BACKGROUND The aim of the study was to investigate 3-year major clinical outcomes in patients(pts) with different type of lesions treated with the zotarolimus-eluting stent (ZES) and everolimus-eluting stent (SES) in a series of Korean population in real-world clinical practice.

METHODS A total of 1477 consecutive pts that were treated with PCI and who had follow-up angiography within 12 months after stent implantation, from April 2007 to July 2011 were enrolled. We analyzed the overall 3-year clinical outcomes with logistic regression, and according to left main lesion, bifurcation, small vessel lesion (<2.25mm), calcification, ostial lesion, and diffuse long lesion (>3cm) after propensity score matching. Further, subgroup analysis was performed for diabetics.

RESULTS In overall study population after the baseline adjustment, there were no difference between two groups, with regard to total death (EES vs. ZES, OR 0.952, 95%CI 0.932-0.979; p<0.001) and cardiac death (OR 1.706, 95% CI 0.94-3.076, p=0.07). There was significant reduction of repeated revascularization in EES versus ZES (OR 0.474, 95% CI 0.232-0.971, p=0.041), and in bifurcation lesion (OR 0.245, 95% CI 0.107-0.566, p=0.022), and in calcified lesion (OR 0.211, 95% CI 0.054-0.834, p=0.026). There were no significant differences in total death, cardiac death, MI, and stent thrombosis between EES and ZES in diabetics.

CONCLUSION ZES and EES showed similar safety and efficacy during 3-year follow-up in patients with different type of lesions in all comorbidities. However, in diabetic patients, EES was associated with lower incidence of repeated revascularization rate compared to ZES, especially in patients with bifurcation or calcified lesions.

RESULTS A total of 180 patients were enrolled in the present study. Among 90 patients randomized to DEB-BMS, 2 patients received ZES due to DEB delivery failure. There was no procedural or angiographic failure in the both groups. Mean procedure time ± SD was 58.6±23.1 vs 55.1±18.5 in DEB-BMS vs ZES (minutes, p=0.263). Stent length was 17.1±4.3 mm vs 22.2±6.4 mm (p=0.001) and post-PCI minimal lesion diameter was 2.50±0.44 mm vs 2.61±0.42 mm (p=0.097). There was one clinical follow-up loss in DEB-BMS at 9 months. Death occurred in a patient (1.1%) in DEB-BMS (non-cardiac) and in two patients (2.2%) in ZES (cardiac). There was no myocardial infarction in the both groups. Target lesion revascularization was done in 6 patients (6.7%) in DEB-BMS and in 2 patients (2.2%) with ZES. Nine month follow-up angiography was done in 75 patients with DEB-BMS and 72 patients with ZES. Late loss was 0.52±0.44 in DEB-BMS vs. 0.26±0.36 in ZES (p<0.001). One-sided 97.3% confidence interval of the late loss difference was 0.11–0.41 (p=0.996).

CONCLUSION The occurrence of PSS decreases in second generation DES era. Smooth contour PSS was frequently observed in the first generation DES and appeared to be associated with TL and ST.

BACKGROUND The use of a drug-eluting balloon (DEB) for the treatment of de novo non-small vessel coronary artery diseases (CAD) remains to be evaluated. A previous trial which compared a bare metal stent mounted on a DEB to a sirolimus-eluting stent failed to meet the prespecified non-inferiority criteria and showed unexpected increase of myocardial infarction (MI). The stent struts of a BMS pre-mounted on a DEB might prevent an adequate delivery of the drug to the vessel wall. Therefore, we evaluated the efficacy of a sequential DEB and BMS application for treating de novo coronary lesion in comparison to a zotarolimus-eluting stent (ZES) in the present study.

METHODS The DEB First study is a prospective, randomized, open-label study. We designed it to demonstrate the non-inferiority of a DEB (SequentiPlease, B. Braun) first followed by a BMS (Coroflex Blue, B. Braun) (DEB-BMS) compared with a ZES (Resolute Integrity, Boston Scientific). We used a longer DEB first by 5 mm to treat the full length of a lesion than a BMS to dilate residual stenosis or dissection flap after DEB. Eligible lesion were de novo coronary artery diseases in patients with stable angina, unstable angina or non-ST segment elevation myocardial infarction. The primary endpoint of the study is in-segment late loss (LL) at 9 months measured by quantitative coronary angiography. Secondary endpoints include other angiographic findings and clinical outcomes such as procedural success, all cause death, MI, target vessel revascularization, target lesion revascularization, and stent thrombosis.

RESULTS A total of 4400 lesions follow-up angiography. Among 90 patients randomized to DEB-BMS, 2 patients received ZES due to DEB delivery failure. There was no procedural or angiographic failure in the both groups. Mean procedure time ± SD was 58.6±23.1 vs 55.1±18.5 in DEB-BMS vs ZES (minutes, p=0.263). Stent length was 17.1±4.3 mm vs 22.2±6.4 mm (p=0.001) and post-PCI minimal lesion diameter was 2.50±0.44 mm vs 2.61±0.42 mm (p=0.097). There was one clinical follow-up loss in DEB-BMS at 9 months. Death occurred in a patient (1.1%) in DEB-BMS (non-cardiac) and in two patients (2.2%) in ZES (cardiac). There was no myocardial infarction in the both groups. Target lesion revascularization was done in 6 patients (6.7%) in DEB-BMS and in 2 patients (2.2%) with ZES. Nine month follow-up angiography was done in 75 patients with DEB-BMS and 72 patients with ZES. Late loss was 0.52±0.44 in DEB-BMS vs. 0.26±0.36 in ZES (p<0.001). One-sided 97.3% confidence interval of the late loss difference was 0.11–0.41 (p=0.996).