Emergent Angioplasty for Acute Myocardial Infarction at a Community Hospital Without On-Site Cardiac Surgery


Background: Percutaneous coronary intervention (PCI) for acute myocardial infarction (AMI) at hospitals without on-site cardiac surgery (CAS) remains controversial. We studied the safety and efficacy of PCI performed at AMI at Imperial St. Joseph's Hospital (ISJ) and SMH, the nearest community hospital without on-site CABG. Patients were randomized between the two hospitals on a 1:1 basis to undergo PCI with or without stenting at SMH. The primary endpoint was a composite of death, reinfarction, target vessel revascularization, and urgent cardiac surgery (within 30 days of index hospitalization).

Methods: ISJ and SMH are linked by a T3 telemedicine line to enable on-line consultation with cardiology and surgical staff at SMH. We compared the results of emergent PCI for AMI at ISJ (defined as <24 hours after symptom onset) to SMH (defined as >24 hours after symptom onset). We also compared the results of emergent PCI for AMI utilizing telemedicine at ISJ to those of patients presenting to ISJ without utilization of telemedicine.

Results: ISJ and SMH are linked by a T3 telemedicine line to enable on-line consultation with cardiology and surgical staff at SMH. We compared the results of emergent PCI for AMI at ISJ (defined as <24 hours after symptom onset) to SMH (defined as >24 hours after symptom onset). We also compared the results of emergent PCI for AMI utilizing telemedicine at ISJ to those of patients presenting to ISJ without utilization of telemedicine.

Conclusion: Our initial experience of emergent PCI for AMI utilizing telemedicine at a community hospital without on-site CABG is favorable, and the results are comparable to those at a tertiary facility with on-site CABG. These data support the new ACC/AHA Guidelines for PCI at a center without on-site CABG.

Prevention of Clinical Events and Restenosis After Percutaneous Transluminal Coronary Angioplasty With Trapidil: Results of the STARCI I Study

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Background: Still 30-40% of pts have a significant degree of restenosis after PTCA even in the stent era. Trapidil (T), a drug with antiplatelet and antiproliferative activity (platelet-derived growth factor antagonist) was shown to prevent post-PTCA restenosis in humans. STARCI I study, showed a significant reduction in restenosis only in T vs 29.7% ASA. Methods. To confirm these data, STARCI II trial treated a 6-month administration of T in 993 pts undergoing elective PTCA (200 mg tid vs placebo (P) on top of ASA), in the 1-year combined end-point of death, reinfarction and need for repeat revascularisation. The study was randomized, multicenter, double-blind. A subgroup of 306 pts was also randomized to repeat coronary angiography (CA) at 6 months with central reading. Results. Baseline clinical and angiographic characteristics were similar in the two study groups. Stent was implanted in 57% of the pts. Primary end-point occurred in 16.0% of P and in 26.5% of T groups (p=0.37). When occurrence or worsening of angina was considered further clinical end-point, this summed up to 23.0% in P vs 27.7% in T group (p=0.12). Treatment had to be discontinued for untoward effects in 5.0% and 9.6% of pts, respectively in P and T groups (p=0.02). The angiographic sub-study showed a slightly better final minimal luminal diameter (MLD) for T treated pts (1.7±0.64 mm vs 1.5±0.67 mm) and less MLD late loss (0.48 vs 0.05 mm). This was particularly evident in patients treated with balloon alone (0.21 vs 0.48 mm). Binary restenosis rate (final stenosis >50%) was 31.7% in stented pts in T vs 21.7% in P group (p=0.29) while was 15.6% in the balloon alone pts in T and 35.3% in P group (p=0.08)

