with a higher risk of bleeding have limited its widespread use. As the rates of early stent thrombosis are higher especially in the early stages of STEMI, the use of a more potent DAPT regimen in the initial period could potentially confer the most benefit. We therefore sought to evaluate the safety and efficacy of a hybrid DAPT regimen (involving a switch of prasugrel to clopidogrel at 1 month post MI) in STEMI patients and report on the clinical outcomes.

Methods: From January to August 2012, 141 STEMI patients (94% male, mean age 54 ± 9.2 years) were preloaded with 60 mg of prasugrel and 300 mg of aspirin in the emergency room of our institution prior to PCI. Patients aged > 75 years, body weight < 60 Kg and those with previous history of stroke were excluded. On hospital day one, patients received maintenance doses of 10 mg of prasugrel and 100 mg of aspirin for the first 30 days. At 30 days post MI, prasugrel was stopped and patients were loaded with 300 mg of clopidogrel followed by 75 mg as maintenance dose (for the remaining 11 months in conjunction with aspirin). The primary endpoint end point was a composite of death from cardiovascular causes, nonfatal MI, or nonfatal stroke at 1 year follow-up. The key safety end point was Thrombolysis in Myocardial Infarction (TIMI) major bleeding at 1 year follow-up.

Results: PPCI was performed predominantly via the radial approach (86%) with Clexane used as procedural anti-coagulant in 60% of patients (40% received heparin). Glycoprotein Ib/VIIa inhibitors were administered in 82% of patients with the majority (64%) receiving drug eluting stent implantation during PPCI.

The primary end point occurred in 6 patients (4.3%) with 4 events (2.8%) occurring within the first 2 weeks. Death due to nonvascular causes occurred in 3 patients (2.1%). Non-fatal MI occurred in 2 patients (1.4%) with 1 patient (0.7%) developing a non-fatal stroke. Stent thrombosis occurred in 3 patients (2.1%) patients with 1 case of probable stent thrombosis (0.7%) occurring within 30 days of MI.

Blindness events occurred in 10 patients (7%) with TIMI major bleeding episode occurring in 3 patients (2.1%). There was 1 bleeding episode occurring in the setting of coronary artery bypass surgery.

Conclusion: Our preliminary experience showed that a hybrid DAPT regimen in a selected group of STEMI patients is feasible, efficacious and safe. The long term clinical outcomes were good with a low incidence of ischaemic and bleeding events.

TCTAP A-031
Platelet Function Test and Bleeding Risk in Patients with Coronary Artery Disease: A Case-control Study
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Background: Management of coronary heart disease remains a challenge even with modern advances. New anti-platelet agents which reduce thromboembolic events in patients with coronary heart disease were introduced. However, there are concerns about an increased in bleeding risk for patients taking these new anti-platelet agents. Platelet function test, such as VerifyNow, claimed to be able to predict bleeding risk. However, the evidence was limited, especially among the Asian population. This study aimed to evaluate the use of VerifyNow to assess bleeding risk. Subjects with low residual platelet reactivity, i.e. low PRU value, were hypothesized to have an increased bleeding risk.

Methods: This was a case control study performed in the Princess Margaret Hospital of Hong Kong. A total of 120 subjects who were taking a P2Y12 inhibitor and had a VerifyNow test were recruited. The cases were defined as subjects with a PRU value of less than 60. The control group was defined to be patients with normal PRU value. The controls were age matched to the cases. The primary outcome was the increase in bleeding risk associated with a low PRU value at 30 days. The secondary outcome was the increase in bleeding risk associated with a low PRU value at 1 year. The usual threshold percentage of platelet inhibition was also evaluated as a secondary outcome.

Results: Bleeding events occurred more frequently in the low PRU group. At 30 days, 31.7% of subjects among the case had a bleeding event while 43.3% of the cases had a bleeding event at 1 year. The majority of these bleeding events were minor bleeding, such as easy bruising. After adjusting for confounders, there was no statistically significant increase in bleeding risk among those in the low PRU group at 30 days or 1 year. Subjects with a high percentage of platelet inhibition (>50%) was also not associated with a statistically significant increase in bleeding risk.

