divided into three groups, low-dose group(n=12), high-dose group(n=12) and control group (n=8). Three groups were all ligating the first diagonal branch of LAD to establish the myocardial infarction model. After ligation the low-dose group was given metoprolol 0.6mg/kg immediately by intravenous, the high-dose group was given 1.6mg/kg, while the control group was injected with normal saline. Norepinephrine (NE) and epinephrine (E) levels in the coronary sinus blood, the ventricular effective refractory period (ERP), The incidence of VA were all measured during the experiments. The pathological detection of infarction and infarct area were also performed.

RESULTS 1. The NE and E concentrations in three groups were all increased comparing with the previous measurement before ligation (NE:Control group $89.7 \pm 14.6$/ng/L vs 199.5 $\pm 27.4$/ng/L, p<0.05;Low-dose group 396.6 $\pm 68.8$/ng/L vs 192.3 $\pm 17.4$/ng/L, p<0.05;High-dose group, 422.8 $\pm 26.1$/ng/L vs 201.8 $\pm 27.8$/ng/L, p<0.05); Changes in the control group was the biggest increase compared with the other two groups (NE variation values: control group 390.15 $\pm 26.0$/ng/L vs low-dose group 204.25 $\pm 73.2$/ng/L, the high-dose group 220.99 $\pm 38.0$/ng/L, p<0.05); The low-dose and high-dose group performs no significant difference,(204.25 $\pm 73.2$/ng/L vs 220.99 $\pm 38.0$/ng/L, p=0.05).
2. ERP values after myocardial infarction were significantly shorter in all three groups compared with the first measurements, (Control group, 137.5 $\pm 1.2$/ms vs 154.9 $\pm 0.8$/ms, p<0.05, Low-dose group, 139.2 $\pm 1.0$/ms vs 153.9 $\pm 1.0$/ms, p<0.05, High-dose group 139.0 $\pm 1.2$/ms vs 154.2 $\pm 1.5$/ms, p<0.05); The low-dose group and high dose group shortened ERP approximately, there was no statistically significance, (14.7 $\pm 1.4$/ms vs 15.2 $\pm 1.3$/ms, p<0.05); Three groups all exhibited uneven shortness of ERP among different regions, infarct area was significantly shortened (p<0.05);
3. In control group there was 4 dogs (50%, n=8) induced polymorphic ventricular tachycardia or ventricular fibrillation, the low-dose group had 5 dogs (41.7%, n=12) induced polymorphic ventricular tachycardia or ventricular fibrillation, the high-dose group had 4 dogs (33.3%, n=12). There was no significant difference among all groups (p=0.05).
4. Pathology in all groups showed regional myocardial infarction changes such as dark red myocardium, coagulation necrosis, edema, hemorrhage and neutrophil infiltration. TH staining showed the injured sympathetic fibers. GAF43 staining did not see a positive result, failed to observe the effects on regeneration of sympathetic nerve fibers.

CONCLUSIONS Low and high dose of metoprolol performed similarly in reducing the catecholamine concentrations in dogs with anterior myocardial infarction, the same effects also observed in the reduction of regional ERP, but there was no differences in induced arrhythmias.

GW26-e1337
Computed tomography angiography provides information on plaque vulnerability by identifying coronary plaque with positive remodeling and low-attenuation plaques
Jie Qin, Mingjun Bai, Yuefei Guo, Xuelian Liu
Department of Radiology, The Third Affiliated Hospital of Sun Yat-sen University

OBJECTIVES The purpose of this study was to assess the relation between coronary plaques with positive remodeling (PR) and low-attenuation plaques (LAP) by computed tomography angiography (CTA) and fibrous cap thickness measured by optical coherence tomography (OCT).

METHODS 102 coronary plaques in patients with coronary artery disease were assessed by CTA and OCT (unstable angina pectoris (UAP), n=24; stable angina pectoris, n=78). Plaque characteristics were divided into three groups: 2-feature-positive plaques (PR and LAP; n=32), 1-feature-positive plaques (PR or LAP; n=20), and 2-feature-negative plaques (neither PR nor LAP; n=50). PR was defined as remodeling index (RI) of $>1.05$ and LAP was defined as CT density value $<50$/HU.

