

(38.3% VS 24.3%, $p=0.007$), hypertension (84.1% VS 76.1%, $p<0.001$), hyperlipidemia (89.7% VS 79.0%, $p=0.016$), chronic renal insufficiency (24.3% VS 8.2%, $p<0.001$) was higher in the diabetes mellitus group. The incidence of multi-vessel disease was higher in the diabetes mellitus group (41.1% VS 29.6%, $p=0.035$), but the incidence of one-vessel disease was higher in the non-diabetes mellitus group (27.1% VS 44.4%, $p=0.002$). The incidence of composite major adverse cardiac events of one year was higher in the diabetes mellitus group (19.6% VS 9.5%, $p=0.008$). The incidence of death of one year was higher in the diabetes mellitus group (13.1% VS 4.5%, $p=0.004$).

CONCLUSION The diabetic patients with acute myocardial infarction is older and have higher ratio of female gender, smoking, hypertension, hyperlipidemia and chronic renal insufficiency than the non-diabetic patients with acute myocardial infarction; Compared to the non-diabetic patients with acute myocardial infarction, the diabetic patients with acute myocardial infarction show a preponderance of multi-vessel disease, the drug-eluting stent does not increase the incidence of myocardial infarction, target lesion revascularization, restenosis and stent thrombosis in the diabetes mellitus group. The incidence of composite major adverse cardiac events of one year is higher in the diabetes mellitus group, the all-case death was the dominant event.

INVASIVE CORONARY IMAGING: IVUS, OCT, SPECTROSCOPY, AND OTHER (TCTAP A-159)

TCTAP A-159

Optical Coherence Tomography Assessment of Calcium Fracture by Percutaneous Coronary Intervention in Heavily Calcified Lesions

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BACKGROUND Heavily calcified lesions in coronary arteries have been known as a cause of stent under expansion, which increases the risk of in-stent restenosis. The aim of the present optical coherent tomography (OCT) study was to investigate clinical impacts of coronary calcium fracture by percutaneous coronary intervention (PCI) on the outcomes after everolimus-eluting stent implantation.

METHODS We enrolled 61 patients with chronic stable angina who had a heavily calcified culprit lesion on coronary angiography. OCT was performed before and immediately after PCI. Follow-up angiography was conducted at 10 months after PCI.

RESULTS Calcium fracture was seen in 48% of patients by OCT. The median calcium fracture thickness was 450 μ m (interquartile range 300 to 660 μ m). The maximum calcium fracture thickness was 770 μ m. Minimum stent area was significantly greater in the group with calcium fracture compared with the group without calcium fracture (5.02 \pm 1.43 mm² vs. 4.33 \pm 1.22 mm², $p=0.047$). Stent expansion index was significantly greater in the group with calcium fracture compared with the group without calcium fracture (0.88 \pm 0.17 vs. 0.78 \pm 0.18, $p=0.030$). At 10 months follow-up, the frequency of binary restenosis (14% vs. 41%, $p=0.024$) and target lesion revascularization (7% vs. 28%, $p=0.046$) was significantly lower in the group with calcium fracture compared with the group without calcium fracture.

CONCLUSION This study reveals that coronary calcium fracture by percutaneous coronary intervention was associated with adequate stent expansion and favorable late outcomes.

NON-INVASIVE CARDIAC IMAGING: CTA, MRI, 3D-ECHO, AND OTHER (TCTAP A-160 TO TCTAP A-162)

TCTAP A-160

Percutaneous Transvenous Mitral Commissurotomy: Significance of Echocardiographic Assessment in Prediction of Long Term Result

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BACKGROUND This study aims to identify demographic, clinical characteristics, echocardiographic and/or mitral valve morphological subcomponents that may predict the successful result of percutaneous transvenous mitral commissurotomy (PTMC).

METHODS The medical records of 70 patients (47 females, mean age: 55 \pm 13 years) who underwent PTMC were reviewed. Prior to PTMC, a combination of transthoracic and transesophageal echocardiography were used to investigate all essential mitral valve morphological subcomponents (thickening, mobility, calcification, and subvalvular thickness) and suitability for PTMC. The second transthoracic echocardiographic assessment was performed within 12 months after PTMC. Patients were divided into two categories of successful or unsuccessful according to PTMC results. Successful PTMC was defined as: final mitral valve area (MVA) \geq 1.5 cm² without a post-procedure mitral regurgitation (MR) grade $>$ 2. The significant predictor of the result was identified by comparing demographic data, initial echocardiographic assessments and mitral valve morphological scores within both groups.

RESULTS The mean MVA increased from 0.9 \pm 0.3 cm² to 1.5 \pm 0.2 cm², and mitral valve mean gradient (MVMG) decreased from 12 \pm 5 to 5 \pm 3 mmHg ($P < 0.005$ for both). Successful results were obtained in 51 (73%) patients compared to unsuccessful results in 19 (27%). Unsuccessful results were due to suboptimal secondary MVA $<$ 1.5 cm² in 19 (25.5%) patients and post-procedure MR grade $>$ 2 in 3 (4%). Multiple logistic regression analysis indicated that young age, lower size of the left atrium (LA), and smaller degree of mitral valve calcification were the predictors of successful result of PTMC.

CONCLUSION Pre-procedure echocardiographic assessment is very helpful in predicting PTMC results. Successful PTMC is influenced by the patients' age, LA size, and mitral valve calcification.

	Before PTMC	12 months after PTMC	p-value
mitral valve orifice (cm ²)	0.9 \pm 0.3	1.5 \pm 0.2	<0.005
MVMG (mmHg)	12 \pm 5	5 \pm 3	<0.001
indexed LA size (mm/m ²)	50 \pm 10	24 \pm 4	<0.005

TCTAP A-161

Will Lower Limb Pneumatic Compression During Dobutamine Stress Echocardiography Increase Its Diagnostic Accuracy?

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BACKGROUND Pneumatic compression of the lower part of the body increases left ventricular afterload. We compared the diagnostic accuracy of dobutamine stress echocardiography (DSE) with pneumatic compression of the lower extremities, versus standard DSE, for detection of significant coronary artery disease (CAD) in patients with normal baseline resting wall motion abnormalities.

METHODS We enrolled 70 consecutive patients with no resting wall motion abnormalities (WMA) who underwent DSE. DSE was repeated with pneumatic compression of the lower extremities 3 days after the standard DSE. Positive test was defined as the induction of WMA in at least 2 contiguous non-overlap segments at any stage of dobutamine infusion. Significant coronary stenosis was defined as \geq 50% obstruction of \geq 1 sizable artery by coronary angiography.

RESULTS The mean age of the study cohort was 54.7 \pm 9.9 years; 55.7% were females. Thirty-eight patients (54.3%) had significant CAD. The mean test duration was 15.8 \pm 5.1 minutes for standard DSE and 11.7 \pm 4.1 minutes for DSE with pneumatic compression. Analysis of standard DSE revealed sensitivity, specificity, positive and negative predictive values of 81.6%, 90.6%, 91.2%, 80.6%; overall accuracy was 85.7%. Analysis of DSE with pneumatic compression revealed sensitivity, specificity, positive and negative predictive values of 89.5%, 87.5%, 89.5%, 87.5%; overall accuracy was 88.6%

CONCLUSION In symptomatic patients with suspected CAD who have no resting WMA, pneumatic compression of the lower extremities during DSE improved the sensitivity but slightly reduced the specificity for detection of significant CAD compared with standard DSE. Moreover, it reduced the test duration.