Conclusion: A low PRU value was not associated with an increased bleeding risk at 30 days. Thus the VerifyNow test was not shown to be useful in assessing the bleeding risk of patients in an Asian population, contrary to the findings from Western literature. A possible explanation was that the VerifyNow threshold for predicting bleeding might be higher among an Asian population. The definition for low residual platelet reactivity might be different in our locality. A larger sample size might also be needed. Further studies are needed to evaluate whether a different cut off is more optimal for the Asian population.

TCTAP A-032
Comparison of Platelet Reactivity and Clinical Outcomes in Patients Treated with Clopidogrel and Coronary Intervention
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Background: Platelets are associated with vascular occlusive event. High on-clopidogrel platelet reactivity (HPR) is associated with recurrent thrombotic events after percutaneous coronary intervention (PCI). We evaluated platelet reactivity measured by the VerifyNow P2Y12 assay and clinical outcomes in patients receiving clopidogrel and PCI of real world practice.

Methods: We recruited A total of 878 consecutive clopidogrel-treated patients undergoing emergent or elective PCI. The main outcome measures were cardiovascular (CV) death, definite/probable stent thrombosis (ST), nonfatal myocardial infarction (MI), coronary revascularization and a composite end point of ischemic events. We assessed Plateletactivity 12 hours later by measuring P2Y12 reactivity unit (PRU) with VerifyNow P2Y12 assay (Accumetrics, San Diego, California). High platelet reactivity (HPR) was defined as PRU value ≥ 246. We also reported different therapeutic level for East Asians (35% vs. 20 μM ADP-PR < 70%). We re-appraised the pharmacodynamic effect of adjunctive cilostazol and high-dose clopidogrel in East Asians based on this criteria.

Results: With respect to the primary outcome measures, the incidence of CV death, nonfatal MI, and coronary revascularization (7.1%). The composite event rate of patients with HPR (PRU ≥ 240) was significantly higher (7.5% vs 4.3% (p = 0.047)) than the patient with normal value. In survival analysis, there was no significant difference between patient with HPR (PRU > 240) and normal reactivity. But between patient with HPR (PRU > 280) and normal reactivity, the survival rate free from the primary end point was significantly lower in patients with HPR (p = 0.014, Generalized Wilcoxon test).

Conclusion: High on-clopidogrel platelet reactivity tested by VerifyNow predict coronary adverse event in patients after PCI. In Korean, we seem to have to raise the optimal cutoff value of PRU to predict future coronary event.

TCTAP A-033
Reappraisal of Pharmacodynamic Effect of Adjunctive Cilostazol and High-dose Clopidogrel in East Asian ACS Patients
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Background: Compared with Westerners, East Asians have shown different thera- peutic level of platelet reactivity (HPR) regarding PCI ischemic and bleeding events. We also reported different therapeutic level for East Asians (35% < 20 μM ADP-PR < 70%). We re-appraised the pharmacodynamic effect of adjunctive cilostazol and high-dose clopidogrel in East Asians based on this criteria.

Methods: PCI-treated ACS patients were assigned to either clopidogrel 150 mg/d (DOUBLE; n=139) or cilostazol 100 mg bid + clopidogrel 75 mg/d (TRIPLE; n=136) on aspirin. PR was measured at less 30-day follow-up with light transmittance aggregometry. Primary endpoint was the prevalence of HPR at follow-up.

Results: DOUBLE and TRIPLE together showed low prevalences of HPR (9.4% and 2.2%, respectively). Although the level of PR in TRIPLE increased according to the number of CYP2C19 loss-of-function (LoF) allele (p=0.015), HPR risk was almost overcome irrespective of CYP2C19 phenotype (p=0.633). The level of PR and HPR risk in DOUBLE increased proportionally depending on CYP2C19 phenotype (p<0.001 and p=0.006, respectively). In multivariate analysis, carriage of 2 CYP2C19 LoF alleles only increased HPR risk by 8.5-fold in DOUBLE.

Conclusion: Our results support clinical usefulness of TRIPLE in East Asians based on pharmacodynamic data. Clinical efficacy and safety of more potent P2Y12 in-hibitor, prasugrel and ticagrelor, must be reevaluated separately in this unique race.
CYP2C19*2, *3 carriers with cardiovascular diseases and ready to receive PCT are suggested to pay more attention to stent thrombosis when using clopidogrel. However, there are differences in cardiovascular and bleeding events between different metabolizer of clopidogrel with different CYP2C19*2, *3 Genotype. We surpassed that there are statistically significant differences in cardiovascular and bleeding events between different metabolizer type groups. However, because the number of cases were not large, so it was early to make up conclusions that it is not to change the daily dose of clopidogrel and aspirin. The cardiovascular endpoints stent thrombosis and bleeding events rates were statisticted by SPSS 16.0.

