

M-107

Usefulness of a Spout for Thrombolytic Agents and Crush revascularization (STAC) Therapy for large thrombi

¹The second Department of Internal Medicine, Tokyo medical University, Tokyo, Japan

Yamashita Jun¹, Tanaka Nobuhiro¹, Shindo Naohisa¹, Kobayashi Hideyuki¹, Teramoto Tomohiko¹

Background: In a treatment of acute myocardial infarction (AMI) with large thrombi, we often experience that effect of thrombus aspiration is not sufficient. In such cases, PIT (pulse infusion thrombolysis) is considered to be effective. But particular devices are necessary, and preparations are complicated. We tried a simpler and easier method for the therapy (STAC therapy). Case: 70 year-old woman who had severe chest pain at rest came to our emergency room. ECG showed ST elevation in II, III, aVF and CPK was elevated to 2,200U/l. Emergency coronary artery angiography (CAG) revealed total occlusion of middle portion in right coronary artery (RCA), in addition, this RCA was very ectatic vessel and filled with a lot of thrombi. We performed aspiration and POBA in this thrombotic lesion, and followed by distal protection by balloon, but sufficient reperfusion could not be obtained. Therefore we treated by anticoagulation. But three days later, re-attack was occurred, then re-emergency CAG was performed. the CAG revealed large thrombi in treatment site. We administered tissue-plasminogen activator (3,200,000IU) by spouting out through Dispatch® catheter using inflation device (by 8-10atm). After this procedure, thrombi reduced remarkably. Conclusions: STAC therapy might be useful for AMI with large thrombi. Tailor made strategy will be needed for thrombi control in patients with AMI

The early invasive approach in STEMI after thrombolysis with streptokinase does not result in adverse outcomes at 6 months follow-up

¹DEPARTMENT OF CARDIOLOGY, INSTITUTE OF CARDIOVASCULAR SCIENCES AT IPGME&R AND SSKM HOSPITAL, KOLKATA, INDIA

SINHA PRASAD DHURJATI¹, SAHA U.K.¹, DAS M.¹, PANJA M.¹

[Purpose] PCI after Thrombolysis for STEMI is controversial. Reports are available for routine PCI after thrombolysis with fibrin specific agents. We report our series of PCI after thrombolysis with streptokinase.

[Methods] We studied 80 consecutive patients with STEMI. 51 patients in (cluster I) received Thrombolysis with I.V. streptokinase. 29 patients in (Cluster I I) didn't. All patients underwent coronary angiogram with plan for complete revascularization between 48 hours to 7 days of onset of symptoms.

[Results] Cluster-I, PTCA with stenting performed in 29 patients (Group I).

Cluster-I I, PTCA with stenting performed in 16 patients (Group I I).

Baseline parameters were comparable in both groups. Only bare metal stents were used. Gp I I b/I I I a blocker was used in all patients. End points of the study were death, MI, or re-interventions for recurrences of symptoms at 6 months. Among Group I, three patients needed re-intervention, one patient had MI and one died. Among Group I I, two patients needed re-intervention, one had MI and no death was recorded. The difference between the two groups was statistically insignificant.

[Conclusion] This study indicates early invasive approach with aim for complete revascularization after AMI and thrombolysis with STK is safe.

Six-month results for PCI with the PercuSurge GuardWire Device in AMI

¹Division of Cardiology, Hamamatu medical center, Hamamatu, Japan

Harada Ken¹, Takanaka Chie¹, Ooya Masahiro¹, Sugiyama Tuyosi¹, Mutou Masahiro¹, Okada Kouji¹, Yamamoto Kazuhiko¹, Sawazaki Kouhei¹

Background : PercuSurge prevents distal embolization and may reduce no-reflow phenomenon, which may contribute to preserve cardiac function and improve event-free survival.

Purpose : Evaluating the efficacy of distal protection using PercuSurge device during primary percutaneous coronary intervention (PCI) for patients with acute myocardial infarction (AMI).

