

aortic valved stent implantation above the coronary ostia might avoid blocking the coronary ostia.

Method Fresh pig pericardium were procured and processed to make artificial valves, and then mounted on tubular braided stents to make valved stents. Twenty healthy dogs weighing 17.7 ± 3.1 kg were selected to establish a canine model of acute aortic valve rupture. The dogs were randomly divided into two groups: the rupture group without any treatment and the valved stent group with percutaneous valved stent implantation above the coronary ostia. The two groups of animals were followed up for 3 months. Echocardiography and other tests were performed to assess aortic regurgitation and ventricular function.

Results Acute aortic valve rupture models were successfully established in 16 of 20 dogs. In the rupture group, the mean aortic regurgitation was 6.8 ± 1.9 ml/s, only three of eight animals survived for 3 months. In the valved stent group, the mean aortic regurgitation was 7.0 ± 2.1 ml/s, valved stents were successfully implanted above the coronary ostia in eight animals. Instant post-implantation anatomy showed that the stents were located appropriately. Seven dogs survived for 3 months. Reduced aortic regurgitation was detected by colour Doppler echocardiography and no valved stent dislocation was found by 64-slice CT scan.

Conclusion Percutaneous valved stent implantation above the coronary ostia is feasible and effective as a transitional treatment for acute aortic valve rupture.

e0542 **TRANSCATHETER THERAPY OF VENTRICULAR SEPTAL RUPTURE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION COMPLICATED BY VENTRICULAR SEPTAL RUPTURE**

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Objective To explore the feasibility and clinical effects by transcatheter interventions used for the patient suffering acute myocardial infarction (AMI) complicating with ventricular septal rupture (VSR) postinfarction.

Methods Between June 2005 and August 2009, Ventricular septal rupture (VSR) patients diagnosed with VSR underwent transcatheter closure aged 59–79 years old (mean 63.3 ± 24.7). The occluders were released with the monitoring of transthoracic echocardiography (TTE) and X-ray fluoroscopy.

Results 3 cases were successfully treated with transcatheter closure. The defect diameter was 11–28 (17 ± 9.5) mm measured by TTE and the size of the occluder was 16–32 (21.3 ± 7.6) mm. The occluder successful rate was 100%. The case success in 2 and a big VSR lead to die in 1.

Conclusions VSR was showed by praecordial area auscultation, transthoracic echocardiography (TTE) and left ventricular angiography after AMI. The transcatheter closure of VSR postinfarction is alternative method in patients not suitable for surgical closure. But the careful examination and preparation are need before transcatheter closure.

e0543 **CLINICAL AND CORONARY ANGIOGRAPHY CHARACTERISTICS BETWEEN YOUNG (<45) AND OLD (>60) PATIENTS WITH CORONARY ARTERY DISEASE**

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Objective To study the clinical and coronary angiography characteristics between young (≤ 45) and old (> 60) patients with coronary artery disease.

Methods Angiographic and clinical data from A: 176 patients (≤ 45) selected from 1795 patients with coronary artery disease from April 2006 to May 2010 were compared to B: 464 patients (> 60) with coronary artery disease from April 2007 to May 2009 in our department.

Results (1) The male in A much more than B (93.1% vs 61.4%, $p < 0.01$). (2) The patients with hypertension or type 2 diabetes mellitus in A were less than B (all $p < 0.01$). (3) The patients with Smoking, taking drug named Anajia or a positive family history in coronary artery disease in A were much more than B (all $p < 0.01$). The incidences of dyslipidemia in A were more than B (28.2% vs 19.0%, $p < 0.05$). (4) The patients because of acute myocardial infarction come to hospital were more than B (72.0% vs 62.5%, $p < 0.01$). (5) Auto driver, the self-employed and government functionary were the top three categories of the coronary heart disease, but farmer, worker and retired military cadre in B. (6) Morbidity: the patients (≤ 45) with coronary artery disease accounted for 9.7% in all patients with coronary artery disease in the same time (the cases 82 (≤ 40) accounted for 4.6%). (7) The patients done coronary angiography in A were more than B (64.0% vs 38.1%, $p < 0.01$). Single vessel coronary artery diseases were seen more frequently in A than B (50.9% vs 21.5%, $p < 0.01$), and especially left anterior descending branch diseases occupied 87.7%; two-vessel diseases and collateral circulation were less in A than B ($p < 0.05$); right coronary artery and circumflex diseases were less in A than B ($p < 0.01$); however lesions and left main artery, left anterior descending branch diseases have no statistics meaning in A and B. The meaningless lesion coronary arteries diseases were much more in A than B (89.0% vs 0.6%, $p < 0.01$). The myocardial infarction patients account for 90% in the groups who had meaningless coronary arteries change showed by coronary angiography in A.

