Am J Cardiol (2004);93:629-32
Predicting mortality in patients with ST-elevation myocardial infarction treated with primary percutaneous coronary intervention (PAMI risk score)
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We performed a pooled analysis of the Primary Angioplasty in Myocardial Infarction (PAMI) trials to examine predictors of death after primary percutaneous coronary intervention. Using these data, we developed a risk score with a range of 0 to 15 points. The PAMI risk score was found to be a strong predictor of late mortality.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14996596

Am J Cardiol (2004);93:1033-5
Comparison of rheolytic thrombectomy before direct infarct artery stenting versus direct stenting alone in patients undergoing percutaneous coronary intervention for acute myocardial infarction
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This randomized trial compared rheolytic thrombectomy before direct infarct artery stenting with direct infarct artery stenting alone in 100 patients with a first acute myocardial infarction (AMI). The primary end point of the study was early ST-segment elevation resolution, and the secondary end points were corrected Thrombolysis In Myocardial Infarction (TIMI) frame count, infarct size, and 1-month clinical outcome. The primary end point rates were 90% in the thrombectomy group and 72% in the placebo group (p = 0.022). Randomization to thrombectomy was independently related to the primary end point (odds ratio 3.56, p = 0.032). The corrected Thrombolysis In Myocaridal Infarctions (TIMI) frame count was lower in the thrombectomy group (18.2 +/- 7.7 vs 22.5 +/- 11.0, p = 0.032), and infarct size was smaller in the thrombectomy group (13.0 +/- 11.6% vs 21.2 +/- 18.0%, p = 0.010). At 1 month, there were no major adverse cardiac events. Rheolytic thrombectomy before routine direct infarct-related artery (IRA) stenting is highly feasible and provides more effective myocardial reperfusion in patients undergoing percutaneous coronary intervention for AMI.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15081450

Am J Cardiol (2005);95:100-1
Comparison of mortality rates in acute myocardial infarction treated by percutaneous coronary intervention versus fibrinolysis
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We studied the relation between angioplasty-related time delay and the effectiveness of the intervention in decreasing death compared with fibrinolysis in patients who had acute myocardial infarction. The absolute survival benefit of angioplasty compared with fibrinolysis decreased by 0.24% for every additional 10-minute delay. Regression analysis showed that percutaneous coronary intervention remained superior to fibrinolysis when a time delay related to percutaneous coronary intervention extended to

110 minutes.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15619401

Circulation (2004);109:1121-6
Impact of microvascular dysfunction on left ventricular remodeling and long-term clinical outcome after primary coronary angioplasty for acute myocardial infarction
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BACKGROUND: We hypothesized that preserved microvascular integrity in the area at risk would favorably influence left ventricular (LV) remodeling and long-term outcome after acute myocardial infarction. METHODS AND RESULTS: Before and after successful primary angioplasty (percutaneous transluminal coronary angioplasty [PTCA]), 124 patients with acute myocardial infarction underwent intracoronary myocardial contrast echo (MCE). An MCE score index (MCESI) was derived by averaging the single-segment score (0=not visible, 1=patchy, 2=homogeneous contrast effect) within the area at risk. An MCESI > or =1 was considered adequate reperfusion. Mean follow-up was 46+/-32 months. After PTCA, 100 patients showed adequate reperfusion (no microvascular dysfunction, NoMD), whereas 24 did not (MD). MD patients had a higher mean creatine kinase (4153+/-2422 versus 2743+/-1774 U/L; P=0.002) and baseline wall-motion score index (2.61+/-0.31 versus 2.25+/-0.42; P<0.001) and a lower baseline ejection fraction (33+/-8% versus 40+/-7%; P<0.001). From day 1 on, LV volumes progressively increased in the MD patients (n=19) and were larger than those of NoMD patients (n=85) at 6 months (end-diastolic volume 170+/-55 versus 115+/-29 mL; P<0.001). MCESI was the most important independent predictor of LV dilation (OR 0.61, 95% CI 0.52 to 0.71, P<0.000001). By Cox analysis, MD represented the only predictor of cardiac death (OR 0.26, 95% CI 0.09 to 0.72, P=0.010) and combined events (cardiac death, reinfarction, and heart failure; OR 0.44, 95% CI 0.23 to 0.85, P=0.014). MD patients showed worse survival in terms of cardiac death (P<0.0001) and combined events (P<0.0001). CONCLUSIONS: In reperfused acute myocardial infarction, MD within the risk area is an important predictor of both LV remodeling and unfavorable long-term outcome.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14967718

