

Conclusions: In this large prospective, multicenter randomized trial of contemporary mechanical reperfusion strategies, normal myocardial perfusion was achieved in only 20% of pts, and correlated with short and long-term survival. These data validate the utility of the myocardial blush score as a prognostic index after primary PCI in AMI.

2:30 p.m.

853-3

A New Endpoint to Evaluate the Success of Reperfusion Therapy Following ST-Elevation Myocardial Infarction

Robert P. Giugliano, Marc S. Sabatine, C. Michael Gibson, Matthew T. Roe, Robert A. Harrington, Ghislaine Pisapia, David A. Morrow, Elliott M. Antman, Eugene Braunwald, Brigham & Women's Hospital, Boston, MA, Duke Clinical Research Institute, Durham, NC

Background. TIMI epicardial flow grade (TFG) predicts mortality after fibrinolysis. It is not known whether concurrent assessment of two independent measures of tissue-level reperfusion (TIMI myocardial perfusion - TMPG, ST-segment resolution - STRES) adds to TFG.

Methods. Patients with acute myocardial infarction enrolled in three invasive TIMI trials underwent coronary angiography and assessment of ST segment resolution 60 minutes following fibrinolytic \pm GP IIb/IIIa inhibitor. PCI was performed after 60 minutes at the cardiologist's discretion. Complete restoration of myocardial and epicardial flow was defined as patients who had TFG=3 and TMPG=3 and complete STRES at 60 minutes.

Results. Data for all three measurements were available in 652 patients (mean age 58, 20% women, 14% diabetic). Complete restoration of both myocardial and epicardial flow occurred in 117 patients (18%), and clinical events by 30 days were rare (1 [0.9%] patient with reinfarction, 4 [3.4%] patients with recurrent ischemia requiring urgent revascularization) and significantly lower in this group (Figure).

Conclusions. A combined assessment of epicardial and myocardial reperfusion using TFG, TMPG, and ST-resolution at 60-minutes identifies patients at very low risk for clinical events. We propose this new endpoint to evaluate the success of reperfusion therapy.

Death and MI at 30 Days and 1-Year among patients with TIMI III flow

Summed ST Elevation Resolution	<30 %	30-70 %	>70 %	Total	P value			
	n=65	n=81	n=19	3 groups combined		<30 vs 30-70	<30 vs >70	30-70 vs >70
Any Death (30d)	7.7 % (5)	2.8 % (6)	1.7 % (7)	2.6 % (18)	0.0156	0.1346	0.003	0.2099
Any Death (365d)	9.2 % (7)	5.0 % (9)	4.4 % (18)	5.0 % (34)	0.0788	0.0988	0.025	0.7102
Any MI (30d)	1.6 % (1)	2.3 % (4)	0.2 % (1)	0.9 % (6)	0.0535	0.7751	0.116	0.0148
Any MI (365d)	1.6 % (1)	4.0 % (7)	0.7 % (3)	1.7 % (11)	0.0203	0.3920	0.464	0.0053
Any Death or MI (30d)	9.2 % (6)	5.0 % (9)	1.9 % (8)	3.5 % (23)	0.0043	0.2056	0.000	0.0401
Any Death or MI (365d)	10.8 % (8)	8.3 % (15)	5.1 % (1)	6.5 % (4)	0.0451	0.3254	0.018	0.1165

3:00 p.m.

853-5

Stenting and Platelet Glycoprotein IIb/IIIa Inhibitors Improve Electrocardiographic ST-Segment Resolution After Primary Percutaneous Coronary Angioplasty for Acute Myocardial Infarction

Bruce R. Brodie, Thomas D. Stuckey, Grace Kissling, Charles Hansen, Debra S. VerSteeg, Denise Muncy, Susan Moore, Navin Gupta, Mark Pulsipher, LeBauer Cardiovascular Research Foundation, Greensboro, NC, University North Carolina Greensboro, Greensboro, NC

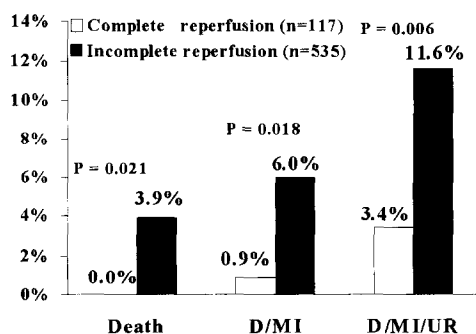
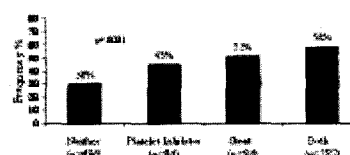
Background: ST-segment resolution (STR) is a measure microvascular reperfusion and has been correlated with outcomes. Platelet GP IIb/IIIa inhibitors (PI) enhance STR with lytic therapy, but the effects of PI and stents on STR after primary PCI are unknown.