Conclusion The feature of coronary heart disease (≤ 45): (1) Most because of acute myocardial infarction come to hospital; (2) The male, short of labour, more tension, heavy work pressure, the incidences of dyslipidemia, smoking and the early onset group had stronger family history of coronary arteries diseases were high risk groups. The patients taking Anajia may also the high risk groups in our area. (3) Morbidity: accounted for 9.7% in all patients with coronary artery disease in the same time (the cases (≤ 40) accounted for 4.6%). (4) The coronary angiography characteristics about half is the single vessel diseases, especially left anterior descending branch diseases; coronary angiography in some patients has no significant lesions, and mainly to myocardial infarction; there were differences about two and three-vessel diseases, right coronary artery and circumflex diseases, collateral circulation between young (≤ 45) and old (> 60); there were not differences about the left main coronary arteries diseases, left anterior descending branch diseases and the degree of narrowed coronary arteries between young (≤ 45) and old (> 60).

e0544 **THE SAFETY AND EFFICIENCY OF DALTEPARIN DURING PERCUTANEOUS CORONARY INTERVENTION**

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Objective This study was designed to evaluate the efficacy and safety of using dalteparin instead of UFH in selective percutaneous coronary intervention (PCI) of patients with coronary heart disease (CHD).

Methods In this prospective, open-label, multicentre trial, from Jan. 2006 to Apr. 2008, 212 patients with CHD were enrolled. Patients without prior SC dalteparin therapy or those for patients who came

to the catheterisation laboratory between 8 and 12 h after the last subcutaneous dose, designed to receive 60 IU/kg IV dalteparin 5 min before PCI, and no additional dalteparin was given to patients who came to the catheterisation laboratory within 8 h of the last subcutaneous dose. The primary efficacy outcome was the incidence of death, non-fatal myocardial infarction (MI), and urgent revascularization for repeating ischaemia. The primary safety outcome was the incidence of bleeding not related to coronary artery bypass graft (CABG) surgery.

Results One patient developed acute thrombosis during PCI but not resulted in acute myocardial infarction (AMI). In-hospital and during follow-up within 35 days, no patient experienced death or non-fatal myocardial infarction and urgent target vessel revascularization, Thrombolysis In Myocardial Infarction (TIMI) major bleeding and minor bleeding occurred in 0% and 4.2% of patients respectively.

Conclusions It may be safe and efficient using dalteparin instead of UFH in selective percutaneous coronary intervention of patients with coronary heart disease.

e0545 RESEARCH ON INHIBITING VASCULAR REMODELLING OF CAPTOPRIL AND XUEFUZHUYU CAPSULE ON THE BASIS OF RESTRAINING ACTIVATION AND MIGRATION OF ADVENTITIAL FIBROBLASTS

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Background Vascular remodelling is the common pathophysiological basis of atherosclerosis, hypertension and coronary artery disease, et al. It is also one of pathogenesis mechanisms which causes target organs damage and dysfunction. Now, new evidences show that the vascular adventitia may be involved in the formation of vascular remodelling. The activation and migrating to the intima of vascular adventitial fibroblasts is one of the important reasons leading to intimal thickening and stenosis.

Objective To observe inhibition of ACEI drugs Captopril and Chinese medicine Xuefuzhuyu Capsule to vascular remodelling and adventitial fibroblasts activating and migrating.

Methods 1. The intima of left carotid common arteries was denuded by balloon injury. Animals with the percutaneous transluminal angioplasty (PTA) were divided into five groups at random: sham, model, Captopril and Xuefuzhuyu group, which including 8 rats. The injured sections were taken out and made into specimens for HE staining to observe vascular wall thickness, area and vascular stricture rate after rats had been drenched for 28d. 2. It was adopted that primary culture of, vascular adventitial fibroblasts and TGF β 1-induced (10 ng/ml) model. Rats were randomly divided into normal group, Captopril group and Xuefuzhuyu group. Arterial blood were collected after drenching drug 7d and drug serums effected on the TGF β 1-induced fibroblasts for 48 h. The α -SM-actin expression changes were detected by the western blot method and cell migration rate by cell scratch method.