J Am Coll Cardiol (2004);44:305-12
Frequency, correlates, and clinical implications of myocardial perfusion after primary angioplasty and stenting, with and without glycoprotein IIb/IIIa inhibition, in acute myocardial infarction
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OBJECTIVES: We sought to determine the prognostic importance of myocardial reperfusion after various contemporary interventional strategies in patients with acute myocardial infarction (AMI). BACKGROUND: The frequency, correlates, and clinical implications of myocardial perfusion after primary angioplasty in AMI have not been

examined in a large-scale prospective study. Similarly, whether glycoprotein (GP) IIb/IIIa inhibitors and/or stents improve myocardial perfusion beyond balloon angioplasty has not been investigated. METHODS: Tissue-level perfusion assessed by the myocardial blush grade was evaluated in 1,301 patients with AMI randomized to balloon angioplasty versus stenting, each with or without abciximab. RESULTS: Despite Thrombolysis In Myocardial Infarction flow grade 3 restoration in 96.1% of patients, myocardial perfusion was normal in only 17.4% of patients, reduced in 33.9%, and absent in 48.7%. Myocardial perfusion status post-coronary intervention stratified patients into three distinct risk categories, with 1-year mortality rates of 1.4% (normal blush), 4.1% (reduced blush), and 6.2% (absent blush) ($p = 0.01$). Among patients randomized to angioplasty, angioplasty + abciximab, stenting, and stenting + abciximab, normal myocardial perfusion was restored in 17.7%, 17.0%, 17.5%, and 17.6%, respectively ($p = 0.95$), which was associated with similar 1-year rates of mortality in patients randomized to stenting versus angioplasty (4.5% vs. 4.8%, $p = 0.91$) and abciximab versus no abciximab (4.3% vs. 5.0%, $p = 0.63$). CONCLUSIONS: Restoration of normal tissue-level perfusion is a powerful determinate of survival after primary PCI in AMI and is achieved in a minority of patients. Neither stents nor GP IIb/IIIa inhibitors significantly enhance myocardial perfusion compared to balloon angioplasty alone, underlying the similar long-term mortality with these different mechanical reperfusion strategies.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15261923

Am J Cardiol (2004);94:983-8
Predictors of and outcomes of early thrombosis following balloon angioplasty versus primary stenting in acute myocardial infarction and usefulness of abciximab (the CADILLAC trial)
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We sought to identify the predictors and clinical outcomes of early thrombosis after primary angioplasty and stenting for acute myocardial infarction (AMI). Little is known about the correlates and prognosis of acute and subacute thromboses after percutaneous coronary intervention (PCI) for AMI. We therefore studied the frequency, clinical determinants, and implications of early thrombosis in a large trial of patients who had primary PCI. In the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications trial, 2,082 patients who had AMI were randomized in a 2 x 2

89.5% required repeat target vessel revascularization (including bypass surgery in 11.1%). As a result, patients who had versus those who did not have early thrombosis had markedly higher rates of major adverse cardiac events at 30 days (94.7% vs 5.0%, p <0.0001) and at 1 year (94.7% vs 16.9%, p <0.0001). Patients who develop early thrombosis after primary PCI have a very high rate of major adverse cardiac events, including death and reinfarction, and usually require repeat coronary angioplasty or surgery for management. Complex baseline angiographic morphology and smaller maximal balloon diameter are predictors of early thrombosis after primary PCI for AMI. The incidence of early thrombosis after primary angioplasty and stenting is decreased by abciximab use.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15476608