**Conclusion:**
We surpassed that there are differences in cardiovascular and bleeding events between different metabolizer type groups. We surpassed that there are statistically significant differences in cardiovascular and bleeding events between different metabolizer type groups. However, because the number of cases were not large, so it was early to make up conclusions that it is not to change the daily dose of clopidogrel determined by CYP2C19 gene Genotype. And it need more research.

**TCTAP A-035**

**Aspirin Versus Clopidogrel Following Dual Antiplatelet Therapy on the Era of Drug-eluting Stents**

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**Background:** Dual antiplatelet therapy (DAPT) for at least 12 months is currently recommended in all patients with drug-eluting stent (DES) implantation. However, there are few studies compared between aspirin monotherapy versus clopidogrel monotherapy after DAPT in patients implanted with DES. We sought to compare the efficacy and safety of clopidogrel versus aspirin following 12-month of DAPT in patients undergoing percutaneous coronary intervention (PCI) with DES.

**Methods:** An observational study was conducted on consecutive patients receiving DES at Samsung Medical Center in Korea between January 2003 and December 2010. Landmark analyses were performed among patients who were event-free (no death, myocardial infarction [MI], revascularization, or cerebrovascular accident [CVA]) at 12-month follow-up. At this point, patients were divided into two groups: aspirin (n = 2,477, 76%) versus clopidogrel (n = 784, 24%). Primary outcome was a composite of cardiac death, MI, or CVA during follow-up. We used weighted Cox proportional hazards models using inverse-probability-of-treatment weighting.

**Results:** Clinical, angiographic and procedural characteristics revealed more comorbidities and more complex lesions in clopidogrel group compared with aspirin group. During median follow-up of 59 months, 166 primary composite events were occurred. In multivariate analysis, clopidogrel was associated with a risk reduction in a composite of cardiac death, MI, or CVA (p = 0.006). A tendency of risk reduction was also seen in each of cardiac death, MI, and CVA.

**Conclusion:** Following 12-month of DAPT, clopidogrel monotherapy may be associated with a risk reduction of recurrent ischemic events compared with aspirin in patients undergoing PCI with DES.

**TCTAP A-036**

**Dyspnoea - Is It a Serious Issue with Ticagrelor?**

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**Background:** Studies that compared the reversible P2Y12 inhibitor ticagrelor with the irreversible inhibitor clopidogrel, dyspnea was observed more frequently with ticagrelor versus clopidogrel-treated patients (13.8% vs. 7.8%). Out of patients presenting with dyspnea it was stopped in only less than 1%. How serious is it? How do the Indian patients respond to it?

**Methods:** All the patients who presented in emergency room with diagnosis of Acute Coronary Syndrome (ACS) and started on ticagrelor along with aspirin as dual antiplatelet therapy were analysed and prospectively followed for the period of 6 months.

**Results:** In our experience since October 2012, 166 Acute Coronary Syndrome (ACS) patients with the mean age of 62±8 years were started on ticagrelor along with aspirin as dual antiplatelet therapy. Of these 72% were male, 35% had hypertension, 42% were diabetic, 30% had dyslipidemia and 20% had history of smoking while none of the patient had bronchial asthma or chronic obstructive airway disease. These patients were followed up at one week, one month and 6 months. Of 166 patients 31 patients had complaints of dyspnea 95% of times at one week of follow up. Of all patients complaining of dyspnea five presented to the emergency department and were extensively evaluated to rule out other differentials. Out of 31 patients with dyspnea 20 i.e. 12% of total and 64.5% of patients with dyspnea ticagrelor had to be stopped, following which patients improved. In the remaining 11 patients dyspnea improved with time and no patient was discontinued ticagrelor after one month of follow up due to dyspnea.

**Conclusion:** Ticagrelor-related dyspnea is more frequent and more severe in intensity in Indian population as compared to the population reported in PLATO study. It is the main reason for the discontinuation of ticagrelor in patients of ACS in whom it was started as a dual antiplatelet regimen.