

generation DES with long term outcomes. Our objective is to compare the efficacy and safety of the XIENCE V® EES and the MULTI-LINK VISION® cobalt chromium stent (CCS) which has same platform in the setting of primary intervention for STEMI patients.

Methods: Consecutive 338 patients with STEMI, who were treated with EES (162 patients) and CCS (176 patients). Within ten months angiographic follow-up results and 2-year clinical follow-up outcomes were compared between 2 groups.

Results: The prevalence of diabetes and Chronic kidney disease were higher, the stent length was longer (24.1 ± 9.5 vs. 18.2 ± 8.3 , $p < 0.05$), and late loss was smaller in EES than in CCS group (0.25 ± 0.24 vs. 0.55 ± 0.33). However, the initial success rate was similar between two groups. Follow-up data for 2-year, % binary restenosis (2.0 vs. 10.9%, $p < 0.05$), TLR (2.0% vs. 9.7%, $p < 0.05$), MI (0.7% vs. 4.8%, $p < 0.05$) and stent thrombosis (0.7% vs. 4.2%, $p < 0.05$) were significantly higher in CCS than in EES group.

Conclusion: EES implantation in patients with STEMI cases inhibited 2-year MACE including TLR, MI and ST without increasing mortality compared with CCS implantation.

TCTAP A-010

A Prospective, Observational, Multicenter Study Comparing Tenecteplase Facilitated PCI Versus Primary PCI in Indian Patients with STEMI (STEPP – AMI)

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Background: Primary PCI in STEMI is the preferred treatment, but not a feasible option for many and pharmacoinvasive therapy might be a practical solution in the Indian context. The objective of this study is to assess the efficacy of pharmacoinvasive strategy in STEMI patients versus primary PCI.

Methods: This is an observational, multicenter study that prospectively enrolled 200 patients with STEMI. Patients who were fibrinolyzed (n=45) formed arm 'A' and underwent CAG within 3-24 hours with coronary intervention as appropriate. Arm 'B' consisted of patients who opted for primary PCI (n=155). Primary endpoint was composite of death, cardiogenic shock, reinfarction, repeat revascularization or congestive heart failure up to 1 year.

Results: The IRA patency at angiogram was 82.2% in arm A and 22.6% in arm B ($p < 0.001$). PCI was performed in 73.3% Vs 100% ($p < 0.001$), thrombus was present in 26.7% Vs 63.2% ($p < 0.001$) in arms A & B respectively. Significantly more number of patients in arm A had TIMI 3 flow in the culprit vessel at angiogram than arm B, 27.9% Vs 4.5% ($p < 0.001$). Failed fibrinolysis occurred in 12.1%. Total ischemic time was 245 minutes (185-395) for arm A and 260 minutes (185-390) for arm B. There was no difference in bleeding risk. Primary endpoint occurred in 13.3% in arm A and in 9% in arm B, $p = 0.40$, (RR 0.64; 95% CI 0.24- 1.79).

Conclusion: Pharmacoinvasive strategy resulted in comparable outcomes as primary PCI at 1 year. Larger RCTs are required to confirm these findings.

TCTAP A-011

Prognostic Importance of Killip Classification in Modern Pharmacoinvasive Treatment Era for the Patients with Acute Myocardial Infarction (Report from Mie ACS Registry)

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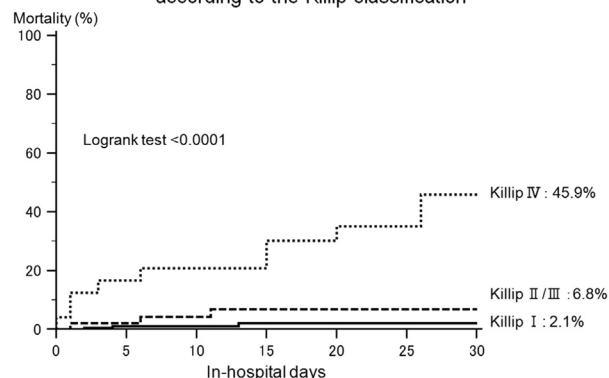
Background: During the last decades, as the treatment for acute myocardial infarction (AMI) has been improved, in-hospital mortality of AMI has been decreased. Accordingly, the purpose of this study was to ensure and reassess the importance of Killip classification in modern pharmacoinvasive treatment era compared with other common prognostic variables.

