myocardial infarction, stent thrombosis, TVR).

**Results:** The DES and BMS groups were well matched except that DES patients received dual antiplatelet therapy for a longer duration and had smaller final vessel diameter. In survival analysis, at a mean follow-up of 1333 ± 659 days after PCI, the DES group had similar incidence of death/myocardial infarction (24 vs 27%, log rank p=0.23) and stent thrombosis (4.0 vs 2.6%, p=0.18) as the BMS group. The DES patients had lower incidence of TVR (8 vs 17%, p=0.0018) but similar MACE (26 vs 37%, p=0.31). In multivariable analysis, DES vs BMS implantation showed no significant impact on death/myocardial infarction [adjusted hazards ratio (HR) 1.0, 95% confidence intervals (CI) 0.7–1.4], stent thrombosis (HR 1.7; CI 0.7–4.0), or MACE (HR 0.8; CI 0.6–1.1). However, TVR was lower in the DES group (HR 0.4; CI 0.3–0.7).

**Conclusion:** In patients presenting with NSTEMI, DES implantation appears to be as safe as BMS implantation at long-term follow up.

**TCT-222**

**Everbolimus-eluting stents show no stent thrombosis with similar one year outcomes compared with 1st and 2nd generation drug-eluting stents for the treatment of ST-segment elevation myocardial infarction**

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**Background:** There were no published data regarding the clinical efficacy and safety of second generation drug-eluting stent (everolimus-eluting stent, EES) following primary percutaneous coronary intervention (PCI) in ST-elevation myocardial infarction (STEMI). We evaluated the one-year outcome of everolimus-eluting stent versus to 1st generation (sirolimus-eluting stent, SES and paclitaxel-eluting, PES) and 2nd generation (zotalimus-eluting stent) drug-eluting stents (DES) for the treatment of STEMI.

**Methods:** A prospective, open-label, multi-center cohort has been performed at 4 centers in Korea. All patients will be clinically followed-up for two years. The primary endpoint was major adverse cardiac event (MACE): the composite of cardiac death (CD), recurrent MI and ischemia-driven target vessel revascularization (TVR) at 1 year. ST-segment revascularization (ST) was 0%, 2.0%, 2.0% and 2.0% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Cardiac death was 1.0%, 2.5%, 1.5% and 1.0% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Recurrent MI was 2.0%, 2.0%, 2.0% and 2.0% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Clinical events at 12 months and stent thrombosis

**Results:** Total 797 patients (EES=197, ZES=203, SES=203, PES=194) who were completed more than one year were analyzed. One-year MACE were 2.0%, 5.9%, 8.0%, and 5.4% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Cardiac death was 1.0%, 2.5%, 1.5% and 1.0% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Recurrent MI was 1.0%, 5.7%, 12.0%, 13.1%, and 1.0% in EES-, ZES-, SES- and PES-group, respectively (p=ns). Clinical events at 12 months and stent thrombosis

**Conclusion:** Compared to 1st and 2nd generation DES (SES and PES), EES showed similar one-year clinical outcomes in terms of MACE in patients with STEMI following primary PCI and no stent thrombosis.

**TCT-223**

**Complete Revascularization and Clinical Outcomes of Patients with Multivessel Disease**

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**Background:** Randomized clinical trials showed safety and efficacy of everolimus eluting stent compared to first generation drug eluting stent in patients with multivessel disease. However, the results were obtained in selected patients with intermediate pre-procedure lesion complexity and most of the clinical endpoint analysis were performed in small subgroups.

**Methods:** Among 3067 consecutive patients treated with Nobori DES, and enrolled in NORBIT III study, 1788 patients had multivessel disease and were included in this analysis. The primary endpoint of the study was the composite of cardiac death, target vessel related MI and target lesion revascularization (TLR) at 1 year. Data are entered in an electronic database; all adverse events are adjudicated by an independent clinical event committee and all angiograms are analyzed by an independent core lab.

**Results:** Complete PCI patients were younger and had less often previous CABG, hypertension and ACS. Number of diseased vessels and detected lesions was significantly lower in the complete-PCI group but the number of treated vessels and stents implanted was significantly higher. Lesion complexity was similar in both groups with more thrombotic lesions in patients with incomplete-PCI. Among OCA assessed parameters, lesions were shorter with lower diameter stenosis pre-procedure in complete-PCI group. At 2 year follow-up TLR rate was slightly higher in the complete-PCI group (6.6% vs 5.5%; p=0.4) while non-TVR rate was lower (2.2% vs 5.6%; p=0.001). Stent thrombosis was low in both groups (1.0% vs 1.1% incomplete-PCI; p=NS).