Methods : Between November 2002 and September 2004, a total of 53 patients with AMI underwent stent implantation using PercuSurge. We compared these patients with continuous 54 patients with AMI, from January to November 2002, who were treated with stent implantation by conventional technique, as a control group. We examined in hospital and 6-month clinical outcome and angiographic profile.

Result : The incidence of no-reflow and slow-flow phenomenon was significantly lower for PercuSurge group [3.7% (2/53) vs. 20.3% (11/54) (p=0.018)]. There is no significant difference in max CPK [3146 vs. 2800 (p=0.285)], chronic phase ejection fraction [65.1% vs. 61.29% (p=0.238)], rate of re-stenosis [26.1% vs. 30.3% (p=0.716)], target lesion revascularization [15.1% (8/53) vs. 12.9% (7/54) (p=0.768)] and major cardiovascular events [13.2% (7/53) vs. 24.0% (13/54) (p=0.176)] between two groups. We also estimated δ TIMI frame count that is subtract TIMI frame count of chronic phase from that of acute phase. There is a trend to increase δ TIMI frame count in control group. In PercuSurge group, 3 patients developed localized dissection at the site of occlusion balloon.

Conclusion : It is suggested that using distal protection device reduced no-reflow and slow-flow phenomenon, however, did not show any beneficial effects on chronic phase cardiac function nor on event-free survival.

M-110

Investigation of aspirated material obtained by thrombectomy in PCI

¹okazaki city hospital

miki ken¹, tanaka yoshikazu¹, shinata yoshihisa¹, kataoka hiroki¹, kamiya hiromi¹

Objective: The effectiveness of mechanical reperfusion therapy for acute coronary syndrome (ACS) is well-known. Plaque rupture with subsequent thrombus formation is associated with ACS. Since introduction of aspiration devices such as Rescue, Thrombuster and PercueSurge, aspiration thrombectomy have been often performed during Percutaneous Coronary Intervention (PCI). We investigated pathophysiologic findings of the aspirated materials obtained by intracoronary aspiration thrombectomy during PCI, and compared to the clinical findings. **Methods:** We analyzed 230 consecutive patients with ASC who underwent PCI with aspiration thrombectomy between January 2000 and January 2005 in our hospital. Their aspirated materials, patient characteristics, angiographic findings, hematological profiles and clinical follow-up were investigated. **Results:** Pathological analysis was conducted in 162 of 230 patients. The plaque materials consist of thrombus, cholesterolin and form cell. Thrombus only was identified in 79 patients (Group A), both plaque and thrombus were identified in 83 patients (Group B). At follow-up, there was no difference in LVEF between two groups, the binary restenosis rate was higher in Group A (45%) than in Group B(21%). **Conclusion:** The type of the aspirated materials on pathophysiologic findings may be associated with clinical outcome such as binary restenosis rate.

M-111

Efficacy of coronary angioplasty for the management of acute coronary syndrome in elderly patients: initial and long-term outcomes.

¹Department of Cardiology, Okayama Red Cross General Hospital

Sato Tetsuya¹, Kawamoto Kenji¹, Fuke Soichiro¹, Takagaki Kenji¹, Maekawa Kiyooki¹, Hioka Tohru¹

Background: The benefit of PCI in elderly patients with acute coronary syndrome (ACS) remains controversial. **Objectives:** This study sought to determine the initial and long-term (9 months) outcome of primary PCI in elderly (age 80 or older) patients with ACS. **Methods:** We assessed 174 consecutive patients (114 AMI and 60 UAP) from 2003 August to 2004 July. Patients were divided into 3 groups: elderly underwent PCI (Group E-P, n=22); elderly treated conservatively (Group E-C, n=11); age 79 or younger underwent PCI (Group Y-P, n=80). **Results:** There was no significant difference between Group E-P and Group Y-P as regards to initial success rate (95.5%, 93.8%), major bleeding (9.1%, 5.0%), alimentary tract ulcer (13.6%, 3.8%) and CCU syndrome (27.3%, 8.8%). Group E-P had a lower 9 months mortality (%) (Group E-P vs Group E-C vs Group Y-P: 18.2, 63.7, 3.7, respectively), a lower 9 months cardiac death(%) (13.6, 54.5, 2.5, respectively) and a significant lower 9 months MACE (death, reinfarction, congestive heart failure, recurrent angina) (%) <18.2, 90.9 (p=0.021), 6.2, respectively>. **Conclusion:** PCI had a clinical benefit in elderly patients with ACS.

