history of hypertension or heart failure, weigh less; were less likely to use tobacco, have a history of bypass surgery, and were less likely to use coronary revascularization. (P<0.0001 all). Increased time to revascularization, larger infarction size, and worse ejection fraction on discharge were more predictive of stroke in men than in women (table). When multivariate analysis was performed on patients individually, in patients only remained independently predictive in the male, but not female, population. Conclusion: Women are at significantly higher risk for in-hospital NHOVA following MI, which is not explained by their greater prevalence of other risk factors.

Background: Numerous studies have shown that Troponin I (Tnl) to be a reliable predictor of prognosis in acute coronary syndrome patients, but none has assessed the clinical significance of elevated Troponin I (>5.0 ng/mL) in patients hospitalized with non-cardiac diagnoses. Methods: In this observational analysis, a total of 60 patients, 30 consecutive with elevated Troponin I (eTnl) and 30 consecutive with normal Troponin I (nTnl) hospitalized with non-cardiac diagnoses were investigated. Prevalence Rate Ratio (PRR) was utilized to analyze all-cause mortality as the primary endpoint. Multivariate logistic regression analysis was utilized to adjust mortality data for variables that differed significantly between the two groups. Results: The major categories of the admitting diagnosis were pulmonary (Tnl < 8, nTnl < 8), sepsis (Tnl < 7, nTnl < 7), neurological (eTnl > 6, nTnl > 6), gastrointestinal (Tnl > 7, nTnl > 6), and others (eTnl > 5, nTnl > 5). There were no significant differences found between the two groups in terms of their total number of cardiac risk factors, previous history of coronary artery disease or coronary revascularization, baseline characteristics, and use of aspirin, beta-blockers, angiotensin converting enzyme inhibitors, or statins. The eTnl group consisted of 20 females, compared to 9 males in the nTnl group (p < 0.01). Median age in the eTnl group was 67.8 years compared to 59.8 years in the nTnl group (p = 0.047). Of the thirty patients with elevated Tnl (mean = 2.10 ± 0.52 SD), 12 (40%) died during the hospitalization compared to two deaths recorded in patients with normal Tnl (mean = 0.04 ± 0.007 SD), and this difference was significant (PRR = 2.7, 95% CI = 1.9-3.8, p < 0.0005). Despite differences in age and gender between the two groups, adjusted analysis revealed elevated Troponin I to be the only risk factor for mortality (p = 0.003 for Tnl, p = 0.08 for gender, p = 0.08 for age). Conclusion: We have shown for the first time that the elevated Troponin I is an independent prognostic marker for increased mortality even in the patients admitted with non-cardiac diagnoses. These results trend towards more patients with sepsis in the elevated Troponin I group.

POSTER SESSION

1147 Applying Evidence-Based Therapies in Clinical Practice
Tuesday, April 01, 2003, 9:00 a.m.-11:00 a.m.
McCormick Place, Hall A
Presentation Hour: 9:00 a.m.-10:00 a.m.

1147-92 Initial Results of the Guidelines Applied In Practice for Improving Quality of Care Patients With Acute Myocardial Infarction: The Flint-Saginaw Cooperative Initiative of the American College of Cardiology Foundation, Greater Flint Health Coalition, and Michigan Peer Review Organization
Rajendra H. Mehta, Cecilia K. Montoye, Jessica Faub, Dorothy Nagle, James Kune, Ethnig Raj, Peter Fattal, Mahamed Ali Mansour, Shari Berman, Grant Chang, Stephen Kiscior, Anthony DeFranco, Kim M. Eagle, on Behalf of ACC GAP Steering Committee, University of Michigan, Ann Arbor, MI

Background: A new trial in GAP-Pilot Project met in high level of evidence-based therapies for patients with acute myocardial infarction (MI), we decided to test if major emphasis on process changes and tool use rather than focusing solely on improving key indicator rates would increase the use of evidence-based therapies. Methods: The GAP-Flint-Saginaw MI Initiative was modeled on GAP-Pilot Project in five area hospitals in Michigan with greater emphasis on tool use and continuous monitoring of tool use. This surveillance allowed for early identification of process changes, barriers, and resistance to change. This in turn led to new rapid cycle plans to overcome barriers. Main outcome measures were MI quality indicator use in pre-1(11/01-8/001) and post-12(10/31-3/31/02) measurement samples. Results: One or more tools were used in 93% of patients (standard care=102%, critical pathways=97% and discharge documents=44%). Indicator use is shown as table. *p<0.05 compared to baseline.