Heart (2004);90:1352-7
Should all patients with an acute myocardial infarction be referred for direct PTCA?
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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15486147

J Am Coll Cardiol (2004);43:1363-7
Preprocedural TIMI flow and mortality in patients with acute myocardial infarction treated by primary angioplasty
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OBJECTIVES: The aim of the study was to evaluate the impact of preprocedural Thrombolysis In Myocardial Infarction (TIMI) flow on one-year mortality in patients with ST-segment elevation myocardial infarction (STEMI) treated by primary angioplasty. BACKGROUND: Although there is an excellent outcome conferred by primary angioplasty in patients with STEMI, the prognostic role of early recanalization in these patients has yet to be investigated. METHODS: Our population is composed of 1,791 patients with acute myocardial infarction treated by primary angioplasty at our institution from 1994 to 2001. All angiographic, clinical, and follow-up data were prospectively collected. According to the TIMI risk score, patients were stratified in low- and high-risk groups. RESULTS: Preprocedural TIMI flow was related to postprocedural TIMI flow grade 3 ($p = 0.002$), myocardial blush grade 2 to 3 ($p < 0.001$), enzymatic infarct size ($p < 0.001$), predischarge ejection fraction ($p < 0.001$), and one-year mortality ($p < 0.05$). Multivariate analysis showed that preprocedural TIMI flow grade 3 was an independent predictor of one-year survival in high-risk patients ($p < 0.05$). CONCLUSIONS: This study shows that preprocedural TIMI flow grade 3 is an independent predictor of one-year survival in high-risk patients with acute myocardial infarction treated by primary angioplasty. These data suggest that all efforts should be made to obtain early and optimal restoration of antegrade flow, particularly in high-risk patients and when transportation to tertiary centers, with a conceivable further time delay, is required.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15093868

Circulation (2004);109:2737-43
Prognostic assessment of patients with acute myocardial infarction treated with primary angioplasty: implications for early discharge
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BACKGROUND: The aim of this study was to create a practical score for risk stratification in patients with ST-segment elevation myocardial infarction (STEMI) treated with primary angioplasty and to assess the feasibility of early discharge in low-risk patients. METHODS AND RESULTS: A prognostic score was built according to 30-day mortality rates in 1791 patients undergoing primary angioplasty for STEMI. For the identified low-risk patients without any contraindication to early discharge, we estimated and compared the costs of conventional care (prolonged 24-hour hospitalization) with the costs of shifting the care from inpatient to outpatient setting (early discharge) between 48 and 72 hours. Independent predictors of 30-day mortality included in the score were age, anterior infarction, Killip class, ischemic time, postprocedural Thrombolysis In Myocardial Infarction (TIMI) flow, and multivessel disease. This score was able to identify a large cohort (73.4%) of low-risk (score < or =3) patients, with a good discriminatory capacity (c statistic=0.907). The mortality rate was 0.1% at 2 days and 0.2% between 2 and 10 days in patients with a score < or =3. The incremental cost-effectiveness ratio for late discharge in low-risk patients was estimated at 1949.33. Therefore, this policy would save 1 life per 1097 low-risk patients, at additional costs of 194 933.33, in comparison with an early discharge policy. CONCLUSIONS: This score is a practical and useful index for risk stratification after primary angioplasty for STEMI, with a significant impact on clinical decision-making and the related costs. It reliably identifies a large group of patients at very low risk, who may safely be discharged early after primary angioplasty.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15159293

Circulation (2004);109:958-61
Impaired myocardial perfusion is a major explanation of the poor outcome observed in patients undergoing primary angioplasty for ST-segment-elevation myocardial infarction and signs of heart failure
G. De Luca*, et al.*

complicating STEMI have impaired myocardial perfusion, which accounts for the poor outcome observed in these patients. Further efforts should be aimed at improving myocardial perfusion, beyond epicardial recanalization, to further improve the outcome of these high-risk patients.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14981008