Methods: Pts with AMI and ≥ 2 mm ST elevation treated with primary PCI from 1984-2001 (n=834) were stratified into 3 categories of STR based on ST elevation post-PCI: complete (≤ 0.5 mm., n=331), partial (1.0-1.5 mm., n=275), and poor (≥ 2.0 mm., n=228). Clinical follow-up was obtained in 98% of pts at 6.2 yrs.

Results: Complete vs. partial vs. poor STR correlated with peak CK/MB release (173 vs. 200 vs. 221, p=.003), 7 mo ejection fraction (57.9% vs. 54.1% vs. 51.2%, p=0.001), and late cardiac survival (87% vs. 76% vs. 66% at 10 yrs, p=0.002). Complete STR was seen less often in diabetics (28% vs. 42%, p=0.005), non-smokers (36% vs. 44%, p=0.03), anterior MI (18% vs. 55%, p<0.0001), Killip Class III-IV (19% vs. 43%, p<0.0001), TIMI 0-1 flow pre-PCI (36% vs. 51%, p<0.0001), and TIMI 0-2 flow post-PCI (16% vs. 41%, p=0.0004). Complete STR was correlated with PI and stent use: no PI, no stent (30%); PI, no stent (45%); stent, no PI (51%); and stent and PI (58%) (p<0.0001) (Figure). PI and Stenting were independent predictors of complete STR (PI: OR 2.2, 95% CI 1.4-3.4; Stenting: OR 1.9, 95% CI 1.2-3.0).

Conclusion: Stents and PI improve STR after primary PCI and may enhance microvascular reperfusion. These observational results need to be confirmed in randomized trials.

Frequency of Complete ST-Segment Resolution by Stent and Platelet GP IIb/IIIa Inhibitor Use



2:45 p.m.

853-4

ST-Segment Elevation Resolution as a Predictor of Mortality in Patients With Thrombolysis in Myocardial Infarction III Flow in the Infarct Artery After Primary Angioplasty: The CADILLAC Trial

Michael G. McLaughlin, Graham Gardner, Eve D. Aymong, Roxana Mehran, Alexandra J. Lansky, Cindy L. Grines, James E. Tcheng, David A. Cox, Thomas D. Stuckey, Eulogio Garcia, Giulio Guagliumi, Mark Turco, Peter Zimetbaum, Gregg W. Stone, Beth Israel Deaconess Medical Center, Boston, MA, Cardiovascular Research Foundation, New York, NY

Background: ST elevation resolution (STR) in acute myocardial infarction (AMI) has been shown to correlate with both target vessel patency and clinical outcomes (mortality, CHF). More recently, STR has been shown to correlate with measures of microvascular perfusion (myocardial blush), suggesting that STR may further risk-stratify AMI patients with successful reperfusion (TIMI 3 flow).

Methods: ECGs from all patients in the CADILLAC trial were reviewed. Quantitative ST-segment measurements were made on all patients (n=700) with diagnostic ST elevation (≥ 1 mm in 2 contiguous leads), and adequate quality ECGs both pre and post procedure (≤ 4 hrs from balloon inflation). ST elevation was measured with digital calipers, by readers blinded to clinical and angiographic data. For inferior MI, ST elevations were summed across leads II, III, aVF, V5-6, and for anterior MI, across V1-6, I, and aVL. In patients with TIMI 3 flow (n=665), rates of 30 day and 1-year mortality and reinfarction were compared among patients with <30%, 30-70%, and >70% STR.

Results: For patients with TIMI 3 flow, 30 day and 1 year mortality rates were 2.6% and 5.0%, and reinfarction were 0.9% and 1.7%. Among patients with TIMI 0-2 flow, mortality rates were 7.1% at both 30 days and 1-year. Outcomes stratified by STR in patients with TIMI-3 flow are shown below.

Conclusions: Patients with TIMI 3 flow, but without STR have significantly higher 30 day and 1-year mortality rates than those with STR, and these rates are similar to patients with TIMI 0-2 flow.