Indicators Baseline (n=533) Remeasurement (n=619)
Within 24 hours of hospital arrival
Aspirin (%) 86.9 89.6 92.0
Beta-blockers (%) 71.6 71.6 72.0
LDL cholesterol measurement 82.3 83.6 86.8
At discharge
Aspirin (%) 78.8 90.9* 93.4*
Beta-blockers (%) 78.4 90.4 89.3
ACE inhibitors in patients with low LV dysfunction 69.2 88.9* 93.7*
Smoking cessation counseling (%) 57.5 72.8* 84.6*
Dietary counseling (%) 78.1 88.9* 95.4*
Cholesterol lowering agents 76.8 84.1 87.6

Conclusions: These data validate the results of GAP-Pilot Project that quality of MI care can be improved through emphasis on guideline-based tool use. Continuous monitoring of tool use and identifying barriers to implementation of barriers, lead to substantially higher tool use than observed in initial GAP project. Tool use is associated with higher adherence to key indicators, particularly key therapies at discharge.

1147-93 Predictors of Treatment Delay in Patients With Acute Myocardial Infarction Undergoing Primary Angioplasty: An Analysis From the CADILLAC Trial
Mark A. Turco, Martin Fahy, Roxanna A. Methran, Alexandra Lansky, Cindy L. Grines, James E. Tcheng, Eugolo Garcia, Giulio Guagliumi, David A. Cox, Thomas D. Stuckey, Dawn E. Shuddick, Gregg W. Stone, Center for Cardiac & Vascular Research and Washington Adventist Hospital, Takoma Park, MD, Cardiovascular Research Foundation and Lenox Hill Heart and Vascular Center, New York, NY

Background: Delays in time to angioplasty after hospital arrival in patients (pts) undergoing primary PCI for AMI have been associated with increased mortality in large data bases. However, the reasons for delays and correlates for delay in angioplasty remain poorly understood.

Methods: We analyzed the baseline demographic, angiographic, and procedure-related variables predictive of delays in door-to-balloon time (DB time) in the CADILLAC trial, in which 2,082 pts of any age with AMI onset c12 hours (excluding shock) were randomized to PTCA vs stent, with vs without abciximab.

Results: Median DB time was 120 minutes (interquartile range 90-162) for all pts. Statistically significant clinical predictors of delay >2 hrs by univariate analysis included female gender (risk ratio 1.13, p=0.0001), circumflex infarct (RR 1.54, p=0.0001), insulin dependent diabetes (RR 2.22, p=0.002), prior CABG (RR 3.28, p=0.02), non-ST-elevation MI (RR 4.50, p=0.0001), 3 vessel disease (RR 1.30, p=0.02), and delayed time to ER arrival (p<0.0003). Angiographic predictors of delay included procedure TIMI-3 flow, small reference vessel diameter and larger initial MLD (all p<0.0001). Multivariate predictors of delay using stepwise logistic regression included non-LAD infarction (p=0.04), female gender (p=0.0004), creatinine level (p=0.02), small reference vessel diameter (p<0.0001), and larger initial MLD (p=0.0001).

Conclusion: The time from hospital presentation to angioplasty is >2hrs in 35% of pts with AMI undergoing contemporary interventional management. Predictors of delay to treatment after hospital arrival may be explained by atypical symptoms and/or nondiagnostic ECGs (female gender or LCA MI), and less severe symptoms (smaller infarct vessel or patency of infarct vessel due to larger MLD). These data emphasize the need for awareness and expedited reperfusion pathways for patients at highest risk for delays to PCI.

1147-94 Beneficial Effects of Direct Call to Emergency Medical Services on Time Delays and Management of Patients With Acute Myocardial Infarction: Real World Data From RICO Database
Jean-Claude Deter, Oliver Derew, R. Jack-Meckh, lie- Marie Zeller, Yves Laurent, Isabelle Lhuillier, Jacques Ravisy, Yves Cottin, Jean-Eric Wolf, CHU Dijon, Dijon, France
Background: Delayed access to medical care in patients with acute myocardial infarction (AMI) increases myocardial damage. Only few studies have analysed the influence of direct call to emergency medical services (EMS) in patients with AMI. From the regional observatory of MI (RICO) data base, we report the acute management in patients calling either EMS or other medical contact (OMC) as first medical seek after symptoms onset of MI. Methods: Data were prospectively collected from January to October 2001, in the 6 medical units in charge of MI in the region of the Coté d’Or. Among these 1257 patients included, only 57 (10%) directly called EMS after symptom onset (group EMS) and 265 (82%) called another medical contact (group OMC). Results: The baseline characteristics including age and risk factors were similar among the 2 groups of patients. Moreover, cardiovascular history was the same between the 2 groups, except for history of MI (21% in EMS group vs 11% in OMC group, p<0.05). The median times from symptoms onset to first medical intervention (48 vs 105 min, p<0.02) and from
first medical intervention to hospital admission (60 vs 103 min, p<0.02) were markedly shorter in EMS group compared to OMC group (respectively 70 % vs 48 %, p=0.003), mainly due to a higher rate of primary angioplasty (respectively 53 % vs 20 %, p=0.004). Conclusion: Our study in real world reflecting usage from a French regional population demonstrated that only a small rate of patients use the direct call to EMS at symptoms onset of MI. This study also documents the beneficial effect of a direct call to EMS by reducing the pre-hospital delays and by increasing the rate of early revascularization.

