

**Results** Rapamycin made the expression and activation of KLF2 strongly reduce by 75.6% and 78.2% so as to induce long-term coronary endothelial dysfunction. In HUVECs, rapamycin made basal eNOS and t-PA decrease by 80% and 87.8%, while making basal PAI-1 and TF increase by 2.5 and 1.5-fold. After treatment by statins (especially lovastatin), the expression of KLF2 was increased by 3.8-fold nearly reversing to normal state.

**Conclusions** Taken together, these observations indicate that statin-dependent induction of KLF2 provides a new treatment for stent thrombosis induced by rapamycin releasing from drug-eluting stents.

#### e0521 CLINICAL EVALUATION OF STATIN THERAPY IN DIABETIC PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

doi:10.1136/hrt.2010.208967.521

Liu Yuyang, Zhou Yujie, Hua Shen, Yang Shiwei, Gao Fei, Wang Zhijian, Shi Dongmei, Li Yueping, Ge Hailong, Liu Xiaoli, Han Hongya. *Department of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China*

**Objective** The long-term effect of statin therapy in diabetic patients after percutaneous coronary intervention (PCI) is not well established. Accordingly, we sought to determine whether statin therapy initiated at the time of percutaneous coronary intervention reduces total and cardiac mortality among diabetic patients.

**Methods** We collected data from 569 consecutive patients who underwent PCI. We then compared all-cause and cardiac mortality rates in 249 patients with diabetes mellitus of whom 74 (29.7%) were treated with statin at the time of PCI. To adjust the variables that would have been related to the decision regarding statin administration, multivariate Cox regression was carried out.

**Results** During follow-up ( $4.4 \pm 1.3$  years), 23 patients died (including 12 who died of cardiac causes). The Multivariate analysis showed statin therapy to be significantly associated with reduced cardiac mortality (HR 0.39, 0.16–0.95;  $p=0.039$ ), but not with all-cause mortality.

**Conclusion** Statin therapy was associated with a significantly reduced risk of cardiac mortality in patients with diabetes mellitus and coronary artery disease after PCI.

#### e0522 DUAL ANTIPLATELET PLUS TIROFIBAN THERAPY HAVE A BENEFICIAL EFFECT ON ACUTE CORONARY SYNDROME IN DIABETIC PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

doi:10.1136/hrt.2010.208967.522

Shen Hua, Zhou Yujie, Liu Yuyang, Yang Shiwei, Gao Fei, Wang Zhijian, Shi Dongmei, Han Hongya, Ge Hailong, Liu Xiaoli. *Department of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China*

**Background** Diabetes is strongly associated with clopidogrel resistance, thrombosis and the development of coronary artery disease (CAD). Some trials suggest that inhibition of glycoprotein IIb/IIIa can improve the outcome of clopidogrel resistance in patients undergoing percutaneous coronary interventions (PCIs). However, the efficacy of small-molecule IIb/IIIa receptor inhibitors in acute coronary syndrome (ACS) patients with diabetes undergoing PCI has not been specifically investigated.

**Methods** We randomised consecutive ACS patients with diabetes undergoing PCI, to tirofiban or placebo groups along with double antiplatelet therapy. High-dose bolus (20 mg/kg per 3 min) of tirofiban was administered immediately before PCI followed by 8 h continuous infusion (0.15 mg/kg per min). Postprocedural myocardial necrosis was assessed prospectively by measurement of cardiac troponin I (cTnI) at 6 and 24 h after PCI. The primary end-points

were post-PCI coronary flow estimated by corrected TIMI frame count and post-PCI myocardial infarction.

**Result** 138 patients entered the study (66 randomised to placebo and 72 randomised to tirofiban). Post-PCI corrected TIMI frame count was  $9.2 \pm 3.6$  in tirofiban and  $13.0 \pm 7.6$  in placebo groups ( $p=0.03$ ). The prevalence of post-PCI myocardial infarction was similar in the two groups (17 vs 26%,  $p=0.167$ , respectively).

**Conclusion** Up-stream use of tirofiban in ACS patients with diabetes undergoing PCI, along with double antiplatelet therapy, was associated with a decreased risk of distal embolisation.

#### e0523 RISK FACTORS OF ACUTE RADIAL ARTERY OCCLUSION FOLLOWING TRANSRADIAL PERCUTANEOUS CORONARY INTERVENTION IN SENILE PATIENTS

doi:10.1136/hrt.2010.208967.523

Zhao Yingxin, Zhou Yujie, Shi Dongmei, Guo Yonghe, Chen Wanjun, Yang Qing, Shi Dongmei, Wang Zhijian, Nie Bin, Yan Zhenxian, Gao Fei. *Department of Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China*

**Background** Compare with transfemoral percutaneous coronary intervention, the access site complication is less with transradial percutaneous coronary intervention (TRI). The acute radial artery occlusion (Acute RAO) is the most common complication following TRI. Although the incidence of acute RAO is less (0~10%) and acute RAO couldn't induce upper-extremity ischaemia with positive Allen test patients, it makes re-TRI procedures impossible. To elucidate the risk factors of acute RAO is the best way to prevent it occurring.

