Conclusions: Failure to cannulate the LIMA selectively is far more common than non-selective (NON, > 5 mm from ostium) or semi-selective (SEMI, < 5 mm from ostium). The quality of visualization of the vessel supplied by the LIMA was evaluated by investigators blinded to selectivity of catheter placement.

Results: During the period, 6,358 coronary angiograms were performed; 406 patients had a total of 7,36 LIMA injections; 49.7% were SUPER or SEL, 34.5% SEMI, and 15.9% NON. Only 45.7% of injections resulted in excellent distal vessel visualization, 16.4% were rated good; the remaining 37.9% were fair or poor. Selectivity correlated strongly with distal visualization (Figure): excellent in 83.5% of SUPER, 61.0% of SEL, 21.4% of SEMI, and 3.3% of NON (P<0.001).

TCT-308
Impact of Coronary Artery Spasm on Development of New-onset Diabetes Mellitus in Asian Population
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Background: There have been several reports that endothelial dysfunction predicts type 2 diabetes. It is still controversial whether a coronary artery spasm (CAS) is a risk factor of new-onset diabetes mellitus (DM), especially in Asian population.

Methods: We investigated the 4,231 patients (pts) who had HbA1C level < 6.0% and fasting glucose level < 100 mg/dL (CAS group =303 and control group =3,928). CAS was defined as transient coronary artery narrowing 70% or more by acetylcholine provocation test. To adjust confounders including age, gender, hypertension, hyperlipidemia, chronic kidney disease, hyper/hypo-thyroidism, lipid profile, beta-blocker, diuretics, a propensity score matched analysis was performed. The primary end-point was the cumulative incidence of new-onset DM (HbA1C level > 6.5% or fasting glucose level > 126 mg/dL). Also, multivariable cox-regression analysis adjusted by aforementioned variables was performed to determine the impact of CAS on the incidence of new-onset DM.

Results: Mean follow-up duration was 908±558 days in all-pts group, and 805±579 days in PSM group. Baseline characteristics were similar between the two groups in PSM cohort. In Kaplan-Meyer curve, there was no difference between the two groups (p=0.937, figure A). Also, in cox-regression analysis performed in all pts, presence of CAS was not associated with the increased incidence of primary end-point (figure B).

Conclusions: In our study, there was no clear association between CAS and new-onset DM in a series of cardiovascular pts in Asian population.

TCT-309
Impact of Hyperuricemia on Coronary Artery Spasm as assessed with Intracoronary Acetylcholine Provocation Test
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Background: Hyperuricemia is known to be associated with cardiovascular complications. However, there are limited data whether there is a clear association between hyperuricemia and significant coronary artery spasm (CAS) as assessed with intracoronary Acetylcholine (Ach) provocation test.

Methods: This study consisted of 5,324 consecutive patients (pts) who underwent coronary angiography with Ach provocation test from January 2004 to September 2012. Study population were; Hyperuricemia group (>7mg/dL, n=216) and Control group (<7mg/dL, n=2,462). Significant CAS was defined as transient >70% luminal narrowing with chest pain and/or ST segment changes.

Results: The baseline clinical characteristics were balanced between the two groups except the hyperuricemia group had more male gender, hypertension, current smoker, current alcoholics and higher body mass index, whereas the control group had more elderly. During the Ach provocation test, the hyperuricemia group showed higher incidence of multivessel spasm and ischemic EKG change (Table). Other major angiographic and clinical parameters were similar between the two groups.

Conclusions: In the present study, although the incidence of CAS with Ach provocation test was not different in both groups, the pts with hyperuricemia was significantly associated with higher incidence of multivessel spasm and ischemic ST-T change during the Ach provocation test as compared with pts without hyperuricemia.

TCT-310
Impact of Ischemic EKG Changes during the Acetylcholine Provocation Test on 12-month Clinical Outcomes in Patients with Vasospastic Angina
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Background: Clinical significance and angiographic characteristics of patients with ischemic EKG changes during the Ach provocation test are not clarified yet as compared with pts without EKG change.

Methods: A total 3034 consecutive pts underwent coronary angiography with Ach provocation test were enrolled. EKG changes were defined as ST segment depression or elevation (>1mm) and T inversion with/without chest pain. We compared the clinical and angiographic characteristics of patients with EKG changes to those without EKG changes.

Results: The baseline clinical and procedural characteristics are well balanced between the two groups. EKG change group showed more frequent chest pain, higher incidence of baseline spasm, severe vasospasm, multi-vessels involvements, and more diffuse spasms (>30mm) than those without EKG changes (Table 1). At 12 months, the incidence of mortality and myocardial infarction were higher in the EKG change group. There was a trend toward higher incidence of target vessel revascularization (TVR)-major adverse cardiac events (MACE) in the EKG change group (Table 2).

Conclusions: The pts with EKG changes during the Ach provocation tests were associated with more frequent chest pain, baseline spasm, diffuse, severe and...
multivessel spasm than pts without EKG changes, suggesting more intensive medical therapy with close clinical follow up will be required.

### Results:

CABG.

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The aim of this investigation was to examine whether overall severity of coronary stenosis has impact on the effects of percutaneous coronary intervention (PCI) and coronary artery bypass graft (CABG) on clinical outcomes in patients with stable angina pectoris.

