significant independent predictors of events by logistic multivariable regression model.

**POSTER SESSION**

**1049 ST Elevation Acute Myocardial Infarction**

Sunday, March 30, 2003, 3:00 p.m.-5:00 p.m.
McCormick Place, Hall A
Presentation Hour: 3:00 p.m.-4:00 p.m.

1049-104 Enhanced Oxidant Stress After Reperfusion Is Associated With Persistent ST Elevation Despite Infarct-Related Artery in Acute Myocardial Infarction

**Yusuke Kawano, Hiroshi Ito, Katsuki Asai, Naoyuki Yagishita, Meiji University School of Medicine, Tokyo, Japan**

**Background:** The urinary excretion of 8-isoprostaglandin F2alpha (8-ISO-PGF2alpha), a marker for in vivo oxidant stress, is increased during reperfusion in acute myocardial infarction (AMI). Interestingly, 8-ISO-PGF2alpha is also a vasococontractile, platelet activator, and a regulator of leukocyte-endothelial interaction. The generation of 8-ISO-PGF2alpha from the AMI heart, thereby may contribute to poor microvascular blood flow through neutrophil plugging and vasoconstriction. No resolution of ST segment elevation despite patent epicardial coronary artery may reflect poor microvascular refill. Hence we hypothesized that enhanced oxidant stress after reperfusion is associated with persistent ST elevation despite patent infarct-related artery (IRA).

**Methods:** Twenty-six patients with successfully reperfused AMI by direct angioplasty were studied. Urinary 8-ISO-PGF2alpha excrections were measured in the spot samples before reperfusion, the collection of the first 6 hours after it, and the spot samples in the chronic phase. The degree of enhanced oxidant stress following reperfusion was evaluated with delta urinary 8-ISO-PGF2alpha defined as subtraction of its urinary excretion in the chronic phase from that in the 6 hours. The patients were divided into two groups based on delta urinary 8-ISO-PGF2alpha, i.e., patients with enhanced oxidant stress after reperfusion and patients without it: a cut-off point of delta urinary 8-ISO-PGF2alpha was 239 pg/mg creatinine (median).

**Results:** Incomplete ST resolution (MI/70%) despite patent IRA was more frequently observed in patients with enhanced oxidant stress than those without it (86% vs. 38%; p<0.02). The incidences of pericardial effusion (PE) and congestive heart failure (CHF) were higher in patients with enhanced oxidant stress than those without it (PE 46% vs. 0%, p=0.007; CHF 46% vs. 0%, p=0.007).

**Conclusion:** Enhanced oxidant stress following reperfusion is associated with absence of ST resolution despite patent epicardial coronary artery and in-hospital complications.

1049-107 Impact of Platelet Characteristics on Myocardial Tissue Reperfusion in Acute Myocardial Infarction

Shingo Kawano, Hiroshi Ito, Katsuki Asai, Naoyuki Yagishita, Meiji University School of Medicine, Tokyo, Japan

**Background:** Previous studies have demonstrated that the microvascular embolization of intracoronary thrombus and platelet components reduces the benefit of reperfusion therapy for AMI. However, it is unknown whether the plaque burden of culprit lesion impacts the microvascular embolization and the tissue reperfusion. **Methods:** In 63 consecutive patients (pts) with AMI within 6 hours after symptom onset, we performed IVUS to evaluate the plaque characteristics after thrombectomy with ResoluteTM PT catheter. All of pts underwent the subsequent angioplasty with or without stenting after IVUS assessment. Myocardial tissue reperfusion was assessed based on TIMI perfusion grades (TMPG). **Results:** TIMI-3 flow was observed in 53 pts (64%) after thrombectomy alone and 68 pts (78%) after adjunctive angioplasty. There were 58 pts (78%) with TMPG-3 in final angiography. In a logistic regression model, IRA culprit, n(%) 14(24%) 15(60%) 10.7(1.04-110)

**Poster Session**

**1049-109 Relationship Between Time to Treatment, Electrocardiographic ST-Segment Resolution, and Outcomes With Primary Percutaneous Coronary Intervention for Acute Myocardial Infarction: Results From the CADILLAC Trial**


**Background:** ST-segment resolution (STR) is a measure of microvascular reperfusion in AMI and has been correlated with outcomes. The relationship between time to treatment, STR, and outcomes with primary PCI has not been studied.