**Methods** A total of 1256 positive Allen test patients ( $\geq 60$  years old) who underwent TRI (during May, 2004 to May, 2009) were divided into two groups: normal group and RAO group, according to whether the patient without or with acute RAO. Risk factors of acute RAO were analysed by logistic regression model.

**Results** Acute RAO occurred in 28 patients (2.2%). Univariate analysis showed, the smaller size of sheath used, the higher incidence of acute RAO occurred. As compared to the patients in normal group, there are more female and diabetes mellitus patients in RAO group. The dose of heparin used in the operational procedure in RAO group were significantly less than normal group ( $3826 \pm 523$  IU vs  $7425 \pm 980$  IU,  $p < 0.01$ ). The post-procedure duration of high-pressure compression haemostasis were longer in RAO group than normal group ( $378.9 \pm 35.4$  min vs  $264.7 \pm 43.2$  min,  $p=0.03$ ). Logistic regression analyses showed that the dosage of heparin used in the procedure (RR: 2.812, 95% CI 1.116 to 6.732,  $p=0.016$ ), the size of sheath (risk ratio: 4.978, 95% CI 3.211 to 10.675,  $p=0.001$ ) and the post-procedure compression time (RR: 2.431, 95% CI 1.389 to 5.010,  $p=0.034$ ) were independent risk factors for acute RAO.

**Conclusion** The incidence of acute RAO can be minimised by proper sheath selection, appropriate anticoagulation used during operational procedure, and avoiding prolonged duration of high-pressure compression haemostasis following the procedure.

#### e0524 INTENSIVE CHOLESTEROL LOWERING WITH SIMVASTATIN IMPROVES THE OUTCOMES OF PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ACUTE CORONARY SYNDROME

doi:10.1136/hrt.2010.208967.524

Fu Xianghua, Jia Xinwei, Wang Yanbo, Wang Xuechao, Gu Xinchun, Zhang Jing, Hao Guozhen. *The Second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** To evaluate the immediate protective effects of intensive statin pretreatment on myocardial perfusion and myocardial ischaemic injury during PCI.

**Methods** A total of 228 acute coronary syndrome (ACS) patients were randomly divided into standard statin group (SSG, n=115) and intensive statin group (ISG, n=113). Patients in SSG received 20 mg simvastatin and patients in ISG received 80 mg simvastatin for 7 days before PCI. TIMI grade flow (TGF), corrected TIMI frame count (CTFC) and TIMI myocardial perfusion grade (TMPG) of the intervened vessel were recorded before and after stent deployment. Plasma level of CK-MB and cTnI were measured before and 24 h after the procedure.

**Results** The TGF after stent deployment was significantly improved with less TIMI 0–1 patients and more TIMI 3 blood flow in ISG than in SSG (all  $p<0.05$ ). Patients with no reflow phenomenon were less in ISG ( $p<0.001$ ). The CTFC was lower in ISG than SSG ( $p<0.001$ ). TMPG was also improved in ISG than SSG ( $p=0.001$ ). 24 h after the procedure, although PCI caused significantly increase in CK-MB, the elevated CK-MB value was lower in ISG than SSG ( $18.74\pm 8.41$  vs  $21.78\pm 10.64$   $p=0.018$ ). Similar changes were also found with regard to Troponin I ( $0.99\pm 1.07$  vs  $1.47\pm 1.54$ ,  $p=0.006$ ). No myocardial infarction was found. Among them, myocardial necrosis was detected in 13% of the patients in SSG, while 4.4% in ISG ( $p=0.021$ ). Myocardial infarction was found in 4.4% in the patients in SSG and 0.9% in ISG ( $p=0.213$ ).

**Conclusion** Intensive statin pretreatment for 7 days before PCI can further improve myocardial blood perfusion, protect myocardium from ischaemic injury.

#### e0525 PROTECTIVE EFFECT OF SIMVASTATIN COMBINED WITH ANISODAMINE ON MYOCARDIAL PERFUSION IN SWINE NO REFLOW MODEL

doi:10.1136/hrt.2010.208967.525

Fu Xianghua, Jia Xinwei, Wang Yanbo, Wang Xuechao, Zhang Jing, Fan Weize, Hao Guozhen. *The second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objectives** To evaluated the preventive effect of simvastatin combined with anisodamine on myocardial perfusion in no reflow, and to probe the possible mechanism.

**Method** Totally 16 minipig of 30–40 Kg were randomly divided into anisodamine groups (A, n=8) and anisodamine plus simvastatin group (A+S, n=8). Pigs in Group A+S were pretreated with oral simvastatin for 7 days, while pigs in A groups were given placebo. Seven days later, CAG was performed, and the dopper wire was used to record blood velocity. The pressure of aorta (Pa) was monitored. PMBS was injected to establish no reflow model. Anisodamine was injected into the LAD 2 min before PBMS was injected. The TIMI blood flow, TMPG and CTFC were recorded to evaluate the myocardial perfusion. The sample of myocardium in ischaemic zone and normal zone were measured. Blood sample was taken before and after the experiment to measure the level of CK-MB, cTnI and hs-CRP. The percent of necrotic myocardium was calculated by myocardium stain method.