1147-95 Glycoprotein ib/Ilb Inhibitors Are Underutilized Among Patients Who Undergo Cardiac Catheterization Following Acute Myocardial Infarction: Observations From the NRMI-4


Background. Glycoprotein Ilb-llla Inhibitors (GPIs) have been shown to improve the outcomes of patients with acute coronary syndromes. Recent reports have suggested that many MI patients who may be eligible for GPIs still do not receive these treatments. Methods. We examined the prevalence of GPI use in the NRMI 4 (Jul 2000 - Apr 2001) and created a predictive model to better ascertain the factors associated with GPI use. In order to minimize selection bias and confounding, we selected patients who received cardiac catheterization and presented at fully interventional capable hospitals. Patients who had contraindications to GPI and who were transferred-out to another hospital were excluded from this study. Results.

Utilization of GPI Ilb-Ilia Inhibitors (GPIs) after MI, N = 24,438

<table>
<thead>
<tr>
<th>GPI No GPI</th>
<th>OR 95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-White</td>
<td>0.80</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Women</td>
<td>0.90</td>
<td>0.001</td>
</tr>
<tr>
<td>Age &gt; 10 years</td>
<td>0.92</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>ICD/Defibrillator</td>
<td>0.83</td>
<td>0.002</td>
</tr>
<tr>
<td>Prior MI</td>
<td>0.87</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Medicare (vs FFS)</td>
<td>0.88</td>
<td>0.002</td>
</tr>
<tr>
<td>COPO</td>
<td>0.90</td>
<td>0.03</td>
</tr>
<tr>
<td>Smoker</td>
<td>1.11</td>
<td>0.003</td>
</tr>
<tr>
<td>West (vs Midwest)</td>
<td>1.17</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>South (vs Midwest)</td>
<td>1.17</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Anterior MI</td>
<td>1.21</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Prior CABG</td>
<td>1.16</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Prior PTCA</td>
<td>1.21</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>LBBB</td>
<td>1.59</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Chest pain</td>
<td>1.72</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

OR < 1.0 associated with less use; OR > 1.0 more use

Conclusion. Less than half of patients with MI who may be eligible for GPIs actually received these therapies. Males, women and increasing age were important factors associated with less use, though chest pain on initial presentation and prior coronary revascularization were associated with more use.

1147-96 Critical Pathways in the Emergency Department Have Improved Treatment Modalities and Outcome for Patients With ST Elevation Myocardial Infarction

Francesco Pelliccia, Domenico Cartoni, Paolo Salvini, Sandro Petrotelli, Alberta Cicciarelli, Francesco Pizzaro, Pietro Tanzi, San Camillo Hospital, Rome, Italy

Background: The use of protocols for pts with ST elevation myocardial infarction (STEMI) is growing, but no definite conclusion regarding the value of critical pathways has been drawn. Aim of this study was to investigate the impact of a critical pathway on processes of care and outcome for pts accessing the emergency department (ED) because of a possible STEMI. Methods: Critical pathways for management of acute chest pain and STEMI at our ED were developed in 1986 and revised every year. Accordingly, the records of all pts who were referred because of chest pain to the ED in 1997 (before pathways implementation) and in 2001 (after last pathways' revision) were reviewed. A STEMI was diagnosed at ED in 2001, and was not in 1997 and in 4524/843 (9.3%) chest pain pts in 2001. Pts were managed according to the ED cardiologist's decisions in 1997, whereas entered the pathway for STEMI in 2001, with predefined criteria for diagnosis, reperfusion, revascularization, and admission to ICU.