Methods: From January 2013 to July 2013, we analyzed information from 250 patients with AMI in Mie CCU registry data. Mie CCU network was established for the early pre-hospital care of patients with AMI and consecutive AMI patients was registered at Mie CCU registry data. They were categorized to Killip 1, 2/3 (heart failure) and 4 (shock status). Multivariate cox proportional hazard models were developed to determine the prognostic importance of killip classification in comparison with other variables. Primary end point of this study is defined as all cause in-hospital mortality.

Results: Overall in-hospital mortality was 11.4%. Higher Killip classification was associated with higher in-hospital mortality (2.1% in Killip 1, 6.8% in 2/3, 45.9% in 4; $P < 0.0001$, See figure). According to the multivariate analysis, Killip classification, serum-creatinine and postprocedural TIMI flow were independent predictor for in-hospital mortality. In addition, Killip classification is the strongest independent predictor with hazard ratio of 7.3 compared to other factors.

Conclusion: Killip classification is still powerful independent predictor for in-hospital mortality. In comparison with the studies for the last several decades, in-hospital mortality in patients with Killip 1 and 2/3 at modern treatment era was lower.

Kaplan-Meier curve for in-hospital 30 days mortality according to the Killip classification



TCTAP A-012

The Protective Effect of Aspiration Thrombectomy on Side Branch Compromise and Twelve Months Clinical Outcomes in AMI with Bifurcation Lesion Undergoing Primary PCI

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Background: Bifurcation lesions (BF) remains a challenging lesion subset, often associated with lower success rates. Side branch (SB) compromise in bifurcation lesion is a major determinant of lower procedural success rates and adverse outcomes. Aspiration thrombectomy (AT) prevent distal embolization in acute myocardial infarction (AMI). The aim of this study is to evaluate the protective effect of AT on SB compromise in BF lesions and twelve months clinical outcomes in AMI patients undergoing primary percutaneous coronary intervention (PCI).

Methods: A total of 201 AMI patients with bifurcation lesion undergoing PCI were analyzed between 2007 and 2011. The patients were divided into two groups according to use of AT (AT group: n=74, non AT group: n=127).

We compared Thrombolysis In Myocardial Infarction (TIMI) of main and side branch and 12 months clinical outcomes including mortality, reinfarction, target lesion revascularization (TLR), and major adverse cardiac event (MACE) including mortality, reinfarction, and TLR.

Results: Baseline clinical characteristics were similar between two groups. Angiographic characteristics showed that LAD lesion was higher in non AT group (39.2% vs 54.8%, $p = 0.04$) and RCA lesion was higher in AT group (45.9% vs 31.7%, $p = 0.050$). Visible thrombus (94.6% vs 65.3%, $p < 0.001$) and the use of GP IIb/IIIa inhibitor (43.2% vs 27.6%, $p = 0.030$) was higher in AT group. PreTIMI was similar between two groups. However, post TIMI 3 flow was higher in AT group (94.4% vs 80.2%, $p = 0.033$). However, there were no difference of 12 months clinical outcomes including mortality (5.4% vs 9.1%, $p = 0.708$), reinfarction (1.2% vs 1.1%, $p = 0.324$), TLR (0.0% vs 3.0%, $P = 0.535$), and MACE (13.5% vs 28.8%, $p = 0.093$). Kaplan-Meier curve showed that the cumulative incidence of MACE was similar between two groups (Log rank=0.196)

Conclusion: In the present study, AT is related to post TIMI 3 flow in AMI patients with BF lesion undergoing primary PCI. However, cumulative incidence of MACE was similar between two groups.

TCTAP A-013

Prognostic Impact of Bundle Branch Block in Diabetic Patients with Acute Myocardial Infarction

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Background: The presence of bundle branch block (BBB) has been associated with poor clinical outcome in patients with acute myocardial infarction (MI). BBB, particularly left BBB, in diabetes mellitus (DM) may signify advanced cardiovascular

disease and worse left ventricular dysfunction. Prognostic implications of BBB in diabetic patients with acute MI have yet to be clarified.

Methods: We analyzed 23,724 patients with acute MI from the Korea Acute Myocardial Infarction Registry and the Korea Working Group on Myocardial Infarction Registry. Twelve-month clinical outcome was compared between patients with BBB and those without BBB according to the presence of DM.

