

patients (30 day: 6% vs 2%, $P = 0.04$, and 1 year: 10% vs 3%, $P < 0.01$), with no significant differences regarding target lesion revascularization (30d: 50% vs 43%, $P = 1.00$; 1 y: 63% vs 50%, $P = 0.22$).

Outcome	Diabetes (n = 94)	Nondiabetes (n = 528)	P Value
Platelet reactivity, n (%)			
HPR at baseline before LD	23 (43.4)	236 (48.7)	0.48
HPR directly prePCI	33 (56.9)	161 (50.3)	0.36
HPR directly postPCI	27 (46.6)	155 (47.3)	0.92
HPR 4 h post-LD	3 (5.6)	12 (4.3)	0.69
Mortality (30 days)	1 (1.1)	8 (1.5)	0.74
Reinfarction (30 days)	5 (5.5)	10 (1.9)	0.04
Mortality (1 year)	3 (3.2)	11 (2.1)	0.51
Reinfarction (1 year)	9 (9.6)	16 (3.0)	<0.01

CONCLUSION The early prasugrel-induced antiplatelet response was similar between DM and non-DM STEMI patients. However, patients with diabetes remain at higher risk for re-infarction.

CATEGORIES CORONARY: Acute Myocardial Infarction

PTRG-DES (PLATELET FUNCTION AND GENOTYPE-RELATED LONG-TERM PROGNOSIS IN DRUG-ELUTING STENT-TREATED PATIENTS WITH CORONARY ARTERY DISEASE) CONSORTIUM

Abstract nos: 29-33

TCT-29

Platelet Reactivity and Clinical Outcomes After Drug-Eluting Stent Implantation in East Asian Patients With Diabetes: Results From the PTRG-DES Registry



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BACKGROUND Diabetes mellitus (DM) is associated with thrombogenicity, clinically manifested by thromboembolic events after percutaneous cutaneous intervention (PCI). This study aimed to investigate the association between DM and platelet reactivity, and clinical outcomes according to DM and high platelet reactivity (HPR) in an East Asian population.

METHODS The PTRG-DES (Platelet function and genoType-Related long-term proGnosis in DES-treated patients) consortium is multi-center prospective registry to determine the relationship between platelet reactivity/genotyping and clinical outcomes in East Asian patients with coronary artery disease following PCI. Consecutive patients were successfully treated with DES and the platelet function test, using the VerifyNow assay (Accriva) was performed during dual antiplatelet therapy following PCI.

RESULTS Between July 9, 2003, and Aug 7, 2018, 13,160 patients were enrolled at 32 academic hospitals and the result of the VerifyNow P2Y12 assay was available in 11,714 patients. The platelet reactivity of patients with DM was significantly higher than that of

non-diabetic patients (DM vs non-DM: 226.0 ± 77.5 P2Y12 reactivity units [PRU] vs 213.2 ± 79.0 PRU, $P < 0.001$). In clinical outcomes, the MACCE rate of patients with diabetes was higher than that of patients without diabetes (DM vs non-DM: 8.8% vs 5.8%, P value <0.001). We categorized patients into four groups based on the presence or absence of DM or HPR, and the highest rate of major adverse cardiac and cerebrovascular events (MACCE) was found in patients with diabetes with HPR (adjusted hazard ratio 1.550, P value <0.001, 95% confidence interval 1.270-1.892) and no significant difference was observed between the DM without HPR group and the non-DM with HPR group during the 10-year follow-up.

