e0640 COMPARATIVE STUDY ON MANIPULATION AND IMAGING OF 4FR VERSUS 6FR CATHETERS BY TRANSRADIAL CORONARY ANGIOGRAPHY

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Objective To prospectively compare the imaging quality of CAG and feasibility in manipulation with 4Fr versus 6Fr catheters by transradial CAG.

Methods A total of 866 consecutive patients who required coronary angioplasty were enrolled into this study. First, all patients underwent CAG with a 4Fr catheter by transradial approach, and 1 week later, underwent CAG with a 6Fr catheter before the coronary angioplasty by transradial approach. The handling, torque, selectivity, and stability with the 4Fr and 6Fr catheter were graded from 1 (excellent) to 4 (unacceptable) by the operator. The angiographic quality (QUAL) of CAG was also graded from 1 (unacceptable) to 10 (excellent) by two doctors in the catheter laboratory.

Results There were no statistical differences between the 4Fr catheter and 6Fr catheter in procedural time and fluoroscopy time, whereas compression time in the 4Fr catheter was significantly shorter ($p<0.01$), bleeding volume was lower ($p<0.01$), and the rate of access-site complication was significantly lower ($p<0.01$) compared with the 6Fr catheter. The feasibility scores of the left and right coronary catheter were similar in both catheter sizes ($p>0.05$). However, the feasibility scores of the pigtail catheter was significantly difference between the 4Fr and 6Fr catheter ($p<0.05$). QUAL using 4Fr or 6Fr catheters were equivalent ($p>0.05$). The total contrast volume was significantly less in the 4Fr catheter group ($p<0.05$).

Conclusion CAG with 4Fr catheters is technically feasible; it reduces access-site complications after the procedure and the angiographic results were acceptable.

e0641 CONTRAST STUDY OF TRANSULNAR ARTERY PCI AND TRANSRADIAL ARTERY PCI

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Objective To compare the feasibility and safety of TUA-PCI to TRA-PCI (transradial artery PCI).

Methods A total of 320 patients from 38 to 80 years old were randomised into transradial artery PCI group and transulnar artery group. The time of manipulative duration for each procedure of PCI was recorded. The time of Allen's test, lumen diameter (mm), cross area of vessel lumen (mm^2), blood velocity ($V_s \text{ max}$), blood flow resistance index in ulnar and radial artery were measured and recorded, respectively, as well were compared quantitatively before and after PCI procedure.

Result In each group the success rate of puncture of access artery was 98.7%, because each group had two cases failed and transferred to another group. In PCI-TRU group 212 lesion segments of 178 vessels in all patients were angioplasticated successfully via TRU by 6F guiding catheter and 215 stents were implanted. The average time of manipulative duration of guiding catheters engaging in ostium of target coronary artery, the average time of under x-ray fluoroscopy and the total time of the whole procedure were no significant difference between the PCI-TRU group and the PCI-TRA group. In PCI-TRA group 210 lesion segments of 177 vessels in were angioplasticated successfully via TRA by 6F guiding catheter and 214 stents were implanted. When the introducer was taken off, with maintaining heparin infusion immediately after procedure, the access

site in ulnar or radial artery was compressed by a tourniquet for 6 h and the compress pressure were gradually decreased, and it was unnecessary to limit the ambulance of the patients. The average hospital stay was no statistic significance between PCI-TRU group and PCI-TRA group ($p>0.05$). No significant change was found in the parameters of the vessel diameter, blood velocity, cross area of vessel lumen, blood flow resistance index and the level of blood oxygen in finger and no complication such as occlusion of ulnar or radial artery in all patients following up 1 month after PCI procedure.

Conclusion Transulnar artery PCI was as safety and efficacy as transradial artery, the ulnar artery might be selected as one approach of antebrachial artery for PCI in patients with coronary heart disease.

e0642 EFFECT OF INTRACORONARY ANISODAMINE ON NO-REFLOW PHENOMENON AFTER PCI IN MINI-PIG WITH AMI

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Objective To evaluate the effect of intracoronary anisodamine to correct the no-reflow phenomenon during AMI on no-reflow minipig model made by superselective LAD with 4F catheter then injection of micro thrombus.

Method 14 no-reflow minipig models were randomised to intracoronary saline (4 ml), diltiazem (1 mg diluted to 4 ml) and anisodamine (2 mg to 4 ml) groups. CAG was performed at 1, 3, 5, 10th minute after intracoronary injection. Corrected TIMI frame count and coronary artery diameter were obtained by QCA, meanwhile ECG and hemodynamic parameters (HR, LVEDP, intracoronary MAP) were recorded.