Results: Patients with left BBB (n = 181) were older, more likely to be men, have hypertension, DM, multi-vessel disease, left ventricular dysfunction, less likely to have chest pain at presentation and receive percutaneous coronary intervention (PCI) (67% vs. 86%) and beta blockers. In-hospital mortality was not different between patients with left BBB and those without left BBB (0.6% vs. 0.5%). However, all-cause mortality and the rate of major adverse cardiac events (MACE: all-cause mortality, MI, and repeat revascularization) were higher in patients with left BBB at 1 month (6.6% vs. 1.8%, p < 0.001 and 11.6% vs. 5.9%, p = 0.001) and 12 months (11.6% vs. 3.7%, p < 0.001 and 27.6% vs. 19.3%, p = 0.005), respectively. Patients with right BBB (n = 494) were older, more likely to be men, have prior stroke, less likely to have chest pain at presentation and PCI (81% vs. 86%). In-hospital mortality was not different between patients with right BBB and those without right BBB (0.4% vs. 0.5%). All-cause mortality and MACE were similar at 1 month (2.2% vs. 1.8% and 6.5% vs. 5.9%), but higher in patients with right BBB at 12 months (6.3% vs. 3.7%, p = 0.003) and (22.7% vs. 19.3%, p = 0.035). Diabetics with left BBB, compared to diabetics without left BBB, had higher prevalence of multi-vessel disease (80% vs. 65%, p = 0.024), which was similar in non-diabetics regardless of the presence of left BBB. On multivariate analysis, left BBB was associated with 12-month all-cause mortality in diabetics (hazard ratio: 2.6; 95% confidence interval: 1.25 to 5.25; p = 0.010), but not in non-diabetics, while right BBB was not an independent predictor of death regardless of diabetic status.

Conclusion: In patients with acute MI, BBB was associated with worse 12-month clinical outcome. Particularly in diabetics, left BBB was associated with more extensive coronary artery disease and higher mortality.

TCTAP A-014

Correlation Between the Age of Thrombus and Short Term Clinical Outcomes in Patients Undergoing Primary Percutaneous Coronary Intervention

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Background: There is some data that plaque instability precedes the onset of symptoms in acute myocardial infarction. But it is not known whether the age of thrombus has any relation to short term clinical outcomes in patients treated with thrombus aspiration during primary percutaneous coronary intervention (PPCI).

Methods: Consecutive patients of ST elevation myocardial infarction (STEMI) undergoing PPCI with thrombus aspiration were included in the present study. After passing the wire in the culprit artery, thrombus aspiration was done with a suction catheter and the material was sent to histopathology lab in 10% formalin. It was processed and the microscopic sections were categorised into old and fresh thrombus, according to the existing guidelines. 30 day major adverse cardiac events (MACE) defined as a composite of death, myocardial infarction (MI) and revascularisation was correlated with age of the thrombus, after adjusting for confounding factors.

Results: Baseline characteristics like age, sex, presence of risk factors and background statin therapy were similar between the two groups. Of the total number of 79 patients who presented within 6 hours of symptom onset, the aspirated material was insufficient in 7 patients. Out of the remaining 72 thrombi aspirated 40 (55.6%) showed lytic changes and were classified as old. The rest 32 (44.4%) thrombi belonged to the fresh category with intact leukocytes and fibrin. There was no MACE at 30 days in either of the categories.

Conclusion: In patients of STEMI undergoing PPCI short term clinical outcomes are excellent irrespective of the age of the thrombus. However this study needs further evaluation in a larger population with long term follow up.

TCTAP A-015

Required Multiple Aspiration Is the Sign of High Risk of Distal Embolization in Acute Myocardial Infarction

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Background: Slow-flow/no re-flow phenomenon is mainly induced by distal embolization of thrombus and necrotic core during PCI of AMI, and is associated with unfavorable long-term clinical outcomes. Firstly, we perform aspiration thrombectomy for AMI patients, but we will sometimes experience slow flow or no re-flow phenomenon during coronary intervention. However, the high risk patients of distal embolization are not well understood. Various imaging modalities have failed to detect high risk patients of distal embolization for whom distal protection might be beneficial. We examined if the patients who require multiple aspiration to achieve TIMI III flow are high risk of patients of distal embolization.

Methods: Consecutive patients with AMI (n=135) who received PCI with filter-type distal protection device (Filtertrap) were prospectively included. We classified them into two groups by numbers of aspirations required to achieve TIMI III coronary flow: single aspiration (Group A, n=92) and multiple aspiration (Group

B, n=43). We compared between the groups the frequency of filter slow flow or no re-flow phenomenon and of distal embolization captured by filter device. Distal embolization was evaluated by the pathological examination of collected material in the filter device.

