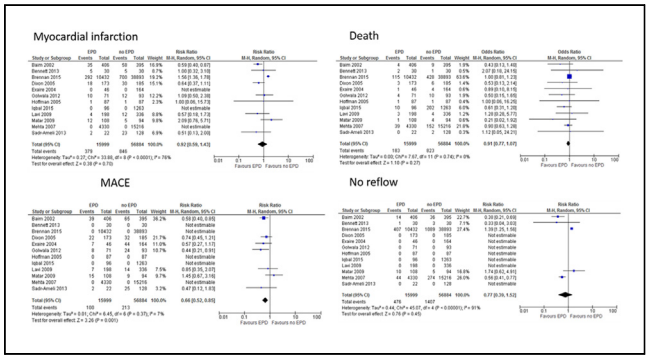
total MACE secondary to a lower rate of target lesion revascularization.



CRT-200.51

Safety and Efficacy of Manual Aspiration Thrombectomy Combined With Transradial Coronary Intervention in the Patients With ST Segment Elevation Myocardial Infarction

Yukio Mizuguchi, Akihiko Takahashi, Sho Hashimoto, Takeshi Yamada, Norimasa Taniguchi, Shunsuke Nakajima, Tetsuya Hata
Sakurakai Takahashi Hospital, Kobe, Japan

BACKGROUND Although removal of the thrombus by manual aspiration thrombectomy (AT) before stent deployment maybe have the potential of reducing distal embolization and improving microvascular perfusion in the patient with ST segment elevation myocardial infarction (STEMI), some recent trials suggested that thrombectomy might increase the risk of stroke. Current ESC guidelines for the management of STEMI recommend transradial coronary intervention (TRI). However, safety and efficacy of the combination of thrombus aspiration and TRI in STEMI are unclear. In this study, we sought to evaluate whether the safety and efficacy of AT combined with TRI is similarly observed in the STEMI patients treated by transfemoral coronary intervention (TFI).

METHODS We retrospectively evaluated the clinical outcomes of 384 STEMI patients underwent percutaneous coronary intervention in our institute between January 2008 and December 2014. For patients other than those undergoing hemodialysis for chronic renal failure and poor radial pulsation owing to a previous TRI procedure or cardiopulmonary arrest, we chose the right radial artery as the primary approach site. TRI was performed in 367 patients (95.6%) and TFI was performed in 17 patients (4.5%) in this study population. We retrospectively evaluated the clinical outcomes of these patients, in terms of clinical indices including door-to-balloon time, procedural success rate, major adverse cardiovascular events including 30-days mortality rate and stroke.

RESULTS Of the patients treated during the study period, manual AT was performed in 363 (94.5%) and 17 (100%) STEMI patients treated by TRI and TFI, respectively. The procedural success rate were similar between the 2 groups; 98.6 % in TRI with AT group and 100% in TFI with AT group. The door-to-balloon time and the peak creatinine kinase levels was similar between the 2 groups (43.1 vs. 50.8 minutes; p=0.15, 2445 vs. 2512 IU/L; p=0.92, respectively). The 30-day mortality rates were significantly higher in TFI with AT group than TRI with AT group (11.8% vs. 2.8%, p<0.05). Within 30 days, acute stent thrombosis and stroke occurred in 1.7% of TRI with AT group and 5.9% of TFI with AT group (p=0.20). No stroke event occurred in both groups.

CONCLUSION Routine manual thrombus aspiration did not increase the incidence of stroke in the setting of acute STEMI. The combination therapy of AT and TRI is equivalently safe and effective to that of AT and TFI for STEMI patients.

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Dynamic Regulation of Aggregate Formation and Stability in Response to Platelet Inhibition Via GP 2b-3a vs. P2Y12

Jayaprakash Kotha,[1] Mason L.A. Dixon,[1] Jay M. Jalenak,[1] Paige S. Dunphy,[1] James E. Tcheng,[2] Jorge F. Saucedo,[3] Lisa K. Jennings[4]
[1]CirQuest Labs, Memphis, TN; [2]Duke University Health System, Durham, NC; [3]Northshore University Health System, Chicago, IL; [4]CirQuest Labs and University of TN Health Science Center, Memphis, TN

BACKGROUND Platelet-mediated thrombus formation is influenced by local hemodynamic events and numerous spatial and temporal events that rely on mediators of platelet reactivity. Two classes of anti-platelet agents, the P2Y12 and the GPIIb-IIIa antagonists, play a significant role in reducing platelet activation and aggregation. The purpose of this study was to evaluate how each class of platelet antagonists contribute to reducing platelet reactivity and thrombus burden, particularly as it pertains to the setting of percutaneous coronary intervention (PCI).

