ume in one second), PEFR (peak expiratory flow rate), FEF 50% (forced expiratory flow at 50% of FVC), FIF50% (forced inspiratory flow at 50% of FVC), DLCO-SB (diffusing capacity of the lung to carbon monoxide-single breath technique), DLCO/VA (DLCO-SB/alveolar ventilation ratio) or IVC (inspiratory vital capacity).

Baseline characteristics were similar in the two groups but there were significantly more males and smokers in the surgical group ($p < 0.01$). Comparing baseline PFTs with those undergoing PTCA, the only significant differences were a 16.9% higher PEFR (p=0.04), a 12.5% lower DLCO/VA (p=0.01), and a slightly lower BHT (1.9%, p=0.03) in the CABG group. At six months after surgery there were highly statistically significant reductions in FEV1, FVC, PEFR, FEF25-75%, FEF50% (all p<0.01), IVC, and DLCO-SB (p<0.03) of between 8 and 23% with a restrictive pattern.

Conclusion: This study demonstrates that PTCA results in minimal disturbance of pulmonary function. It also confirms that the deleterious effects of coronary artery bypass surgery extend to six months. This post-surgical deterioration in pulmonary function should be taken into account when choosing between these revascularization techniques.

1148-2 Impact of Peripheral Vascular Disease on In-Hospital Outcomes Following Percutaneous Coronary Intervention

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Background: The presence of peripheral vascular disease (PVD) is associated with more extensive atherosclerosis and an increase in mortality from coronary heart disease. The impact of PVD on short-term outcomes following percutaneous coronary intervention (PCI) is not well understood.

Methods: Five hospitals in the New York City area contributed prospectively defined data elements on all patients undergoing PCI between January 1, 1998 and October 31, 1999. We analyzed the effect of PVD on in-hospital outcomes following PCI using univariate and multivariate methods.

Results: Of 10,847 patients in the database, 803 (7.4%) had PVD. Patients with PVD were older (70 years vs. 63 years, P=0.001), more often female (34% vs. 30%, P=0.07) and more likely to be white (85% vs. 81%, P=0.02) than those without PVD. A history of diabetes (32% vs. 25%, P=0.001), hypertension (81% vs. 72%, P=0.001), myocardial infarction (MI) (47% vs. 39%, P=0.001), stroke (10.3% vs. 3.1%, P=0.001), congestive heart failure (11.4% vs. 4.9%, P=0.001) and prior bypass surgery (23% vs. 9.8%, P=0.001) was more common in PVD patients. The mean ejection fraction was significantly reduced in PVD patients (42% vs. 45%, P=0.001) compared to those without PVD. Shock and hemodynamic instability was not increased in PVD patients. Left main coronary disease was more common in PVD patients (11% vs. 3.8%, P=0.001). The use of stents (73% vs. 82%, P=0.001) was less common and atherectomy more common (15% vs. 11%, P=0.001) in PVD patients. Procedural success was 97% in both groups. Post-procedure complications including MI, stroke, stent thrombosis and abrupt closure did not differ between groups. In-hospital mortality was 1.4% among patients with PVD compared to 0.5% for those without PVD (P=0.001). After adjustment for differences in clinical characteristics, the risk of in-hospital mortality for patients with PVD was 2.0 (95% Confidence Intervals: 1.01-4.0, P=0.04).

Conclusion: Patients with PVD who undergo PCI are an extremely high-risk population. However, even after adjustment for their high-risk features, they maintain a 2-fold risk of in-hospital mortality.

1148-4 Differences in Heparin Sensitivity Between Asians and Non-Asians

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Background: Access site bleeding complications can lengthen hospital stay and increase in peri-procedural morbidity and resource consumption. A significant proportion of these complications can be attributed to over-dosing of heparin. Clinical observations led us to hypothesize that Asians have a higher sensitivity to heparin compared to non-Asians.

Methods: In 106 patients, we prospectively administered a lower dose of heparin to Asians (50 units/kg) compared to non-Asians (70 units/kg) undergoing an elective PTCA/stent procedure and compared peri-procedure activated clotting time (ACT) and in-hospital bleeding. Patients with unstable angina, recent myocardial infarctions (<7 days) and those administered GP IIb/IIIa inhibitors were excluded.

Results: (See table.) There was no statistical difference in the baseline characteristics, the angiographic presence of thrombus, or the incidence of procedural complications between the two groups. The comparative results demonstrate that similar levels of ACT are achieved on average in Asians with significantly less heparin/kg. There is also a difference in the average individual ACT to heparin/kg ratio, suggesting distinct dose response curves in the two groups. Using multiple linear regression, being Asian proved to be a significant explanatory variable in predicting ACT levels (p=.048).

Conclusion: These findings suggest a higher sensitivity to heparin in Asians and a need to dose heparin lower in this population of patients.