Eur Heart J (2004);25:1009-13
Time-to-treatment significantly affects the extent of ST-segment resolution and myocardial blush in patients with acute myocardial infarction treated by primary angioplasty
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AIMS: The prognostic role of time-to-treatment in primary angioplasty is still a matter of debate. The aim of our study was to evaluate the relationship between time-to-treatment and myocardial perfusion in patients with ST-segment-elevation myocardial infarction (STEMI) treated by primary angioplasty. METHODS AND RESULTS: Our study population consisted of 1072 patients with STEMI treated by primary angioplasty from 1997 to 2001. Myocardial perfusion was evaluated by using ST-segment resolution and myocardial blush grade. Time-to-treatment was defined as the time from symptom-onset to the first balloon inflation. Time-to-treatment was significantly associated with the extent of ST-segment resolution, myocardial blush grade, enzymatic infarct size, and 1-year mortality. After adjustment for baseline confounding factors, time-to-treatment was still associated with impaired ST-segment resolution (adjusted OR [95% CI]=1.01 [1.01-1.02], p<0.001) and myocardial blush (adjusted OR [95% CI]=1.01 [1.01-1.02], p<0.0001). CONCLUSIONS: This study shows that in patients with STEMI treated by primary angioplasty prolonged ischaemic time is associated with impaired myocardial perfusion, larger infarct size, and higher 1-year mortality. Therefore, all efforts should be made to shorten ischaemic time as much as possible to achieve better myocardial perfusion and myocardial salvage in primary angioplasty for STEMI.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15191770

Circulation (2004);110:3527-33
Coronary blood flow assessment after successful angioplasty for acute myocardial infarction predicts the risk of long-term cardiac events

end of follow-up, 3.8+/-1.7 years after AMI, 44 of the 65 surviving patients (67.7%) were free of long-term cardiac events. Univariate analysis showed that the following factors were predictive of an end point combining cardiac death, recurrent MI, and congestive heart failure: hypertension, age > or =65 years, time from onset of chest pain to PTCA > or =6 hours, peak creatine kinase >4000 IU/L, ejection fraction < or =50%, proximal left anterior descending artery occlusion, resting average peak velocity < or =10 cm/s, average systolic peak velocity < or =5 cm/s, a rapid diastolic deceleration time (< or =600 ms), and early retrograde systolic flow. In the final multivariate model, only age > or =65 years (OR, 3.6; 95% CI, 1.1 to 11.8; P=0.03), time to PTCA > or =6 hours (OR, 2.9; 95% CI, 1.0 to 8.3; P=0.04), and a rapid diastolic deceleration time (OR, 5.4; 95% CI, 1.5 to 19.3; P=0.01) were independent predictors. CONCLUSIONS: The CFV pattern appears to be an accurate predictor of long-term cardiac events in patients having undergone successful reopening of the IRA after AMI, identifying a subset of at-risk patients.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15557378

Circulation (2004);110:1598-604
Outcome in elderly patients undergoing primary coronary intervention for acute myocardial infarction: results from the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial
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BACKGROUND: Biological age is a strong determinant of prognosis in patients with acute myocardial infarction (AMI). We sought to examine the impact of age after primary percutaneous coronary intervention in AMI and to determine whether routine coronary stent implantation and/or platelet glycoprotein IIb/IIIa inhibitors improve clinical outcomes in elderly patients after primary angioplasty. METHODS AND RESULTS: In the CADILLAC trial, 2082 patients with AMI were randomized to balloon angioplasty, angioplasty plus abciximab, stenting alone, or stenting plus abciximab. No patient was