METHODS *In vitro* platelet aggregometry studies were performed to assess the capability of a parenteral P2Y12 antagonist, AR-C69931MX (cangrelor, Kengreal®) versus a GPIIb-IIIa antagonist, tirofiban (Aggrastat®), to inhibit platelet aggregation as well as disengage pre-formed aggregates (n=5). Primary platelet agonists collagen (2 μg/mL) and TRAP (25 μM) and secondary agonist ADP (20 μM) were used to evaluate platelet aggregation inhibition. Antagonist concentrations reflect levels similar to that achieved when administered therapeutically. Collagen (2 μg/mL) was used as agonist for evaluating the effects of these agents in disengaging pre-formed platelet aggregates. Platelet aggregates after antagonist treatment were examined by microscopy to evaluate aggregate size.

RESULTS We demonstrated that tirofiban inhibited platelet aggregation >80% to platelet agonists ADP, collagen, and TRAP, whereas cangrelor inhibited ADP-induced platelet aggregation by >80% but to a lesser degree with the other agonists (~40%). Cangrelor appeared to disrupt the loosely-associated discoid platelets that made up the outer portion of a developing aggregate, but not the stable core. Tirofiban had a greater effect on aggregate destabilization. The total number of larger aggregates upon antagonist treatment were 3.6-fold lower in tirofiban vs. cangrelor treated samples.

CONCLUSION Our data support the administration of a parenteral P2Y12 antagonist to curb thrombus formation *in vivo* primarily by inhibiting platelet activation by secreted ADP. As tirofiban has a wide-ranging effect on platelet aggregate formation and aggregate size, these data suggest that GPIIb-IIIa plays a dynamic, continuous role in the formation and stability of platelet-rich thrombi. Utilization of a GPIIb-IIIa antagonist in the acute setting may provide added protection to not only limit platelet thrombus propagation but also to reduce thrombus burden.

CRT-200.53

Which Reperfusion Therapy Is Better in Patients with ST-Segment Elevation Myocardial Infarction within 3 Hours of the Onset of Symptoms? From Korea Acute Myocardial Infarction Registry (KAMIR)

Sang Yeub Lee, Sang Min Kim, Jang-Whan Bae, Kyung-Kuk Hwang
Chungbuk Regional cardiovascular center, Cheongju-Si, Korea, Republic of

BACKGROUND Previous data showed similar clinical outcome of reperfusion therapy by primary percutaneous coronary intervention (PPCI) versus thrombolysis in Patients with ST-Segment Elevation Myocardial Infarction (STEMI) within 3 hours of the onset of symptoms. But in drug eluting stent(DES) era and current real world practice, we have little data. The aim of the present study was to compare the clinical outcomes of patients with STEMI within 3hours of onset of symptoms according to reperfusion methods.

METHODS Between 2010 and Aug 2014, 5367 patients (4222 male; age=64.2 years) were enrolled a nationwide prospective Korea Acute Myocardial Infarction Registry (KAMIR). Clinical outcome was analyzed according to reperfusion therapy in the field of acute STEMI within 3hours of onset of symptoms.

RESULTS The primary end points were cardiac death and major adverse cardiac events (MACE). A total of 5367 patients (thrombolysis 344, PPCI 5023) were enrolled. Mean follow up period was 732 day. There were no significant differences in baseline characteritics except sex and Killip class. More patients with reperfusion therapy by PPCI had Killip 3 and 4 class than thrombolysis and More male patients were enrolled in thrombolysis group. In the two thirds patients of thrombolysis group, adjunctive or rescue PCI were performed after thrombolysis. In PPCI group, 70.6 % of patients were treated with 2nd generation drug eluting stents. Only 5.6% of the patients in PPCI group were treated with bare metal stents the patients. There were no significant differences in the incidence of death and MACE at 30 days and 12 months. In survival analysis, There were no significant difference during clinical follow-up