**Conclusion:** Despite higher number of stents implanted in the complete-PCI group, TLR was comparable with the incomplete-PCI group at 2 years. Therefore selective revascularization strategy of the most critical lesions (followed by deferred revascularization of some not treated lesions) in higher risk patients is safe and results in a favorable outcome.

**TCT-224**

**Coating irregularities of drug-eluting stents as assessed by scanning electron microscopy**

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**Background:** Implantation of drug eluting stents (DES) tends to be implanted in complex lesion compared with bare metal stent era. Preservation of integrity of polymer coating in these complex lesions is an important issue.

**Methods:** Taxus LibertéTM, Endeavour SprintTM, Xience VTM, Cypher SelectTM and NoboriTM DES (five samples of each) were explored by scanning electron microscopy (SEM) following expansion at nominal pressure. In addition to simple expansion, a part of samples were tasked through the 5 or 6 French catheter with a parallel wire in order to stimulate the injury. We classified DES coating damage into four groups which were irregularities (Type I), cracks (Type II), craters with metal exposure (Type III) and webbings (Type IV). Each DES showed specific feature of abnormalities in polymer coating such as webbing in Taxus LibertéTM, craters in Endeavour SprintTM and minor cracks in NoboriTM.

**Results:** After the injuries, craters with metal exposure were slightly increased in NoboriTM, Xience VTM, while it was largely increased in Endeavour SprintTM. The damage of polymer coating by the creation of injury was minimal Taxus LibertéTM. The craters with metal exposure were seen in all types of DES. Among them, the incidence of areas with bare metal exposure was particularly low in NoboriTM, Xience VTM and Cypher SelectTM. Endeavour SprintTM showed the largest metal exposure with scratch. Webbings of the coating were found in Taxus LibertéTM, while they were not seen in Endeavour SprintTM.

**The incidence of coating abnormality in all population**

<table>
<thead>
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<th>Type</th>
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<th>ZES (%)</th>
<th>SES (%)</th>
<th>PES (%)</th>
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<td>100</td>
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</tr>
<tr>
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**Conclusion:** The incidence of various coating irregularities in different types of DES varied widely. These data give us insight into the choice of DES especially in complex lesions.

**TCT-225**

**Safety and Efficacy of the Xience Everolimus Eluting Stent Compared to First-Generation Drug-Eluting Stents in Contemporary Clinical Practice**

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**Background:** Randomized clinical trials showed safety and efficacy of everolimus-eluting stent in selected patient populations. However, since the approval of second-generation stents in the US, limited data are available with regard to their safety and efficacy in unsellected, consecutive patients.

**Methods:** Consecutive patients at Washington Hospital Center who underwent coronary artery stent implantation with Xience, Taxus or Cypher stents were analyzed. Patients who received other stent types were excluded. Analyzed clinical end points were death, TLR, definite stent thrombosis (ST), and MACE (QWMI, or TLR) at 1 year. Results: A total of 5983 patients received DES. Xience patients had higher rates of hypertension (89% vs. 86% vs. 85% respectively; p=0.003) and diabetes (40% vs. 35% vs. 35%; p=0.03) but lower rates of family history of CAD (47% vs. 53% vs. 52%; p=0.008) as compared with Cypher and Taxus. Nearly half of the patients had PCI for unstable angina (51% vs. 43% vs. 45%; p<0.001) and treated lesions were more likely to be Type C among Xience patients (47% vs. 21% vs. 23%; p<0.001). Unadjusted 1-year MACE (8.1% vs. 9.6% vs. 11.2%) and all-cause mortality (3.4% vs. 4.8% vs. 6.9%) were significantly lower for Xience patients compared with Taxus but not to Cypher patients. (Figure) After adjusting for confounders, TLR rates were not significantly different for Xience patients as compared with Cypher or Taxus patients. (Figure) After adjusting
for clinical characteristics, Xience stent utilization was no longer associated with improved outcome.

**TCT-226**

Five Year Survival After Percutaneous Coronary Intervention With Drug Eluting Stents And Bare Metal Stents In All-Comers. A New Jersey Statewide Database Study

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**Background:** Drug eluting stents (DES) have been shown to significantly decrease restenosis with subsequent need for lesion and/or vessel revascularization when compared with bare metal stents (BMS) in selected patient groups in randomized trials and in observational registries. If their use in all-comers is also associated with a survival benefit over a longer follow-up is controversial.