M-112

Primary transradial PCI in patients with AMI; safety and feasibility.

¹Cardiology department, Handong University Sunlin hospital, Pohang, Korea

Jeong Yong Suk¹, Hyun O Cho¹, Kil Hyun Cho¹, Hyuk Hwan Choi¹, Yong Duk Jung¹, Sung Jin Choi¹, Jae Yean Yu¹, Eun Jung Kim¹

[Purpose] The transradial primary coronary intervention is increasing after the coronary angiography and angioplasty were introduced. We evaluated the safety and feasibility of transradial primary coronary intervention in patients with acute myocardial infarction compared with transfemoral approach. **[Methods]** From September 2003 to December 2004, 95 patients who visited to the emergency room, with chest pain and ST segment elevation in electrocardiography were diagnosed as acute myocardial infarction. Transradial primary coronary intervention was performed in the 47 patients and transfemoral approach in the 48 patients. **[Results]** The success rates of transradial primary intervention was 94%(44/47) compared with 95%(46/48) of transfemoral primary intervention (p=0.677). In transradial group, the time from the arrival of catheterization laboratory to arterial access and to reperfusion, the time from the arrival of emergency room to reperfusion were 9.1 ± 3.6 minutes, 22.0 ± 4.8 minutes, and 62.0 ± 8.5 minutes, respectively and compared with 10.0 ± 3.3 minutes (p=0.079), 21.4 ± 4.7 minutes (p=0.063), 61.0 ± 7.9 (p=0.174) minutes of transfemoral group, respectively. The hospital stay of transradial group was 4.3days and shorter than 7.2days of transfemoral group (p=0.001). The subcutaneous bleeding complication of the puncture site was 4.3% (2/47) of transradial group, comparable to 8.3% (4/48) of transfemoral group (p=0.004). **[Conclusion]** The transradial primary coronary intervention might be safe and feasible without significant time delay compared with transfemoral approach in the patients with acute myocardial infarction. It might be effective to reduce puncture site bleeding complication and to initiate early ambulation, resulting in the shortened hospital stay.

M-113

Acute and long-term results with the FLEXI-CUT (DCA) in AMI

¹Department of Cardiovascular Medicine, National Hospital Organization Nagasaki Medical Center, Ohmura, Japan

Oku Koji¹, Yamanaka Futoshi¹, Uchida Yuzo¹, Tasaki Hirofumi¹, Yoshida kazurou¹, Nakahara Kenichi¹

BACKGROUND: DCA is better device than POBA or Stenting in ostial lesion, bifurcation lesion etc. We compared FLEXI-CUT(DCA) and Stent implantation about the acute and chronic results of AMI. METHODS: All AMI patients were treated by DCA or Stent implantation in acute stage. DCA group(Gp1) included 19 patients, Stent group(Gp2) included 13 patients. RESULTS: The culprit lesion of AMI was all the #6 of LAD in both groups. DCA alone was 67%, DCA Stent was 33% in Gp1. Gp2 was all Stent implantation. 5patients(26%)in Gp1 received the treatment of DCA after using distal protection device(pre-dilatation with PercuSurge Guardwire Plus™). Device success rate was 100% in both groups. RVD was 3.42mm in Gp1, 3.33mm in Gp2 (p>0.05). Post MLD was 3.37mm in Gp1, 3.36mm in Gp2 (p>0.05). Ejection fraction was 43% at the acute stage, 48% at the chronic stage in Gp1 (p>0.05). Ejection fraction was 43% at the acute stage, 53% at the chronic stage in Gp2(p<0.05). SAT was no patient in Gp1 and 1patient in Gp2(8%). Distal embolism was 5 lesions(26%) in Gp1, 1lesion(8%) in Gp2(p>0.05). Slow flow and no-reflow were 4lesions(21%) in Gp1, 2lesions(13%) in Gp2(p>0.05). There were not distal embolism and slow flow(or no-reflow) in the Gp1 that distal protection device was used. TLR rate was 0% after 6months in both groups. CONCLUSIONS: (1)FLEXI-CUT (DCA) was performed safely and was high success rate in selected AMI cases. (2)Using distal protection device(pre-dilatation with PercuSurge Guardwire Plus™) may be effective to prevent distal embolism and slow flow(or no-reflow)of DCA in AMI.

