and QCA with respect to percentage of stenosis, minimum luminal diameter was (2.04±0.18) mm vs (2.0±0.17) mm, respectively, the correlation index $R = 0.627$. Reference segment diameter was (3.28±0.19) mm vs (3.17±0.21) mm, respectively, the correlation index $R = 0.782$. In contrast, there was a difference in the assessment luminal diameter stenosis with minimum luminal area. The stenosis detected by IVUS could find the severity of stenosis, could reduce much MACE relatively.

Conclusions In patients with angiographically intermediate lesions, the frequency of severe stenosis detected by IVUS were high, indicating that angiography underestimated the severity of stenosis. Smoking and Hypertension could be used to stratify these lesions into groups with higher risk of MACE.

E0535 THE ABILITY OF OPTICAL COHERENCE TOMOGRAPHY FOR ASSESSMENT OF INTERMEDIATE CORONARY STENOSIS COMPARISON WITH QUANTITATIVE CORONARY ANGIOGRAPHY

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Objective Optical coherence tomography is a new intravascular imaging method with a high resolution of approximately 10 μm. This study aims to examine quantitative optical coherence tomography (OCT) derived measurements intermediate coronary stenosis from quantitative coronary angiography (QCA).

Methods 240 patients with coronary intermediate stenosis by quantitative coronary angiography (QCA) and underwent OCT assessment of the lesions artery. The results from QCA and OCT were compared using unpaired t-test. Multiple regression analysis was performed. The latter of MACE was significantly lower than that by QCA detected.

Results A total of 118 stenotic coronary lesions were classified as intermediate by QCA. Subgroup of the plaque was analysed, OCT could estimate the fibrous cap thickness, and it was 122±24.7 μm, the reference segment diameter was 5.06±0.12 mm, the minimum luminal diameter was 1.94±0.12 mm. The minimum luminal area was 4.8±1.17 mm². At 12 months of clinical follow-up, 8 patients was found to have MACE. It was much lower than QCA group.

Conclusions In patients with angiographically intermediate lesions, the frequency of severe stenosis detected by OCT were high, indicating that angiography underestimated the severity of stenosis. This unique resolution of OCT suggests that it may be well suited for identifying vulnerable plaques in patients at risk. Optical coherence tomography is a feasible imaging modality in patients and allows us to identify quantitative plaque characters, such as fibrous cap, vulnerable plaque.

E0536 COMPARATIVE EFFECTS OF PERCUTANEOUS CORONARY INTERVENTION FOR CULPRIT CORONARY ARTERY OR TOGETHER WITH NON-CULPRIT CORONARY ARTERY IN PATIENTS WITH MULTI-VESSEL CORONARY ARTERY DISEASE

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Background Rapid recanalization of the culprit lesion is the main goal of primary angioplasty for acute ST-segment elevation myocardial infarction (STEMI), but strategy for treatment of culprit and non-culprit lesions in multi-vessel coronary artery disease remains unclear. Objectives Aims to examine the 6-month outcomes for non-culprit interventions performed at the time of the primary percutaneous coronary intervention (PCI) in multi-vessel coronary artery disease.

Methods A total of 1120 patients treated with primary angioplasty between 2008 and 2009 were classified in groups with multi-vessel coronary artery disease (MVD). We examined the associated 6 months outcomes following non-culprit interventions performed at the time of primary PCI. Patients were subdivided in two groups on the basis of the revascularization strategy: 1) patients undergoing PCI of the culprit coronary artery only; 2) patients undergoing PCI of both the culprit coronary artery and non-culprit coronary artery during the initial procedure. All the patients were followed up for 6-month for major adverse cardiac events (MACE).

Results The two groups did not differ with respect to baseline clinical and angiographic characteristics. At 6-month, compared with PCI restricted to the culprit coronary artery only, multivessel PCI was associated with higher rates of re-infarction (7.9% vs 2.6%, p<0.001), revascularization (14.5% vs 6.8%, p<0.001), and MACEs (26.7% vs 14.8%, p<0.001).