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Eur Heart J (2004);25:2125-33
Use of abciximab prior to primary angioplasty in STEMI results in early recanalization of the infarct-related artery and improved myocardial tissue reperfusion - results of the Austrian multi-centre randomized ReoPro-BRIDGING Study
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AIMS: The aim of the ReoPro-BRIDGING Austrian multi-centre study was to investigate the effects of abciximab (ReoPro(R)) on early reperfusion in ST-elevation myocardial infarction prior to or during primary percutaneous coronary angioplasty (pPCI). METHODS AND RESULTS: Fifty-five patients with STEMI were randomized either to start abciximab (0.25 mg/kg bolus followed by 10 mug/min infusion) during the organization phase for pPCI (Group 1, n=28) or immediately before pPCI (Group 2, n=27). The time between first bolus of abciximab and first balloon inflation of pPCI was 83+/-18 vs 21+/-13 min in Group 1 vs 2. The pre-pPCI ST-segment resolution (55+/-21.4% vs 42.4+/-18.2%, p=0.005), TIMI flow grade 3 (29% vs 7%, p=0.042), corrected TIMI frame count (58.4+/-32.7 vs 78.9+/-28.4 frame, p=0.018) %diameter stenosis (76.3 /63.5-100/ vs 100 /73.5-100/; median /interquartile range/, p=0.023), were significantly higher in Group 1 vs Group 2. Quantitative myocardial dye intensity measurement revealed a significantly higher grade of myocardial tissue perfusion (1 /0-9.25/ vs 0 /0-3.0/ grey pixel unit, p=0.048) in Group 1 before pPCI. Rapid release of cardiac enzymes was observed in Group 1 as compared with Group 2: rate of rise of CK was 210+/-209 vs 97+/-95 U/l/h (p=0.015). QRS score indicated a smaller infarct size in Group 1 (4.8+/-3.8 vs 7.6+/-3.5, p=0.011) on day 7. CONCLUSION: The use of abciximab in the organization phase for pPCI results in signs of early recanalization of the infarct-related artery and a subsequent improved myocardial tissue reperfusion.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15571828

J Am Coll Cardiol (2004);43:1780-7
Impact of intravenous beta-blockade before primary angioplasty on survival in patients undergoing mechanical reperfusion therapy for acute myocardial infarction
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OBJECTIVES: We sought to examine the effect of intravenous beta-blockers administered before primary percutaneous coronary intervention (PCI) on survival and myocardial recovery after acute myocardial infarction (AMI). BACKGROUND: Studies of primary PCI but not thrombolysis have suggested that beta-blocker administration before reperfusion may enhance survival. Whether oral beta-blocker use before admission modulates this effect is unknown. METHODS: The Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial randomized 2082 AMI patients to either stenting or balloon angioplasty, each +/- abciximab. In accordance with the protocol, intravenous beta-blockers were administered before PCI in the absence of contraindications. RESULTS: A total of 1136 patients (54.5%, BB+ group) received beta-blockers before PCI, whereas 946 (45.5%,

BB- group) did not. The 30-day mortality was significantly lower in the BB+ group than in the BB- group (1.5% vs. 2.8%, p = 0.03), an effect entirely limited to patients who had not been receiving beta-blockers before admission (1.2% vs. 2.9%, p = 0.007). In contrast, no survival benefit with pre-procedural beta-blockers was observed in patients receiving beta-blockers at home (3.3% vs. 1.9%, respectively, p = 0.47). By multivariate analysis, pre-procedural beta-blocker use was an independent predictor of lower 30-day mortality among patients without previous beta-blocker therapy (relative risk = 0.38 [95% confidence interval 0.17 to 0.87], p = 0.02). The improvement in left ventricular ejection fraction from baseline to seven months was also greater after intravenous beta-blockers (3.8% vs. 1.3%, p = 0.01), an effect limited to patients not receiving oral beta-blockers before admission. CONCLUSIONS: In patients with AMI undergoing primary PCI, myocardial recovery is enhanced and 30-day mortality is reduced with pre-procedural intravenous beta-blockade, effects confined to patients untreated with oral beta-blocker medication before admission.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15145099