Conclusion. T seems not to influence clinical outcome of pts treated with elective balloon PTCA with/without stenting. Angiographic data suggest a possible favorable effect on restenosis only in pts treated with balloon PTCA alone.
sites performed in 31%, and additional thrombolytic agents given in 23% of cases. PCI was angiographically successful in 86%, but the in-hospital mortality was 28%. The post-PCI length of stay was 7.0±9.7 days. Additionally, 1.7% had a CVA, 6.2% had renal failure (RF), and 6.4% had vascular complications. Age was the single most predictive variable: mortality was 11.2% for ages up to 50; 20.0% for ages 51-60; 27.2% for ages 61-70; 34.8% for ages 71-80; 43.3% for ages above 80. Stenosis morphology (as A, B1, B2 or C) was not predictive. Logistic regression identified six multivariate predictors of death: age <60 years (odds ratio 1.45, 1.32, 1.60 for each 10 year increment); LVEF (<0.0001, 0.76 (0.70, 0.82) for each 10% decrement); diabetes (p=0.0001, 1.65 (1.28, 2.12)); 

RF (p=0.0005, 1.98 (1.35, 2.90); prior PCI (p=0.01, 1.69 (0.51, 0.93)); and urgent or emergency PCI (p=0.0001, 0.32 (0.20, 0.53) and 2.54 (1.64, 3.51). The model showed good discrimination with a ROC of 0.776, validated 0.736. Calibration was excellent, permissive. 

1125-7

Emergency CABC After Failed PCI in Contemporary Practice: A Report From the ACC-NCDR Registry


Background: The increased use of coronary stents and glycoprotein IIb/IIIa inhibitors over the past five years has resulted in a marked decrease in the need for emergency coronary artery bypass surgery (em CABG) after failed PCI. However, situations still occur that require the availability of surgical options.

Methods: To characterize clinical and angiographic findings predisposing to em CABG in contemporary practice, the 100,253 consecutive PCI procedures performed from 1998-2000 at 145 institutions contained in the ACC-NCDR database were analyzed.

Results: 371 (0.4%) of PCI procedures required em CABG. The average age was 63±12 years, 64% were men, 70% had prior CABG, and 27.6% prior PCI. Stents were placed in 28.5% of cases. Failure of PCI was due to in 42.1% and thrombosis in 11.0%. LV ejection fraction was 52±12%. The indications for PCI included MI ±6 hours duration in 16.4%, cardiogenic shock in 6.7%, and unstable angina in 62.8%. Interestingly, 50% were considered elective PCI, while 24.0% were urgent and 25.1% emergent. Stenosis morphology assessed by AHA/ACC class showed 2.2% A, 28.9% B1, 32.3% B2, and 36.1% C type lesions. When evaluated by SCAI class, 49.3% were C patent, 14.6% non-C occluded, and 12.7% C occluded. Tamponade occurred in 9.4%. In-hospital mortality was 11% and Q wave MI developed in 6.5%. Multivariate predictors of in-hospital mortality after em CABG are shock (odds ratio 3.36, CI 1.0-10.5, p<0.05), peripheral vascular disease (3.20, 1.2-8.5, p=0.02), left main disease (3.33, 1.1-10.2, p=0.03), and emergent indication (2.70, 1.0-7.12, p=0.05).

Conclusion: The need for em CABG in contemporary PCI is very low, but when required it carries serious mortality and morbidity implications. A disturbing percentage of cases requiring em CABG consist of what are usually thought of as "low-risk" elective procedures with non-complex stenosis morphologies and/or totally occluded vessels. Tamponade or the inability to deliver a stent may influence the decision process. Thus, there is still a role for surgical standby and em CABG options in contemporary practice.

1125-8

A Double Blind Placebo-Controlled Randomized Trial of Fluvasatin After Successful Percutaneous Intervention in Patients With Coronary Heart Disease: The Lescol Intervention Prevention Study (LIPS)

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Background: Based on evidence from large clinical trials of subjects with and without coronary heart disease (CHD) or myocardial infarction (MI), statins are now well-established as the primary and secondary prevention of fatal and non-fatal coronary events; however, no study has prospectively evaluated the long-term effect of statins on clinical outcomes in patients who have undergone PCI.

