super-selective (SUPER, inside the LIMA), selective (SEL, at origin), semi-selective (SEMI, < 5 mm from ostium), or non-selective (NON, > 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 7,366 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).

**Conclusions:** Failure to cannulate the LIMA selectively is far more common than generally appreciated, and results in suboptimal visualization of the native target vessel. Because clinical decision making is dependent on distal vessel visualization, our data highlight an important but under-recognized and under-addressed problem.

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**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-pt 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.

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**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 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.

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**TCT-J10**

**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 tests 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 spasm (>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 (MACCI) 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...