RESULTS There were significant differences among the three plaque groups with respect to fibrous cap thickness measured by OCT: $76.5\pm 24$/μm in 2-feature-positive plaques, $154.5\pm 51$/μm in 1-feature-positive plaques, and $192.4\pm 49$/μm in 2-feature-negative plaques (p<0.001). The RI (1.21 $\pm 0.6$, 1.14 $\pm 0.5$, P=0.011) and the presence of thin cap fibroatheroma (TCFA) (<70-μm thickness) (75%, 15%, P=0.001) were significantly higher in UAP than in SAP patients with 2-feature-positive plaques, whereas fibrous cap thickness (68.9 $\pm 24.1$, 92.1 $\pm 21.9$/μm, P=0.001) was lower in the UAP patients. In UAP patients, the presence of ring-like enhancement showed higher accuracy of 88% for detection of TCFA.

CONCLUSIONS Coronary PR and LAP by CTA were associated with the degree of fibrous cap thickness by OCT. CTA can provide promising information on plaque vulnerability by identifying coronary plaque with PR and LAP, especially ring-like enhancement.

GW26-e1352
Bivalirudin Versus Heparin Plus Glycoprotein IIb/IIIa Inhibitors in Patients With Acute Coronary Syndrome Undergoing Percutaneous Coronary Intervention: A Meta-Analysis of Randomized Controlled Trials
Jianbing ZHU, Junbo Ge
Shanghai Institute of Cardiovascular Diseases, Department of Cardiology, Zhongshan Hospital, Fudan University, 180 Feng Lin Road, Shanghai, China

OBJECTIVES This study sought to examine the 30-day safety and efficacy of bivalirudin versus heparin plus glycoprotein IIb/IIIa inhibitors (GPI) in patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI).

METHODS We included data from 12 randomized controlled trials (RCT) involving 22,912 patients. The incidence of 30-day all-cause mortality was the primary endpoint of the efficacy. Myocardial infarction and stent thrombosis were the secondary endpoints of the efficacy. The primary safety endpoint was the incidence of 30-day major bleeding.

RESULTS Compared with heparin plus GPI, anticoagulation with bivalirudin resulted in no differences in 30-day all-cause mortality (odds ratio [OR]: 0.96, 95% confidence interval [CI]: 0.77 to 1.20) and myocardial infarction (OR: 1.09, 95% CI: 0.95 to 1.24). Bivalirudin use comparing with heparin plus GPI resulted in decreased 30-day major bleeding (OR: 0.59, 95% CI: 0.46 to 0.76), but an increase in 30-day stent thrombosis (OR: 1.86, 95% CI: 1.19 to 2.91, p=0.05) in patients with ACS undergoing PCI.

CONCLUSIONS In patients with ACS undergoing PCI, bivalirudin is associated with a reduction of major bleeding compared with heparin plus GPI.

GW26-e1590
Detection of coronary artery anomalies in Chinese adults using 320-slice computed tomography
Xixiang Tang, 1 Yanning Chen, 2 Long Peng, 3 Ruimin Dong, 7 Yanting Luo, 1 Suhua Li, 1 Jinli Liu 1
1Advanced medical center, the Third Affiliated Hospital, Sun Yat-sen University, Tian-he Road, Guangzhou 510630, China; 2Department of endocrinology, the Third Affiliated Hospital, Sun Yat-sen University, Tian-he Road, Guangzhou, China; 3Department of Cardiology, the Third Affiliated Hospital, Sun Yat-sen University, Tian-he Road, Guangzhou, China

OBJECTIVES Varied frequencies of coronary artery anomalies (CAAs) exist in different races. CAAs in Chinese were not well-documented. To investigate the frequency of CAAs in Chinese adults detected by 320-slice coronary computed tomography.

METHODS The author assessed the records of 10,457 consecutive patients (5837 males and 4620 females) who underwent 320-slice coronary computed tomography for any reason. CAAs were divided into 4 subgroups: 1) Anomalies of origination; 2) Anomalies of intrinsic coronary arterial anatomy; 3) Anomalies of termination (ostial); 4) Number anomalies. The frequency of CAAs were calculated.