Results: Although the distal embolization of thrombus was not deferent between the groups (100% vs. 96%, P=0.16), that of plaque debris was more frequent in Group B than in Group A (95% vs. 18%, P<0.0001). Filter slow flow/ no-reflow phenomenon also occurred more frequently in Group B than in Group A (95% vs. 18%, P<0.0001).

Conclusion: Requirement of multiple aspirations to achieve TIMI III coronary flow was associated with high frequency of distal embolization and of filter slow flow/ no-reflow.

TCTAP A-016

The Impact of First- Versus Second-generation Drug-eluting Stent on 1-year Outcomes in Patients with ST-segment Elevation Myocardial Infarction Undergoing Primary Coronary Intervention

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Background: The aim of the study was to compare the efficacy and safety of second-generation drug-eluting stent (DES) with first-generation DES in primary percutaneous coronary intervention (PCI) for ST-segment elevation myocardial infarction (STEMI).

Methods: A total of 1022 patients with STEMI undergoing primary PCI were enrolled from the Korean Multicenter Endeavor (KOMER) trial (Cypher, n=201; Taxus, n=204; Endeavor-Sprint, n=204), the Gil PCI registry (XienceV, n=85; Endeavor-Resolute, n=76), and the Korean Nobori registry (Nobori, n=252). We excluded the patients who had been cardiogenic shock at admission, received thrombolytic therapy or had no follow-up data at 1 year. Major adverse cardiac event (MACE), defined as the composite of cardiac death, recurrent myocardial infarction (MI), or target lesion revascularization at 1 year, were compared in patients treated with the first-generation DES (Cypher, Taxus and Endeavor-Sprint; n=609) versus second-generation DES (Xience V, Endeavor-Resolute and Nobori; n=413).

Results: Baseline characteristics were similar between patients treated with the first- and the second-generation DES except history of MI which was more prevalent in the second-generation DES group than in the first-generation DES group (6.1% vs. 2.0%, p=0.001). The cumulative incidence of MACE rate was 6.4% for the first-generation DES group and 1.2% for the second-generation DES group at 1-year follow-up (p<0.001, Figure). One-year recurrent MI and TLR rate were significantly lower in the second-generation DES group than those in the first-generation DES (0.2% vs. 2.0%, p=0.016; 0.2% vs. 2.8%, p=0.002, respectively). However, cardiac death rate was not significantly different in the both group (0.7% vs. 1.6%, p=0.261). There was a trend towards a lower rate of stent thrombosis (definite or probable) in patients treated with the second-generation DES compared to the first-generation DES (1.6% vs. 0.2%, p=0.058).

Conclusion: As compared with the first-generation DES, the use of the second-generation DES in patients with STEMI undergoing PCI showed lower rates of MACE, recurrent MI and TLR at 1 year. There was a trend towards a lower rate of stent thrombosis with the second-generation DES compared to the first-generation DES.

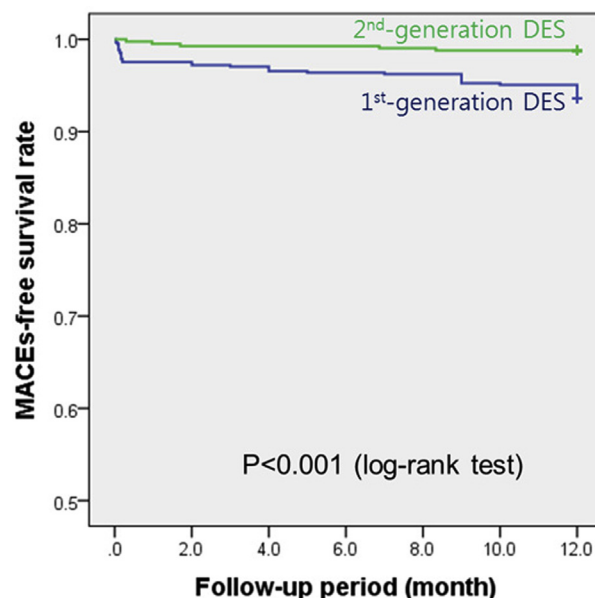


Figure 1. MACEs-free survival curves between the patients treated with the first- and second-generation DES.