J Am Coll Cardiol (2004);44:1400-7
Procedural success versus clinical risk status in determining discharge of patients after primary angioplasty for acute myocardial infarction
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OBJECTIVES: We evaluated whether patients' clinical status, angioplasty success, or

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Catheter Cardiovasc Interv (2004);61:338-43
Angiographic predictors of left ventricular ejection fraction after successful angioplasty in acute myocardial infarction: an angiographic risk score for use in the catheterization laboratory
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We investigated the value of angiographic parameters in patients with successful primary angioplasty using a simple angiographic risk score. In 608 consecutive patients, we assessed the infarct-related artery, antegrade flow before treatment, presence of distal embolization, and myocardial blush grade after coronary angioplasty. LAD-related infarction (OR = 8.4; 3 points), TIMI 0-2 flow before angioplasty (OR = 2.2; 1 point), myocardial blush 0 or 1 (OR = 2.5; 1 point), and distal embolization (OR = 2.2; 1 point) were independent predictors of left ventricular ejection fraction (LVEF) < or = 40% after successful angioplasty. Patients with 0 (minimum) or 1 point have LVEF of 49.5% +/- 8.4% and 30-day mortality of 0.8%. Patients with 2-3 points have LVEF of 44.9% +/- 10.3% and 30-day mortality of 2.8%. Patients with 4 points have LVEF of 38.2% +/- 10.8% and 30-day mortality of 2.7%. Patients with 5-6 (maximum) points have LVEF of 32.0% +/- 9.4% and 30-day mortality of 6.9%. A simple angiographic score predicts LVEF and mortality in patients when leaving the catheterization laboratory after successful primary angioplasty for acute myocardial infarction.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14988892

J Am Coll Cardiol (2004);43:734-41
A randomized trial comparing myocardial salvage achieved by coronary stenting versus balloon angioplasty in patients with acute myocardial infarction considered ineligible for reperfusion therapy
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OBJECTIVES: We assessed myocardial salvage achieved by reperfusion with percutaneous coronary interventions (PCI) and compared stenting with balloon angioplasty (PTCA) in patients with acute myocardial infarction (AMI) ineligible for thrombolysis. BACKGROUND: A substantial proportion of patients with AMI are currently considered ineligible for thrombolysis, and reperfusion treatment is frequently not recommended for them. It is not known whether these patients benefit from PCI. METHODS: The Stent or PTCA for Occluded Coronary Arteries in Patients with Acute Myocardial Infarction Ineligible for Thrombolysis (STOPAMI-3) trial, a randomized, open-label study, included 611 patients with AMI who were ineligible for thrombolysis (lack of ST-segment elevation on the electrocardiogram, late presentation >12 h after symptom onset, and contraindications to thrombolysis). Patients were randomly assigned to receive either coronary artery stenting (n = 305) or PTCA (n = 306). Scintigraphic myocardial salvage index (proportion of the initial myocardial perfusion defect that was salvaged by reperfusion) was the primary end point of the study. RESULTS: A considerable myocardial salvage was achieved with both stenting and

PTCA. In patients assigned to receive stenting, the median size of the salvage index was 0.54 (25th and 75th percentiles, 0.29 and 0.87), as compared with a median of 0.50 (25th and 75th percentiles, 0.26 and 0.82) in the group assigned to receive PTCA (p = 0.20). Mortality at six months was 8.2% in the group of patients assigned to receive stenting and 9.2% in the group of patients assigned to receive PTCA (p = 0.69). CONCLUSIONS: Patients with AMI who are currently considered ineligible for thrombolysis by conventional guidelines may greatly benefit from primary PCI. The benefit seems to be comparable when a strategy of stenting is compared with a strategy of PTCA in these patients.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14998609

Jama (2004);291:736-9
Primary coronary intervention for acute myocardial infarction
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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14871919