Methods: We retrospectively analyzed 795 consecutive patients who underwent PCI (n = 658) or CABG (n = 28) in PCI, and 82 (5.3%) patients underwent PCI and 16 (0.8%) patients underwent CABG on clinical outcomes in patients with stable angina pectoris.

Results: The mean age of patients treated with CABG was highest among the three groups: 76.2 ± 12.8 in OM1, 72.1 ± 11.6 in PCI, and 73.0 ± 10.6 in CABG (p < 0.05). Incidence of MACE in the PCI group was significantly higher in high GS subgroup than in low GS subgroup (37% vs. 16%; p = 0.0024) (Figure 1A). However, in the CABG group, incidence of MACE was not different between high and low GS subgroups (25% vs. 23%; p = 0.56) (Figure 1B).

Conclusions: Overall severity of coronary stenosis has significant impact on the clinical outcome after PCI but not that after CABG. For stable angina pectoris patients with high GS (especially those with GS ≥ 66), CABG might be preferable to PCI.

### TCT-312

Relation Of Living Alone On Three Years Long-Term Outcomes of ST Elevation Myocardial Infarction

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Background: A recent survey showed that more than 30% of households in Japan are single households; this was the largest group among households by family type. In addition, heart disease accounted for 15.9% of all deaths, and this is increasingly annually. The aim is to study the impact of lifestyle (living alone) on long-term outcomes of patients who underwent PCI for acute myocardial infarction.

Methods: Subjects were 488 patients with ST elevation Myocardial Infarction who underwent PCI from 2003 to 2008. Patients were classified into those who lived alone (L group n = 182) and those who did not live alone (NL group n = 306) and were compared for lifestyle at time of onset (age, occupation, time period of onset, behavior at time of onset, history of dietary therapy or exercise therapy), clinical characteristics, and lesion characteristics. The two groups were compared for mortality rate within 30 days and MACE/cardiac death, non-fatal cardiac infarction, TLR at 1 year. The two groups were compared for MACE, MACCE, and all-cause mortality rates in the long-term at 3 years as well.

Results: 66.8% had a history of smoking, and the occupation of worker (indoors, light work) was the highest at 16.7%. In QCA, there was no difference between the L group and NL group in late loss as well (L: 1.08 mm vs. NL: 0.96 mm). Mortality within 30 days was significantly higher in the L group compared to the NL group (14.1% vs. 6.8%; p < 0.05), and this was also higher at 1 year in the L group (25.1% vs. 17.9%; p < 0.05). At 3 years, MACE (34.8% vs. 21.8%; p < 0.01), MACCE (38.1% vs. 23.3%; p < 0.01), and all-cause mortality (42.7% vs. 24.9%; p < 0.01) were all significantly higher in the L group compared to the NL group. When multivariate analysis was used to study associations within the L group, female gender (OR, 0.51; 95% CI, 0.27 to 0.93) and small stature (OR, 0.93; 95% CI, 0.88 to 0.98; p < 0.05) were found to be factors influencing MACE.

Conclusions: It could be considered that living alone affects the long-term prognosis of patients with acute myocardial infarction. Being a female patient with small stature was surmised to be a prognostic factor having a notable association with outcome.

### TCT-313

Prolonged Resuscitation Efforts in the Catheterization Laboratory; Mechanical Chest Compressions Saves Lives and Facilitates Percutaneous Cardiac Intervention

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Background: Resuscitation in the catheterization laboratory (cath-lab) with mechanical chest compressions (MCC) and simultaneous percutaneous coronary intervention (PCI) is since 2010 a class IIa recommendation in AHA resuscitation guidelines. Our five year experience (2004 – 2008) with MCC in the cath-lab showed a 25% survival rate. Aim of current study was to evaluate the outcome among patients suffering cardiac arrest in the need of prolonged resuscitation efforts with MCC during simultaneous PCI during the subsequent four years.

Methods: Patients admitted to the cath-lab with circulation on their own and some-time during the intervention suffered cardiac arrest, resistant to normal advanced life support treatment and thus in need of prolonged resuscitation efforts with the MCC LUCASTM-device (Physio-Control Inc/Jolife AB Sweden) were included. Patients arriving to the cath-lab with on-going MCC were also included. The evaluated period ranged between April 2009 – April 2013. Evaluated parameters were duration of MCC, Successful PCI, survival from cath-lab and discharge from hospital.

Results: 44 patients (32 STEMI, 5 Non-STEMI, 2 planned PCI, 1 angiogram, 1 stent occlusion, 1 IABP, 2 cardiac tamponade) were included. Thirty-two patients arrived with sustained circulation and 12 patients arrived with on-going MCC. MCC were in cardiogenic shock, 33 of 41 patients were successfully treated with PCI. 35 inter- ventions were performed with on-going MCC. Treatment duration time with MCC for all 44 patients was median (range) minutes, 42.5(5 – 90), those discharged from cath lab (n=17), 20(5 – 90) and of those discharged from hospital (n=8), 10.5 – 45). None of the patients arriving with ongoing MCC to the cath-lab survived to discharge from hospital. However in patients arriving to the cath-lab with sustained circulation, we noted a 25% survival rate to discharge from hospital in Cerebral Performance Category 1 or 2.

Conclusions: This study confirms our earlier study with a survival rate of 25% among patients treated with MCC during simultaneous PCI when arriving to the cath-lab with spontaneous circulation. However, survival rate among patients arriving to the cath-lab with ongoing MCC are dismal.