Conclusions Non-culprit coronary interventions were significantly associated with increased mortality. Our data suggest that in patients with MVD, primary PCI should be directed at the culprit coronary artery only, with decisions about PCI of non-culprit lesions guided by objective evidence of residual ischaemia at late follow-up. Further studies are needed to confirm these findings.

E0537 OCCLUDER DISLOCATION—THE SEVERE COMPLICATION OF TRANSCATHETER CLOSURE OF PATENT DUCTUS ARTERIOSUS WITH PULMONARY ARTERIAL HYPERTENSION

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Patent ductus arterious (PDA) is common congenital heart disease in children and infancy, closure of PDA by surgery or interventional cardiac catheterisation is safe now, but those with large and untreated patent ductus arterious usually developed pulmonary hypertension in adults, in which the surgery to ligament PDA become a challenge because the high risk of the complication. Recent years some authors have reported that transcatheter closure of patent ductus arteriosus with pulmonary arterial hypertension successfully. 2 Our group had treated 284 cases of PDA patients by transcatheter since 2001, which included 25 cases with pulmonary arterial hypertension, among them the PDA of 19 cases were closed successfully, 4 cases were abandoned because of the device was not available or the symptoms became worsening in the catheter room, in the other 2 cases the occluder fell of 48 h after operation and caused serious complication, here we reported it.

E0538 TRANSCATHETER THERAPY OF GIANT VENTRICULAR SEPTAL DEFECT ACCOMPANIED WITH CRITICAL PULMONARY VALVE STENOSIS AND HIGH DEGREE A-V BLOCK: A CASE REPORT WITH 4 YEAR FOLLOW-UP

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Transcatheter closure of ventricular septal defects, which has been used extensively in recent years, has become a treatment of choice in selected patients. However, there is relatively limited experience with large VSD (>15 mm) and/or obviously preprocedural ECG
abnormality in heart conduct system. The patient in this case is a 15-year-old male with 17 mm perimembranous ventricular septal defect (VPSD) accompanied with critical pulmonary valve stenosis (PS) and II II auriculo-ventricular block (AVB). Having denied prophylactic permanent pacemaker implantation and open chest operation repair, this patient later was performed percutaneous balloon pulmonary valvuloplasty (PBVP) and subsequently transcatheter closure of VSD with a special designed 24 mm modified Amplatzer perimembranous VSD occluder without obvious residual intracardiac shunting and residual pulmonary valve stenosis (after 2nd stage PBVP). Transient complete heart block and junctional escape rhythm were developed one day after procedure and recovered 7 days later. During 4-year follow-up, no sequelae was revealed by regular and ambulatory ECG monitoring. Placement of device confirmed satisfactory and no residual intracardiac shunting or heart valves regurgitation was detected echocardiographically. We deduced that the II AVB might be congenital and stable in this case. In our opinion, transcatheter closure of large VSD (>15 mm) and/or obviously ECG abnormality in heart conduct system appears to be an alternative option for carefully selected patients who are not willing to undergo surgical repairs. However, prognosis should be strictly evaluated by long time and multi-centre follow-up.

**e0539 B-TYPE NATRIURETIC PEPTIDE ON PREVENTING OF CONTRAST-INJECTED NEPHROPATHY IN PATIENTS WITH HEART FAILURE UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION**

**Background** Contrast-induced nephropathy (CIN) is one of the leading causes of hospital-acquired renal failure and increase in the mortality and length of hospital stay after percutaneous coronary intervention (PCI).

**Purpose** To evaluate the protective effect of B-type natriuretic peptide (BNP) on CIN in patients with heart failure undergoing PCI.