J Am Coll Cardiol (2004);43:1773-9

after successful primary PCI is associated with reduced six-month mortality, with the greatest benefit in patients with a low ejection fraction or multi-vessel CAD.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15145098

J Am Coll Cardiol (2004);44:1215-23
Prognostic utility of comparative methods for assessment of ST-segment resolution after primary angioplasty for acute myocardial infarction: the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial
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OBJECTIVE: This study was done to assess and compare the prognostic significance of multiple methods for measuring ST-segment elevation resolution (STR) following primary percutaneous coronary intervention (PCI). BACKGROUND: Resolution of ST-segment elevation (STE) is a powerful predictor of both infarct-related artery patency and mortality in acute myocardial infarction (AMI). Recent thrombolytic studies have suggested that simple measures of STR may be as powerful as more complex algorithms. The optimal method of assessing STR following primary PCI has not been studied. METHODS: We analyzed 700 patients with technically adequate baseline and post-PCI electrocardiograms from the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial. Five methods were used to assess STR: 1) summed %STR across multiple leads (SigmaSTR); 2) %STR in the single lead with maximum baseline STE (MaxSTR); 3) absolute maximum STE before the procedure; 4) absolute maximum STE after intervention (MaxSTPost); and 5) a categorical variable based upon MaxSTPost (High Risk). RESULTS: At 30 days, SigmaSTR, MaxSTR, and MaxSTPost all correlated strongly with mortality ($p = 0.004$, $p = 0.005$, and $p < 0.0001$, respectively) and the combined end point of mortality or reinfarction ($p = 0.001$, $p = 0.001$, and $p < 0.0001$). At one year, SigmaSTR and MaxSTPost correlated with mortality ($p = 0.04$, $p = 0.0001$), reinfarction ($p = 0.02$, $p = 0.0015$), and the combined end point ($p = 0.02$, $p < 0.0001$). By multivariate analysis, only the simpler measures of MaxSTPost and High Risk categorization independently predicted all outcomes at both time points. CONCLUSIONS: The STR following primary PCI in AMI correlates strongly with mortality and reinfarction, independent of target vessel patency. The simple measure of the maximal residual degree of STE after primary PCI is a strong independent predictor of both survival and freedom from reinfarction at 30 days and 1 year.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15364322

Am Heart J (2004);147:253-9
Effectiveness of primary percutaneous coronary intervention compared with that of thrombolytic therapy in elderly patients with acute myocardial infarction
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BACKGROUND: Few data exist from a community-based perspective on the relative effectiveness of primary percutaneous coronary intervention (PCI) as compared with thrombolytic therapy (TT) in elderly patients with ST-elevation myocardial infarction

(STEMI), particularly in the current era of coronary stents and newer antithrombotic agents. METHODS: We evaluated data from patients, aged > or =70 years, with STEMI who were enrolled in the Global Registry of Acute Coronary Events study between April 1999, and September 2002. RESULTS: Of the 2975 elderly patients eligible for reperfusion therapy, 365 (12.7%) underwent primary PCI and 769 (26.7%) received TT. The median delay from hospital arrival to therapy was 105 minutes for primary PCI and 40 minutes for TT. Inhospital complications for primary PCI versus TT included mortality (13.5% vs 14.8%), reinfarction (1.1% vs 5.7%), composite of death or reinfarction (14.3% vs 18.7%), cardiogenic shock (11.3% vs 11.6%), major bleeding (8.6% vs 5.9%), and stroke (1.1% vs 2.8%). After adjustment for baseline differences and propensity score, patients receiving primary PCI showed a lower rate of reinfarction (odds ratio