**Results** The TIMI blood flow and TFCs were better in Group A+S ( $p<0.05$ ). The Pa was increased in both groups after PMBS injection at the early stage ( $p<0.01$ ), and then it began to decrease in Group A ( $p<0.05$ ), while it remained its high level in Group A+S ( $p=0.042$ ). The bAPV was increased in both groups, which was more obvious in the Group A after PMBS injection. After the injection of PMBS, the hAPV was significantly decreased in both groups ( $p<0.01$ ), but it was still higher in group A+S ( $p=0.000$ ). The CFR was continuously decreased after the PMBS injection ( $p<0.05$ ), but it was higher in Group A+S ( $p=0.025$ ). The h-MR was further increased ( $p=0.024$ ), with no difference between two groups after the PMBS injection. The level of serum cholesterol was similar between the two groups ( $p=0.063$ ). CK-MB, TnI, hs-CRP and MDA were

increased after the experiment, with the higher levels in Group A. NO was also increased ( $p=0.000$ ), with the higher level in Group A+S ( $p=0.006$ ). SOD was decreased ( $p=0.000$ ) in both groups, with lower level in Group A ( $p=0.000$ ). The infarcted size in group A was larger than that in A+S group ( $p<0.05$ ).

**Conclusion** Simvastatin combined with anisodamine can significantly improve myocardial blood perfusion and protect the myocardium against ischaemic injury during PCI. The possible mechanism involves improving of coronary haemodynamics, anti-inflammation and antiooxidation.

#### e0526 PROTECTIVE EFFECTS OF INTENSIVE STATIN PRETREATMENT ON RENAL FUNCTION IN PATIENTS WITH ACUTE CORONARY SYNDROME UNDERGOING PERCUTANEOUS INTERVENTION

doi:10.1136/hrt.2010.208967.526

Fu Xianghua, Jia Xinwei, Wang Yanbo, Wang Xuechao, Zhang Jing, Fan Weize, Hao Guozhen, Jiang Yunfa. *The Second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objectives** To evaluate the protective effects of higher dose statin on renal function and the incidence of CIN.

**Methods** 228 patients with acute coronary syndrome undergoing delayed percutaneous coronary intervention were randomly divided into standard statin group (SSG n=115) and intensive statin group (ISG n=113). Patients in SSG were given simvastatin 20 mg/day and patients in ISG were given simvastatin 80 mg/day for at least 7 days before PCI, Serum creatinine was measured at admission, 24 h and 48 h after PCI, and the Creatinine clearance was calculated. The levels of hs-CRP, ICAM-1 and P-selectin were also measured.

**Results** Serum creatinine underwent significant increase after PCI, the peak value occurred at 24 h, and then began to decrease. At 48 h after PCI, the creatinine level significantly decreased ( $p<0.001$ ) to baseline level in ISG, whereas in SSG the creatinine level failed to decrease significantly. Serum creatinine at admission was not significantly different between the two groups, But at 24th and 48th hour after PCI, it were lower in ISG than SSG ( $p<0.05$  at 24th hour and  $p<0.001$  at 48th hour). The creatinine clearance significantly decreased after PCI, the lowest value occurred at 24 h, and then it began to increase. In SSG, the creatinine clearance increased significantly ( $p=0.03$ ) at 48 h, but still significantly lower than baseline level. In ISG, the creatinine clearance increased significantly ( $p<0.001$ ) at 48 h and recovered to the level at baseline. Creatinine clearance improved much more in ISG at 24 and 48 h than that in SSG ( $p<0.001$  at 24th hour and at 48th hour). Although procedure caused significant increase in hs-CRP, P-selectin and ICAM-1 ( $p<0.001$ ), the increase in ISG was smaller than SSG ( $p<0.001$ ).

**Conclusion** Pretreatment with intensive statin dosage before PCI can further decrease the occurrence of CIN. This benefit may be associated with the lowering of hs-CRP, P-selectin and ICAM levels.

#### e0527 INTRAVASCULAR ULTRASOUND CRITERIA FOR THE ASSESSMENT OF THE FUNCTIONAL SIGNIFICANCE OF INTERMEDIATE CORONARY ARTERY STENOSIS

doi:10.1136/hrt.2010.208967.527

Cheng Xunmin, Jiang Shisen. *Cardiology Department, Nanjing General Hospital of Nanjing Military Command of Pla, Nanjing*

**Introduction** In recent years, intravascular ultrasound (IVUS) has evolved as a valuable adjunct to angiography. IVUS allows precise tomographic measurement of lumen area and plaque size, distribution and, to some extent, composition. It is essential in clinic decision