M-114

Examination of initial and long-term result for DCA for AMI

¹Matubaratokushukai Hospital, Oosaka, Japan

Kawajiri Kenji¹, Ishiguro Yuuichirou¹, Yoshimi Takashi¹

(Purpose) To examine the initial and long-term results of DCA for AMI. (Subjects) A total of 32 patients visited our hospital with AMI between November 2002 and June 2004 with CAG and IVUS findings indicating DCA based treatment. (Method) The initial and long-term results of 32 patients treated with DCA were evaluated. (Result) The target lesions were all located in LAD. In 25 patients (78.1%) thrombus aspiration were performed prior to DCA , 17 patients were treated by DCA alone and stents were deployed after DCA in 15 patients (stenting to the DCA site in 7 patients and stenting to the distal site of DCA in 8 patients). Initial success was obtained in all patients. No serious complication was noted. The quantitative coronary angiography revealed RVD: 3.64 ± 0.42 mm, lesion length: 14.95 ± 16.14 mm, MLD: 0.32 ± 0.28 mm, %diameter stenosis: $90.4 \pm 13.51\%$ before the procedure (cases with TIMI 0 were evaluated after thrombus aspiration) and MLD: 3.21 ± 0.51 mm, %diameter stenosis: $17.8 \pm 12.5\%$ after the procedure. The IVUS findings were VA: 9.28 ± 2.51 mm², MLA: 2.89 ± 1.84 mm², %PA: $81.85 \pm 7.82\%$ before the procedure and MLA: 9.99 ± 3.31 mm², %PA: 47.45 ± 9.86 mm² after the procedure. (Conclusion) DCA gives good initial and long-term results for AMI in selected patients

M-115

Acute hyperglycemia after acute myocardial infarction may affect infarct size

¹Department of Cardiology, Yokkaichi Municipal Hospital, Yokkaichi, Japan

Ohashi Taiki¹, inoue yosuke¹, ichimiya hitoshi¹, uchida yasuhiko¹, fukui seiichi¹, sakai shinichi¹, watanabe junji¹, kanashiro masaaki¹, ichimiya satoshi¹

Background: Acute hyperglycemia after acute myocardial infarction is common and is associated with an increased risk of death in subjects with and without diabetes. We assessed whether blood glucose levels at admission affect infarct size in AMI patients without diabetes.

Method: Of consecutive 315 patients who underwent PCI for AMI within 24 hours between Jan. 2001 and Jun. 2004 at our institution, a total of 179 patients with HbA1c fewer than 6.5% were enrolled. They were divided into two groups according to admission blood glucose levels higher or lower than 180 mg/dl.

Results: High group were 49 pts and low group were 130 pts. Two groups had similar characteristics and there were no significant difference regarding onset reperfusion time (4.0vs4.9hours NS) and final TIMI grade (2.76vs2.83 NS). HbA1c levels (5.61vs5.38% $p<0.05$) and peak creatine kinase (4155vs2947mU/ml $p<0.05$) were higher in high glucose levels group. We also analyzed subgroup with final TIMI grade 3 and obtained same result about CPK. But there were no significant difference regarding final frame count (25vs31 NS) and incidence of slow flow phenomenon (16%vs11% NS)

Conclusion: Our findings suggest that acute hyperglycemia is associated with larger infarct size without no-reflow phenomenon.