CONCLUSION Platelet reactivity was enhanced in patients with diabetes, and HPR was an independent risk factor for MACCE in patients with DM. This analysis from PTRG-DES registry, which included a large East Asian population, demonstrated that HPR was an independent risk factor for MACCE in patients with diabetes.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

TCT-30

Platelet Reactivity and Clinical Outcomes After Drug-Eluting Stent Implantation in East Asian Patients: Results From the PTRG-DES Consortium

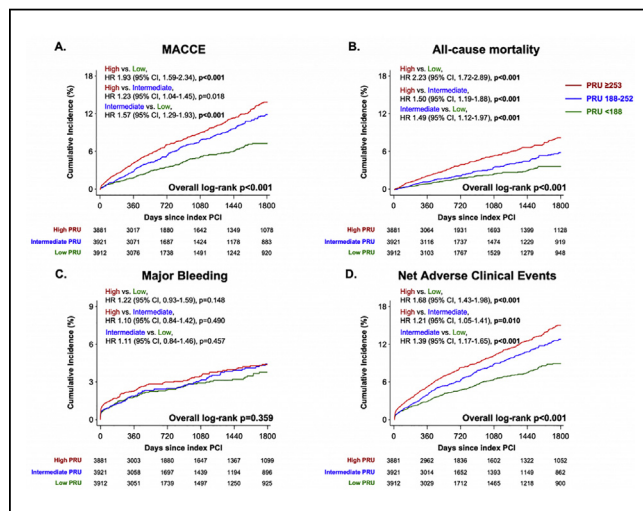


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BACKGROUND The long-term prognostic implication of platelet reactivity after percutaneous coronary intervention (PCI) is not clearly known in East Asian population. From PTRG-DES consortium of patients with drug-eluting stent (DES) implantation, the impacts of platelet reactivity on long-term clinical outcomes were assessed.

METHODS The primary end point was the occurrence of major adverse cardiac and cerebrovascular events (MACCE) including all-cause death, myocardial infarction, stent thrombosis, or stroke. Key secondary end points were all-cause mortality, major bleeding, and net adverse clinical events (NACE) including MACCE and major bleeding.

RESULTS Between 2003 and 2018, a total of 11,714 patients were enrolled and grouped into tertile according to VerifyNow P2Y12 reaction units (PRU): High-PRU (≥ 253), Intermediate-PRU (188-252), and Low-PRU (< 188). The occurrences of the primary outcome were significantly different across the groups; the High-PRU group showed the highest MACCE rate at 5 years (8.0%, 6.1%, and 4.0% in High-, Intermediate-, and Low-PRU; $P < 0.001$), as well as at 1 year (**Figure A**) ($P < 0.001$). The High-PRU group also had the greatest incidence of all-cause death (**Figure B**) (4.9%, 3.0%, and 2.1%; $P < 0.001$) at 5 years without significant differences of major bleeding (**Figure C**), and resultant of a significantly lower rate of NACE (**Figure D**) (10.2%, 8.0%, and 5.9%; $P < 0.001$). PRU ≥ 252 , the best cutoff value of high platelet reactivity, was strongly related to MACCE (HR 1.39, 95% CI 1.11-1.74; $P = 0.003$), and all-cause death at 5 years after PCI (HR 1.42, 95% CI 1.04-1.94; $P = 0.026$).



CONCLUSION In this large-scale East Asian cohorts treated with DES, high PRU was significantly associated with occurrence of MACCE, all-death death, and NACE at 5 years.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

TCT-31

Clinical Impact of Genetics on Clopidogrel-Based Antiplatelet Therapy After Percutaneous Coronary Intervention Using Drug-Eluting Stent



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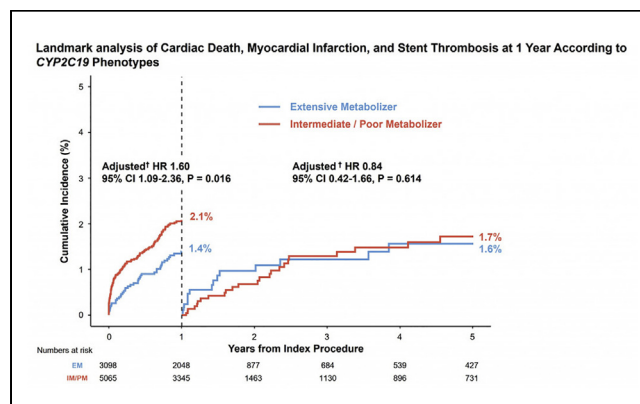
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BACKGROUND Although CYP2C19 genotyping can be beneficial when considering treatment with clopidogrel after percutaneous coronary intervention (PCI), whether genotype-guided strategy can be generally adopted in routine practice remains unclear.