**Methods:** The CADILLAC Trial enrolled pts with AMI <12 hrs without shock who were randomized to stent YS PTCA +/- abciximab (n=2,062). Paired ECGs pro and post-PCI, STR was measured at a core ECG lab as the percent resolution of summed ST elevation from pre to post-PCI.

**Results:** STR was classified as complete (≥70%, n=436), partial (30-70%, n=193) or absent (<30%, n=71). STR (≥70% vs 70-30% vs <30%) correlated with one year mortality (4.2% vs 5.2% vs 9.9%, p=0.04) and re-infarction (0.7% vs 3.8% vs 1.5%, p=0.02).

**Time to reperfusion (RT) <3 vs ≥3 hrs) also correlated with 1 yr mortality (2.5% vs 4.5%, p=0.04) and re-infarction (1.4% vs 2.8%, p=0.08). Late reperfusion was associated with a lower frequency of complete STR (47% vs 66%, p=0.002). The relationship between RT, STR, and outcomes are shown in the table.

**Conclusions:** STR and RT are co-dependent but both are important for optimal outcomes with primary PCI. Maximum survival benefit requires both early reperfusion and complete STR. These data stress the importance of reducing time delay and enhancing microvascular reperfusion in pts undergoing PCI for AMI.

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**Table:**

<table>
<thead>
<tr>
<th>STR</th>
<th>n</th>
<th>Time to PCI (h)</th>
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<tbody>
<tr>
<td>Complete</td>
<td>436</td>
<td>&lt;3 vs ≥3 hrs</td>
</tr>
<tr>
<td>Partial</td>
<td>193</td>
<td>&lt;3 vs ≥3 hrs</td>
</tr>
<tr>
<td>Absent</td>
<td>71</td>
<td>&lt;3 vs ≥3 hrs</td>
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**Presentation Hour:** 3:00 p.m.-4:00 p.m.

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**1049-108 Angiographic Assessment of Reperfusion in Acute Myocardial Infarction by Myocardial Blush Grade**

Jose P. Henniger, Felix Zijlstra, Arno van ’t Hof, Menko-Jan de Boer, Jan-Henk E. Dabirnik, Marcel Gosselink, Jan C. Hoornje, Harry Suryapranata, IJsala Klinieken, Locatie Weezenlanden, Zwolle, The Netherlands

**Background:** Angiographic successful reperfusion in acute myocardial infarction has been defined as TIMI 3 flow. However, TIMI 3 flow does not always result in effective myocardial reperfusion. Myocardial Blush Grade (MBG) is an angiographic measure of myocardial perfusion. We hypothesized that optimal angiographic reperfusion is defined by TIMI 3 flow and MBG 2 or 3.

**Methods:** In 924 consecutive patients with TIMI 3 flow after angioplasty for acute myocardial infarction, we prospectively studied the value of MBG. Endpoints were death, MACE, angiographic infarct size and residual left ventricular ejection fraction.

**Results:** Follow up was 16±11 months. Of the 924 patients, 101 (9%) patients had MBG 0 or 1. Mortality was significantly higher in patients with MBG 0 or 1, compared with patients with MBG 2 or 3 (RR 2.79, p=0.01). The combined incidence of MACE was higher in patients MBG 0 or 1, compared to patients with MBG 2 or 3 (RR 1.8, 95%CI 1.1-2.9, p=0.009). Enzymatic infarct size was larger (143±2386 vs. 80±1672, p=0.001) and left ventricular ejection fraction was lower (37±10.8 vs. 43±11.1, p=0.001) in patients with MBG 0 or 1, compared to patients with MBG 2 or 3.

**Conclusions:** MBG is a strong angiographic predictor of mortality in patients with TIMI 3 flow after angioplasty. Enzymatic infarct size is larger and residual left ventricular ejection fraction is lower in patients with MBG 0 or 1, compared with MBG 2 or 3. Angiographic definition of successful reperfusion should include both TIMI 3 flow as well as MBG 2 or 3.

**Presentation Hour:** 3:00 p.m.-4:00 p.m.