Results 1. Effects of drugs on indexes of vascular remodelling: Neointimal thickness of Xuefuzhuyu group significantly was reduced than that of model group ($18.92 \pm 4.77 \mu\text{m}$ vs $52.11 \pm 21.65 \mu\text{m}$, $p < 0.01$), and so did neointimal area ($0.048 \pm 0.013 \text{mm}^2$ vs $0.130 \pm 0.049 \text{mm}^2$, $p < 0.01$). At the same time, vascular stricture rate of Xuefuzhuyu group was obviously decreased compared with model group (8.910 ± 2.120 vs $22.85 \pm 9.763\%$, $p < 0.01$). These three indexes of Captopril group were no statistically significant differences through lessening trend. 2. Effect of drug serum on expression of α -SM-actin of TGF β 1-induced fibroblasts: Light density values (OD)

of normal controls, TGF- β 1, Captopril and Xuefuzhuyu group were 0.852 ± 0.0223 , 1.071 ± 0.0486 , 0.889 ± 0.0310 and 0.858 ± 0.0204 respectively, and values of captopril and Xuefuzhuyu group were significantly reduced compared with TGF- β 1 group ($p < 0.01$). 3. Effect of drug serum on mobility of TGF β 1-induced fibroblasts: Cell migration rates of captopril and Xuefuzhuyu group lowered significantly than that of TGF- β 1 group (0.140 ± 0.0687 and 0.108 ± 0.0435 vs 1.000 ± 0.0000 , $p < 0.01$).

Conclusions 1. Both captopril and Xuefuzhuyu Capsule inhibit vascular remodelling to a certain extent. Animal experiments shows that more benefits can be obtained from the Xuefuzhuyu than Captopril. 2. Drug serums of two drugs can inhibit activation and migration of adventitial fibroblasts, which may be one of mechanisms of inhibiting vascular remodelling.

e0546 EFFICACY AND SAFETY OF CT-GUIDED PERCUTANEOUS CORONARY INTERVENTION OF LEFT MAIN AND OR TRIPLE VESSEL CORONARY ARTERY DISEASE

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Introduction Unlike invasive coronary angiography (ICA) which allows visualisation of the coronary vessel lumen, coronary CT angiogram (CCTA) allows both visualisation of the vessel lumen and the vessel wall. The information obtained may potentially allow better pre-PCI planning and safe outcomes.

Aim The aim of this prospective study was to assess the efficacy and safety of CT guided PCI in patients with left main and or triple vessel coronary disease.

Methods Patients, who were listed for PCI based on the results of CCTA, were randomly selected in the study over a 5 year period. Coronary CT angiographic inclusion criteria were, 50%–100% dm occlusion in a major coronary artery with a target vessel diameter ≥ 2.25 mm, involving all 3 of the main coronary arteries and or left main coronary artery. They underwent CCTA using 64 MSCT and 128 MSCT scans. Coronary stenoses on the ICA were determined independently in the catheterisation laboratory using online quantification software. Coronary angiographic inclusion criteria were 50%–100% diameter occlusion, and vessel diameter ≥ 2.25 mm.

Results A total of 34 consecutive patients who met the inclusion criteria were enrolled during the study period. The mean age was 57.2 ± 8.2 years while the male to female ratio was 15:2. There were 544 coronary segments in the study population. There were 177 (32.5%) coronary segments with significant ($\geq 50\%$) stenosis on CCTA. In comparison, there were 180 coronary segments with significant stenosis on ICA. The difference is accounted for by 6 false negative and 3 false positive results on CCTA. All patients who were scheduled for PCI on the basis of the CCTA results proceeded to PCI. A total of 116 stents were implanted, representing an average of 3.4 ± 1.6 stents per patient (range, 1–12 stents). Technical success was achieved in all the 34 patients who proceeded to PCI. Significant triple vessel disease was present in 88.2% (30/34) of patients and left main disease was present in 11.8% (4/34). During PCI and stenting, there were no patients who had a major adverse cardiac event (MACE), developed a stroke, underwent emergency bypass graft surgery or died. During follow-up (mean of 24 months) only 1 patient had another PCI done due to development of significant lesion in the non-stented segment after approximately 38 months from the previous CT scan and PCI. The 5-year event-free survival was 100%.

Conclusion All eligible patients who underwent pre-PCI CT planning were associated with uncomplicated and successful procedures. The long-term outcome was excellent as there were no repeat procedures due to restenosis and no emergency CABG was needed.