M-116

Plasma levels of MCP-1 after PCI for predicting restenosis in ACS

¹Department of Internal Medicine and Bioregulation, Nagoya City University Graduate School of Medical Sciences

Fukutomi Tatsuya¹, Takeda Yutaka¹, Sugiura Masato¹, Kondo Hiroaki¹, Ogata Masaki¹, Domori Takemasa¹, Takeda Yasuko¹

Background: Monocyte chemoattractant protein-1 (MCP-1) is one of the chemokine which induce chemotaxis and activation to monocyte, and play a key role to promote atherosclerosis. However, whether MCP-1 become a predictive marker for restenosis after percutaneous coronary intervention (PCI) has not known yet. Methods: Plasma levels of MCP-1 were measured before and after PCI, and 1 week, 1, 6, 12 month after PCI in 30 patients; stable angina (SAP) in 12 patients, acute coronary syndrome (ACS) in 18 patients. Repeated angiograms were performed at 6 month and/or 12 month follow-up. Results: Restenosis occurred in 10 patients. Plasma level of MCP-1 elevated within 1 week and persisted in 6 month after PCI in the restenotic patients. These elevations were remarkable in ACS patients, but not in stable angina patients. In ACS group, the MCP-1 level was significantly greater in patients with than without restenosis at 1 week (309 ± 140 vs. 157 ± 68 pg/ml, $p < 0.05$). The change of MCP-1 between pre PCI and 1 week after PCI correlated with late loss ($p = 0.035$). The use of statin after PCI tended to reduce restenosis and suppress the elevation of plasma MCP-1 level. Conclusions: Plasma level of MCP-1 after PCI might be potentially an early predictive marker for restenosis, especially in ACS.

M-117

Multiple complex coronary plaques and coronary plaque progression in patients with AMI

¹Yokohama City University School of Medicine Cardiovascular Center, Yokohama, Japan

Ozaki Hiroyuki¹, Hibi Kiyoshi¹, Yano Hideto¹, Ebina Toshiaki¹, Sumita Shinichi¹, Kosuge Masami¹, Toda Noritaka¹, Kanna Masahiko¹, Tsukahara Kengo¹, Okuda Jun¹, Nozawa Naoki¹, Nakachi Tatsuya¹, Kusama Ikuyoshi¹, Kimura Kazuo¹, Umemura Satoshi¹

Background: Previous studies have reported that 25% to 40% of the patients with AMI had multiple complex plaques and they had higher incidence of recurrent ischemic event. This finding suggests a pan-coronary process of atherosclerosis. The aim of this study is to clarify whether intermediate plaques in patients with multiple complex plaques progress more rapidly than those in patients with single complex plaque by serial volumetric IVUS analyses and whether complex plaques and intermediate plaques progress similarly in patients with multiple complex plaques by QCA analyses. Methods and results: 53 patients with AMI who underwent IVUS examination at baseline and at 6 months after PCI were enrolled. Lesions were considered complex if they had > 50% stenosis and had morphologic features such as thrombus, ulceration, irregularity, and impaired flow. They were divided to multiple complex plaques groups (group M, n=19) and single complex plaque groups (group S, n=34) by angiography. In IVUS analyses, we analyzed intermediate plaques which had <50 of %DS in QCA and >40% of plaque burden in IVUS. In group M, %DS of non-culprit complex plaques increased significantly during 7-months (43.7 to 48.2%, n=0.03) although that of intermediate plaques did not change (21.0 to 19.6%, p=NS). In IVUS analyses, there was no difference in %change in plaque volume of intermediate plaques between two groups (-2.0% vs -3.9%, p=NS). Conclusion: Despite rapid progression of complex plaques, intermediate plaques in patients with multiple complex plaques remained stable, suggesting that pan-coronary process may not represent activation of whole coronary artery but may affect limited segment.