**Methods:** We used the Myocardial Infarction Data Acquisition System (MIDAS), a New Jersey statewide database, to examine the mortality of 37,812 patients (pts) who underwent PCI (emergent or elective) with a single stent, either BMS (n=14,939) or DES (n=22,873) from 2003 to 2004, with follow-up of 60 months.

**Results:** The total mortality and the cardiovascular death were significantly lower (13.63% vs. 18.67%; p<0.0001) and (5.85% vs. 9.17%; p<0.0001) respectively among patients who received DES compared to BMS. After adjusting for baseline characteristics such as age, sex, race, diabetes, hypertension, renal disease, anemia, cancer, cerebrovascular disease and left ventricular dysfunction the benefits associated with DES persisted; the hazard ratios for total mortality and cardiovascular mortality were 0.78 (95% CI 0.73 to 0.89; p<0.0001) and 0.77 (95% CI 0.67 to 0.89; p<0.0004) respectively.

**Conclusion:** In this population based observational study, patients who received DES had significantly lower 5 year total and cardiovascular mortality than those who received BMS.

**TCT-227**

Validation of Age, Creatinine, and Ejection Fraction Score As a Risk Assessment Tool In Patients Undergoing Stent Implantation During Percutaneous Coronary Intervention. A Report from the Dynamic Registry of the National Heart, Lung, and Blood Institute

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**Background:** Previous studies have demonstrated the potential utility of the age, creatinine, and ejection fraction (ACEF) score [age/(left ventricular ejection fraction + 1, if creatinine > 2.0 mg/dL)] to assess the risk of mortality and myocardial infarction (MI) 1 year after percutaneous coronary intervention (PCI). However, this score has not been extensively validated in patients undergoing PCI in routine clinical practice. Therefore, we sought to investigate if the ACEF score would predict adverse events in patients undergoing contemporary PCI.

**Methods:** A total of 2779 patients, who received at least one stent during PCI and of whom data was available to calculate the ACEF score, were selected from Waves 4 (2004) and 5 (2006) of the NHLBI Dynamic Registry. The in-hospital and 3-year outcomes (mortality and MI) were prospectively collected and stratified according to the ACEF score tertiles.

**Results:** The ACEF scores were as follow: LOW <1.0477, MID <1.3819, and HIGH ≥1.3819. An increasing trend in ACEF score was associated with increases in inhospital mortality (LOW = 0%, MID = 0.4%, HIGH = 2%; p<0.0001). Similarly, HIGH had the highest mortality at 3-year follow-up (figure). After adjustment for confounding variables, the relationship between high ACEF score and mortality at 3 years remained statistically significant.

**Conclusion:** The ACEF score may serve as a risk assessment tool for mortality after PCI. Future studies are needed to better determine the use of ACEF score in routine clinical practice.

**TCT-228**

Four-year follow-up of the SYNTAX trial: Optimal Revascularization Strategy in Patients with Three-vessel Disease and/or Left Main Disease

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**Background:** The SYNTAX trial was designed to compare percutaneous coronary intervention (PCI) with paclitaxel-eluting TAXUS Express stents versus coronary artery bypass surgery (CABG) for the treatment of 3-vessel (3VD) and/or left main coronary disease (LM). This analysis compares outcomes at 4 years.

**Methods:** SYNTAX is a randomized clinical trial with nested registries. A cardiac surgeon and interventional cardiologist screened consecutive patients with de novo 3VD and/or LM disease. The patient was randomized if amenable for equivalent revascularization with both treatments; otherwise, they were enrolled in a nested registry.

**Results:** At 1 year, MACCE and repeat revascularization were significantly higher in the PCI group. The rate of death/stroke/MI was similar between groups. After 3 years of follow-up, MACCE, repeat revascularization, MI and cardiac death were significantly increased in the PCI arm (Table). Death/stroke/MI and stroke were similar between the groups at 3 years (Table). MACCE at 3 years was similar between treatment arms in patients with low/intermediate SYNTAX Scores but significantly increased in PCI patients with high SYNTAX Scores. The full 4 year results will be available at the time of presentation.

**Conclusion:** The SYNTAX trial may serve as a risk assessment tool for mortality after PCI. Future studies are needed to better determine the use of ACEF score in routine clinical practice.