**Material and methods** In the prospective, placebo-controlled, randomised trial, 149 consecutive acute myocardial infarction (AMI) patients with heart failure undergoing primary PCI received recombinant human BNP or placebo from the time of admission to 24 h after PCI. Serum creatinine (Scr) levels were measured to evaluate the protective effect of BNP on renal function. Estimated glomerular filtration rate (eGFR) was calculated by simplified modification of diet in renal disease study equation. CIN was defined as a postprocedure peak increase in serum creatinine (Scr) of >0.5 mg/dl or >25% from baseline.

**Results** The baseline characteristics, including baseline demographics and clinical characteristics and angiographic and procedural features, were similar between the two groups. The Scr significantly increased after PCI, with the peak value at the 48th hour, and then began to decrease. Repeated measure ANOVA showed that the Scr at PCI was lower in the BNP group than that in the control group (F=5.056, p<0.026). At 24, 48 (the peak value), and 72 h and 7 days after PCI the Scr was lower in the BNP group than that in the control group. At 7 days after PCI, the Scr showed a lower trend to the baseline level in the BNP group (75.32±12.34 vs 73.42±14.86, p=0.120), while it failed to do so in the control group. At 48 and 72 h and 7 days after PCI, the eGFR in the BNP group was significantly higher than that in the control group. The occurrence of CIN was significantly lower in the rhBNP group than that in the control group (12 vs 24 cases, p=0.024).

**Conclusion** Periprocedural use of BNP could further promote the recovery of renal function and decrease the occurrence of CIN compared with routine treatment alone in patients with heart failure undergoing primary PCI.

**e0540 EFFICACY AND SAFETY OF TIROFIBAN-ASSISTED DELAYED PCI IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION**

**Objective** To compare the outcomes of Ilib/IIa antagonist assisted PCI within 12–72 h of onset with that of elective PCI within 7–10 days in STEMI patients.

**Methods** Totally, 80 patients were randomly allocated into the delayed PCI group (n=40) and the elective PCI group (n=42). In the delayed PCI group, PCI was performed within 12–72 h of onset. Tirofiban (10 μg/kg) was administered intravenously over 3 min immediately before PCI, and then was intravenously administered at 0.15 μg/kg/min during the procedure and for at least 36 h after PCI. In elective PCI group, PCI was performed within 7–10 days of onset. Blood platelet aggregation rate (PAR) was measured immediately before PCI (time 0) and at sequentially different time points (30 min, 2 h, 6 h, 12 h, 48 h and 7 days). Final TIMI grade flow (TGIF), corrected TIMI frame count (CTFC) and TIMI myocardial perfusion grade (TMPG) of the infarction related artery were recorded. Ultrasonic cardiography (1 week and 12 week after PCI) and raiiodiatomic ventricle imaging (RNVI) (1 week after PCI) parameters such as left ventricular peak ejection rate (LPER), left peak filling rate (LFFR), left ventricular time to peak ejection rate (LTPER) and left ventricular time to peak filling rate (LTFFR) were performed. Bleeding complications and major adverse cardiac events (MACE) were followed up for 3 months.

**Results** In delayed PCI group, the cases with TGIF 0–1 were significantly fewer before PCI, while the cases with TGIF 3, CTFC were more and CTFC was lower after PCI. The LPER, LFFR 1 week after PCI in delayed PCI group was higher and the LTPER, LTFFR were lower. LVEDD at 1 week and 3 months after PCI was all significantly smaller, while the LVEF was higher. There were no significant difference between the two groups regarding the incidence of hemorrhagic complications and MACES.

**Conclusion** Tirofiban facilitated delayed PCI for patients with STEMI of over 12 h of symptom onset is safe and effective.

**e0541 PERCUTANEOUS VALVED STENT IMPLANTATION ABOVE THE CORONARY OSTIA: A NEW TRANSITIONAL TREATMENT FOR ACUTE AORTIC VALVE RUPTURE**

**Objective** To investigate the feasibility of percutaneous valved stent implantation above the coronary ostia as a transitional treatment for acute aortic valve rupture.

**Background** In recent years, some experimental and clinical studies about percutaneous aortic valve replacement has been conducted. Under current conditions, the risk of this technique is still high.