	Asian (n=55)	Non-Asian (n=51)	p-value
ACT (sec)	282.4 ± 63.5	292.9.1 ± 48.6	0.33
Heparin units/kg	52.4 ± 17.2	70.0 ± 17.8	<0.001
ACT/Heparin units/kg	5.8 ± 2.0	4.3 ± 0.9	<0.001

1148-5 Ionic Contrast Substantially Increases the Activated Clotting Time in Patients Receiving Abciximab and Bivalirudin at the Time of Percutaneous Coronary Intervention

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Background: Ionic contrast possesses antithrombotic properties; however, the clinical significance of these effects remains contentious. In the setting of potent antiplatelet and antithrombin therapy during PCI, it remains unknown whether the use of ionic contrast results in a further increase in anticoagulation status.

Methods: The first part of the ongoing REPLACE trial randomized 1056 PCI patients to receive either heparin or bivalirudin as adjunctive antithrombotic therapy (the choice of contrast dye and glycoprotein IIb/IIIa inhibition was left to the discretion of the attending physician). Our analysis compared the 396 available ACT values in patients who received ionic versus nonionic contrast, and then further stratified these patients according to the combination of antithrombotic and antiplatelet therapy they received.

Results: The use of ionic contrast in PCI patients receiving adjunctive bivalirudin and abciximab was associated with a significant increase in the ACT (460± 189sec vs 348± 71sec, p=0.01). This additive effect of ionic contrast on ACT was not observed with other combinations of antithrombotic and antiplatelet therapies. (See Table)

Conclusions: In PCI patients treated with abciximab and bivalirudin, the use of ionic contrast results in a significant prolongation of the ACT. This appears to represent a unique interaction between ionic dye, abciximab, and bivalirudin, and is not observed with other antiplatelet and antithrombotic combinations.

ACT Values (sec)

	Ionic	Nonionic	P value
Bivalirudin (all)	(n=77) 395+/-144	(n=319) 359+/-82	NS
Bivalirudin/ Abciximab	(n=29) 460+/-189	(n=105) 348+/-71	0.01
Bivalirudin/ Eptifibatide	(n=19) 333+/-45	(n=102) 371+/-85	NS
Heparin (all)	(n=80) 288+/-72	(n=322) 307+/-93	NS
Heparin/Abciximab	(n=38) 293+/-86	(n=92) 286+/-106	NS
Heparin/Eptifibatide	(n=18) 295+/-53	(n=108) 317+/-94	NS

1148-23 Frequency, Determinants, and Clinical Implications of Angiographically-Visible Intracoronary Thrombus Following Primary Angioplasty for Acute Myocardial Infarction

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Background: In pts undergoing primary angioplasty (PA) for AMI, presence of intracoronary thrombus after intervention may reflect a severe prothrombotic tendency & could result in poor clinical outcome.

Methods: In 2148 pts enrolled in PAMI-2, Stent PAMI, & PAMI No-Surgery-On-Site, we compared clinical & angiographic features of pts who had visible thrombus after PA (THR group, N=131) determined by core lab analysis, & those who did not. We assessed the impact of visible thrombus after PA on in-hospital & 1-yr outcomes in all pts & in the subset of pts with final TIMI-3 flow (N=1991).

Results: THR pts were more likely to have Killip class > 1 (21 vs 13%) & had lower LVEF (46 vs 49%). They had greater diameter stenosis (94 vs 92%), & higher incidence of baseline thrombus (87 vs 62%) & TIMI-0 flow (75 vs 63%) in the culprit artery. During PA, they were less likely to receive ionic contrast (83 vs 91%) and stents (8 vs 35%), but more likely to receive lytics (11 vs 5%) and IABP (19 vs 5%). After PA, THR pts had greater residual diameter stenosis (37 vs 19%), & less TIMI-3 flow (69 vs 94%) (p< 0.05 for all). Multivariate correlates of THR after PA included presence of thrombus before PA & lack of stent use. During hospitalization, THR pts had similar mortality (3.8 vs 2.4%) but higher rate of MACE (death, reinfarction, or ischemic target vessel revascularization; 10.7 vs 5.4%, p=0.01) than non-THR pts. During 1 yr follow-up, THR pts had higher mortality (9.2 vs 5.2%, p=0.05) but similar rate of MACE (23 vs 18%). In multivariate analyses, pt age, gender, baseline tachycardia, Killip class, LVEF, & initial TIMI flow, but not presence of THR after PA, were independently related to clinical outcomes. In the subset with final TIMI-3 flow, THR pts (n=89) had similar in-hospital death (1.1 vs 2.1%), & MACE (9.0 vs 5.2%), as well as 1-year death (6.1 vs 4.8%) & MACE (21 vs 17%) as non-THR pts (p=NS for all).

Conclusions: 1. Visible intracoronary thrombus is uncommon after primary angioplasty, & is related to presence of thrombus before angioplasty & lack of stent use. 2. Post-angioplasty thrombus is a marker of worse in-hospital & 1-yr outcomes. However, the adverse prognosis of thrombus pts is related to their inferior baseline characteristics.