Results The corrected TIMI frame count in Anisodamine group was significantly decreased by 13.2%, 25.3%, 35.6%, 33.6% at 1, 3, 5, 10th minute compared with saline group, while decreased by 10.6%, 20.4%, 14.3%, 21.5% at 1, 3, 5, 10th minute compared with diltiazem group, (respectively). The medial LAD diameter in Anisodamine group increased from $2.12\pm0.38 \text{ mm}$ to $2.60\pm0.43 \text{ mm}$ ($p<0.05$) while to $2.51\pm0.42 \text{ mm}$ in diltiazem group as compared before ($p<0.05$). HR and intracoronary MAP were increased and LVEDP reduced at 1, 3, 5, 10th minute after administration of anisodamine, which had significance compared with group NS (125 ± 20 vs $140\pm25 \text{ bpm}$, 95 ± 12 vs $126\pm13 \text{ mm Hg}$, $p<0.05$), accompanied with HR increasing ($p<0.05$). It was very important that no serious side effect and toxic reaction were found.

Conclusions Intracoronary anisodamine might reduce and correct the no-reflow phenomenon after PCI-AMI with the dilation of coronary vessel and hemodynamic improvement, as well as no serious side effect and toxic reaction.

e0643 EFFECTS OF NO-REFLOW PHENOMENON IDENTIFIED BY MYOCARDIAL BLUSH GRADES ON SYSTOLIC FUNCTION AND SYNCHRONY IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AFTER PCI

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Objective To investigate the effect of no-reflow phenomenon after percutaneous coronary intervention (PCI) in patients with acute myocardial infarction (AMI).

Methods A total of 128 patients with the first AMI of the anterior wall were involved in this study. All patients underwent coronary

angiography, PCI, and left ventriculography about 6 to 12 h after onset of AMI symptoms and were divided into two groups: the no-reflow group (0 to 1 grade) and reflow group (2 to 3 grade) identified by MBG. Equilibrium radionuclide angiography was performed 1 week after PCI to gain the parameters of left ventricular regional and global systolic function and systolic synchrony. All patients were reinvestigated at 6 months, and major adverse cardiac events were recorded during the 6 months after PCI.

Results At 6 months after AMI-PCI, the values of left ventricular end-systolic volume index, left ventricular end-diastolic volume index, wall motion score, and left ventricular end-diastolic volume pressure in the no-reflow group were significantly increased, whereas left ventricular ejection fraction, peak ejection rate, and peak filling rate of radionuclide angiography parameters were significantly decreased ($p<0.05$), respectively, compared with those in the reflow group. LrEF2-LrEF8 in the no-reflow group at 6 months after AMI-PCI were reduced ($p<0.05$) more than those in the reflow group, respectively. There was no improvement on the phase analysis in the no-reflow group at 6 months after AMI-PCI, and the values of PS FWHM and PSD were increased compared with those in the reflow group ($p<0.05$; respectively). Within the 6-month follow-up period, the incidence of major adverse cardiac events in the no-reflow group was significantly higher than in the reflow group.

Conclusion The infarct-related zone myocardium post-AMI still has no reperfusion status and directly causes the reduction of the regional and global left ventricular systolic performance with an increase of systolic asynchrony. It then progressively decreases the efficiency of ventricular blood ejection as well as causes ventricular remodelling with adverse long-term outcome in patients with AMI.

e0644 ESTABLISHMENT OF CONTRAST INDUCED NEPHROPATHY MODEL IN RATS

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Objectives The purpose of this study was to establish an rat model of CIN and to evaluate its efficacy.

Methods Totally 24 SD rats were randomly allocated into experimental group (group A, $n=12$) and control group (group B, $n=12$). After dehydration for 3 days, rats in group A were given intravenous MDDS, while rats in group B were given intravenous normal saline. Then, all rats got normal water-drinking to the end of study. Renal ultrasonic examination was performed to observe the morphologic changes, diameters of renal artery and blood flow in renal artery. Blood samples were taken to measure the level of serum creatinine. The tissue of kidney were incised for microscope and electron microscope study.

Results The dimensions of the two groups before and after dehydration were not different. It gradually enlarged after CM injection. These changes were the most obvious at 6 and 12 h, which did not recover at 24 h. The PSV, EDV, S/D and VTI were lowest at 6 h and then recover to normal level at 24 h. RI was increased after CM injection, the lowest occurred at 6 h, and recovered to normal level at 24 h. Serum creatinine was significantly elevated after dehydration, the highest level occurred at 12 h and then began to recover at 24 h. Microscope examination to renal sample at 12 h found patch disappearance of tubular structure, widely congestion at medullar area. No pathological glomerular changes were found under microscope. Electron microscope examination found desquamation, sparseness of microvillous of tubular endothelium, membrane confusion, disappearance, swelling, fragmentation of the MIT, with obstructed tubular lumen and basal membrane swelling.

Conclusion Combined with dehydration, intravenous injection of contrast lead to obvious acute kidney injury, with the changes of kidney tissue pathology, haemodynamics and kidney functions which are similar to the characteristics of CIN in human beings.

e0645 PROTECTIVE EFFECTS OF SIMVASTATIN COMBINED WITH ANISODAMINE ON MYOCARDIAL PERFUSION IN SWINE NO REFLOW MODEL

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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, TMFG 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 begun 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 antioxidation.

e0646 PROTECTIVE EFFECT OF INTENSIVE STATIN PRETREATMENT ON RENAL FUNCTION IN PATIENTS WITH ACUTE CORONARY SYNDROME UNDERGOING PERCUTANEOUS INTERVENTION

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