Cardiac function and the incidence of reperfusion injury and cardiac events were also compared. RESULTS: Urinary 8-epi-PGF2alpha excretion was increased 2-fold at 60 to 90 minutes after PCI in the control group, whereas it was unchanged after PCI in the nicorandil group (P <.0001 between the 2 groups). The incidence of no-reflow phenomenon was lower in the nicorandil group than in the control group. Left ventricular ejection fraction and cardiac index at 6 months were greater in the nicorandil group than in controls. Plasma brain natriuretic peptide level at 6 months was lower in the nicorandil group. Incidences of inhospital cardiac events and rehospitalization were lower in the nicorandil group than in controls. CONCLUSIONS: Nicorandil improves cardiac function and clinical outcomes in patients with AMI. Suppression of ROS formation may be involved in the mechanism.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15459610

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Impact of ST-segment resolution after primary angioplasty on outcomes after myocardial infarction in elderly patients: an analysis from the CADILLAC trial
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BACKGROUND: Age is a strong independent predictor of outcomes after primary percutaneous coronary intervention (PCI) for acute myocardial infarction (AMI). Whether lower rates of reperfusion success contribute to the poor prognosis in elderly patients is unknown. METHODS: A formal ST-segment analysis substudy was performed in 695 patients undergoing primary PCI for AMI in the Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications (CADILLAC) trial. Reperfusion success (determined by the magnitude of ST-segment elevation resolution [STR] after PCI) was evaluated in 4 age groups: <50 years (n = 163), >or=50 to <60 years (n = 187), >or=60 to <70 years (n = 194), and >or=70 years (n = 151). RESULTS: There were no differences in the age groups for angiographic procedural success (>91% in all, P =.6), postprocedural Thrombolysis in Myocardial Infarction grade 3 flow (>94%, P =.8), and the proportions of patients with complete, partial, or absent STR (P >.8). However, rates of 30-day mortality (0.6%, 1.1%, 3.6%, 6.0%, respectively) and major adverse cardiac events (MACE; 2.5%, 4.8%, 6.2% 9.3%, respectively) increased with age. Rates of mortality and MACE were also inversely related to the magnitude of STR. Absent STR (hazard ratio, 3.00; 95% CI, 1.37-6.58; P =.006) and age (hazard ratio, 1.34; 95% CI, 1.01-1.77; P =.04) were independent predictors of 30-day MACE by using multivariable modeling. CONCLUSIONS: Lack of effective myocardial reperfusion is not a contributory mechanism responsible for the high morbidity and mortality rates observed in elderly patients. Nevertheless, advanced age and absent STR are both independent predictors of adverse outcomes after primary PCI, emphasizing the importance of successful reperfusion in the elderly population.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15077083

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Magnitude and impact of treatment delays on weeknights and weekends in patients

undergoing primary angioplasty for acute myocardial infarction (the cadillac trial)
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In 2,082 patients in the CADILLAC trial, the outcomes of patients presenting during peak hours were compared with those presenting during peak hours (Monday to Friday 8a.m. to 8 p.m., n = 1,047, 51%) were compared with those of patients presenting during off-peak hours (weeknights from 8 p.m. to 8 a.m. and weekends, n = 989, 49%). Although treatment times to percutaneous coronary intervention (PCI) were delayed approximately 21 minutes, in patients with acute myocardial infarctions occurring on weeknights and weekends, this modest delay did not adversely affect procedural success, myocardial recovso3295.61.1517 T080 Tc-0TD02 Tw,ecov7(etecov7(al..75.1()5tions)2.730

infarction, and low BMI (all $p < 0.05$). The in-hospital mortality rate was significantly higher in patients with this complication than in patients without this complication (47.6% vs 8.0%; $p < 0.0001$). The incidence of this complication was significantly lower in patients with AMI who underwent primary PCI than in those with early or recent MI who underwent elective PCI (3.0% vs 0.23%, respectively; $p = 0.0001$). CONCLUSION: Primary PCI had a striking impact on reducing the incidence of VSD after AMI compared to elective PCI in patients who did not receive thrombolytic therapy. Advanced age, female gender, anterior infarction, and low BMI had potentially increased the risk of this catastrophic complication after AMI in this Chinese population.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15136368