Results: Comparison of treatment modalities disclosed that more pts were given thrombolyis in 1997 (49% vs 16%, p<0.05), whereas in 2001 more pts were sent to PCI (63% vs 45%, p<0.05). In 2001, also, pts received more often aspirin (90% vs 81%, p<0.05) and iv. beta-blocker (60% vs 35%, p<0.05) soon after arrival at ED. Comparison between 1997 and 2001 revealed similar admission rates to CCU (69% vs 78%, NS) or cardiac wards (15% vs 15%, NS). Conversely, with respect to 1997, pts hospitalized in 2001 had shorter length-of-stay (15 vs 18 days, p<0.05) as well as lower major adverse coronary events (21% vs 30%, p<0.05) and lower all-cause in-hospital mortality (12% vs 20%, p<0.06). The quality of care indicators improved with time, as door to ECG interval (116 vs 102 min, p<0.05), door-to-needle time (26 vs 35 min, p<0.05) and door-to-balloon interval (70 vs 90 min, p<0.05) were shorter in 2001 than in 1997.

Conclusion: A critical pathway for STEMI at ED increases the use of evidence-based treatment strategies and improves outcome and quality of care of pts presenting to an ED because of acute chest pain.

1147-97 Use of Reperfusion Therapy in Patients Presenting With ST Elevation Myocardial Infarction: Findings From The TETAMI Study and TETAMI Registry (The Safety and Efficacy of Subcutaneous Enoxaparin Versus Intravenous Unfractionated heparin and of the Ironbain Versus Placebo in the Treatment of Acute Myocardial Infarction)

Gian Franco Gasparini, Mark Cohen, Fran Manitz, Enrique P. Gurfinkel, Kurt Huber, Ari Tienemian, Maria Krzeminska-Palucha, Nicolas Danotin, Harvey D. White, Luc Vittori, Clinical Medica Generale e Cardiologia, Florence, Italy

Early treatment with lytics or primary PCI reduces the mortality rate of STEMI patients. Pts presenting >12 h are generally considered to be ineligible for reperfusion therapy, and there are currently no specific treatment recommendations.

Methods: Patients with STEMI <24 h who are ineligible for acute reperfusion, have no cardiogenic shock and with no revascularization scheduled within 48 h were included in the TETAMI study and randomized to 1 of 4 antithrombotic regimens involving enoxaparin or UFH in combination with fibrinolysis or placebo for 2-8 days. A concurrent registry tracked STEMI patients reperfused <12 h and non-reperfused patients presenting <24 h and not enrolled in TETAMI. We compared the demographics and clinical outcomes of 1,337 pts ineligible for acute reperfusion with 1,147 pts eligible for reperfusion.

Results: Outcomes are presented below. The major reason for not using reperfusion therapy was lack of presentation. Reperfused registry patients were younger: ages 61, 67, and 67 years for TETAMI study and randomized to 1 of 4 antithrombotic regimens involving enoxaparin or UFH in combination with fibrinolysis or placebo for 2-8 days. A concurrent registry tracked STEMI patients reperfused <12 h and non-reperfused patients presenting <24 h and not enrolled in TETAMI. We compared the demographics and clinical outcomes of 1,337 pts ineligible for acute reperfusion with 1,147 pts eligible for reperfusion.

Conclusions: These data highlight the need for new therapeutic strategies for this high risk patient cohort.

1147-98 International Patterns in the Care of Acute Myocardial Infarction Patients in the OASIS Armored Trial (OAT): Characteristics of 1,835 Screened Patients

Michael Raposta, Aldo P. Maasgou, Londera K. Michalis, Irene Lang, Antonio C. Canhiao, Krystyna Loboz-Grudzien, Gerry Devlin, Gilmar Reis, Peter Mercair, Sandra Forman, Gervasio A. Lamas, Judith S. Hochman, on behalf of OAT Investigators, Charleston, VA

Background: Up to 1/3 of stable post-MI patients have an occluded infarct-related artery (IRA). OAT is an international, randomized trial designed to determine if benefit exists in opening the occluded IRA 5-98 days post-MI in asymptomatic, high-risk patients. As of 9/12/01, 911 patients were randomized to 1 of 4 antithrombotic regimens involving enoxaparin or UFH in combination with fibrinolysis or placebo for 2-8 days. A concurrent registry tracked STEMI patients reperfused <12 h and non-reperfused patients presenting <24 h and not enrolled in TETAMI. We compared the demographics and clinical outcomes of 1,337 pts ineligible for acute reperfusion with 1,147 pts eligible for reperfusion.

Conclusions: These data highlight the need for new therapeutic strategies for this high risk patient cohort.

Methodology: In order to define the population of MI patients from which OAT sites