Methods: LIPS is a double-blind, randomized trial designed to compare the effect of fluvasatin (40 mg bid) on major adverse cardiac event in MACE (cardiac death, non-fatal MI, repeat-CABG or PCI)-free survival time in 1677 patients with CHD and successful TCT over a 3 year follow-up. Secondary endpoints are the incidence of MACE, non-cardiac deaths, hospitalization for other atherosclerotic diseases, changes in serum lipid concentrations, and original status. Inclusion criteria were: ages 18-80 years; first successful TCT within 6 months before randomization; total cholesterol of 135 - 270 mg/dL (3.5 - 7.0 mmol/L) with fasting triglycerides <400 mg/dL (<4.5 mmol/L) in the absence of any lipid-lowering therapy for at least 6 weeks. Baseline characteristics were as follows:

Mean age (y) 60.5±10
Male (%) 84.0
Smoking (%) 26.6
Body Mass Index (kg/m²) 28.6±3.3
Blood pressure (mm Hg) 128.0/75.0
Heart rate (bpm) 66.0±11
Diabetes mellitus (%) 12.0
Total Number Of Lesions Treated 222.0

Results: Summary: The LIPS study is the first to investigate the effects of statin therapy on MACE in patients who have undergone successful primary TCT for CHD. Final results will be presented.

1125-9

Two-Year Outcomes Following Percutaneous Intervention: Beamant Angioplastin Converting Enzyme Genotype and Endpoints Trial (The BAGET Trial)


Background: The angiotensin converting enzyme (ACE) genotype has been correlated with adverse cardiovascular events. This study was designed to determine if the ACE genotype is predictive of target vessel revascularization (TVR), myocardial infarction (MI), and mortality following percutaneous intervention.

Methods: We prospectively analyzed the ACE genotype (D/D, D/I, I/I) in 758 patients undergoing percutaneous intervention to determine clinical restenosis and mortality at two year follow up. We analyzed baseline clinical parameters, angiographic details and outcomes in patients with D/D (255 patients) vs D/I (344 patients) vs I/I (154 patients).

Results: Thus far in the D/D vs I/I groups there is no difference in history of hyper- tension (76% vs 77% vs 71%, p=NS), hyperlipidemia (76% vs 74% vs 83%, p=NS) or smoking (69% vs 74% vs 70%, p=NS). No difference in age (65±11, 65±11, 62±11, p=NS) or female gender (27% vs 24% vs 26%, p=NS) seen. No difference in use of ACE inhibitors (46% vs 49% vs 42%, p=NS) or angiotensin receptor blockers (8% vs 11% vs 14%, p=NS) is seen between the groups. History of diabetes mellitus (34% vs 32% vs 33%, p=NS), coronary artery disease (85% vs 81% vs 84%, p=NS) and MI (53% vs 51% vs 54%, p=NS) are not different between groups. TVR is not affected by genotype (23% vs 21% vs 15%, p=NS). The combined endpoint of TVR, MI and death did not differ by genotype as well (27% vs 26% vs 24%, p=NS).

Conclusions: These findings suggest that the ACE genotype does not correlate with TVR, MI or death at 2 years following percutaneous intervention. Therefore ACE genotyping is not a useful tool for risk stratification at the time of percutaneous intervention.

1125-10

Gender Differences in Mortality After PTCA, According to Age

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Background: Younger women hospitalized for myocardial infarction are a high-risk group compared to men, with higher short and long-term mortality. This gender difference is less pronounced at older ages. We sought to determine whether younger women are also at increased risk of in-hospital mortality after PTCA compared to men, and whether this gender difference becomes less pronounced with advancing age.

Methods: We studied 150,919 patients included in the National Cardiovascular Network (NCN) database who received PTCA at 23 clinical centers between October, 1993, and June, 2000, and for whom outcome information was available.

Results: In logistic regression models that adjusted for demographics, medical history, prior PTCA, prior CABG, height, weight, renal insufficiency, LVEF, number of diseased vessels and elective admission, women had a higher odds of death compared to men. This greater risk was most pronounced in the youngest age group. Among patients <50 years old, the odds of death was 2 times higher in women compared to men. However, this gender difference was less substantial in older age groups.

Conclusion: Younger women undergoing PTCA are at a substantially higher risk of in-hospital mortality compared to younger men, even after adjustment for traditional risk factors. At older ages, women are at only slightly higher risk of mortality compared to men. The reasons for the higher post-PTCA mortality risk in young women compared to young men need investigation.