METHODS Of 13,160 patients from the nationwide multicenter PTRG-DES registry, patients who underwent CYP2C19 genotyping were selected. Patients were classified according to predicted CYP2C19 phenotypes: extensive metabolizer (EM) vs intermediate (IM) or poor metabolizer (PM). Primary outcome was a composite of cardiac death, myocardial infarction, and stent thrombosis at 5-year after index procedure.

RESULTS Of 8,163 patients who underwent CYP2C19 genotyping, there were 3,098 (37.9%) in the EM group, 3,906 (47.9%) in the IM group, and 1,159 (14.2%) in the PM group. Mean age of the study population was 64.2 ± 10.8 years, 65.1% were male, and 56.7% were presented with acute coronary syndrome. P2Y₁₂ reaction unit level was significantly different among the 3 groups (EM 194.6 ± 79.5 vs IM 225.0 ± 73.2 vs PM 252.2 ± 74.9 ; $P < 0.001$). IM or PM group was

associated with an increased risk of 5-year primary outcome compared with EM group (HRadj 1.42, 95% CI 1.01-1.98; $P = 0.041$). Unguided de-escalation to clopidogrel monotherapy for IM or PM group was associated with an increased risk of primary outcome at 5 years, compared with EM group without clopidogrel monotherapy (HRadj 2.10, 95% CI 1.35-3.25; $P < 0.001$).



CONCLUSION In patients with clopidogrel-based antiplatelet therapy after DES implantation, CYP2C19 genotyping can stratify patients who are likely to have an increased risk of long-term cardiac death, myocardial infarction, and stent thrombosis.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

TCT-32

Platelet Reactivity and Clinical Outcomes After Drug-Eluting Stent Implantation in East Asian Patients According to LV Dysfunction Status: Analysis From the PTRG-DES (Platelet Function and Genotype-Related Long-Term Prognosis in DES-Treated Patients) Registry



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BACKGROUND High platelet reactivity (HPR) refers to lowered responsiveness to P2Y₁₂ inhibitor in patients with CAD undergoing PCI, which is associated with ischemic events. The optimal cutoff which determines HPR is believed to be varied among different ethnic groups. LV dysfunction is often associated with CAD patients undergoing PCI, described as ischemic cardiomyopathy. However, the impact of HPR on clinical outcomes in these patients according to EF status was not previously investigated in a large East Asian PCI cohort.

METHODS The PTRG-DES registry is a multicenter prospective registry in East Asian patients with DES-based PCI with aspirin and clopidogrel therapy. We measured platelet reactivity using VerifyNow point-of-care assay and LVEF by 2D echocardiography to assess the impact of HPR on clinical outcomes (ischemic and bleeding) in conjunction with different LV EF status.

RESULTS From July 9th, 2003 to August 7th, 2018, a total of 13,160 patients were enrolled. Among them, 9,319 (79.6%) patients were finally analyzed. In terms of clinical outcomes, both MACCE and major bleeding were higher in patients with LV dysfunction, compared with those without LV dysfunction (MACCE: HR 2.16, $P < 0.001$, 95% CI 1.86-2.51; major bleeding: HR 1.65, $P < 0.001$, 95% CI 1.31-2.07). The highest rate of MACCE was found in the patients with HF and HPR with statistical significance (HR 3.14 in LV dys(+)/HPR(+) group vs LV dys(-)/HPR(-), $P < 0.01$, 95% CI 2.51-3.91).