1146-108 Association of Major Bleeding With Adverse Clinical Outcomes and Length of Stay: A TACTICS TIMI 18 Substudy

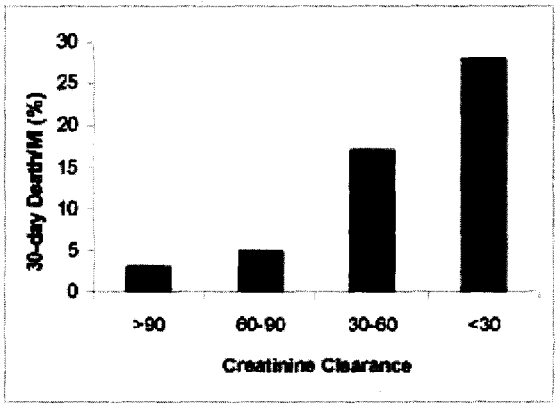
Mark K. Jordan, David E. Cohen, Graham C. Wong, Christopher P. Cannon, Eugene Braunwald, C. Michael Gibson, The TIMI Study Group, Brigham & Women's Hospital, Boston, MA

Background: Bleeding complications remain a potentially important contributor to morbidity and cost in the treatment of acute coronary syndromes (ACS). We hypothesized that bleeding would be associated with disease comorbidites, excess cost, and increase length of stay.
Methods: The TACTICS TIMI 18 enrolled 2220 patients with ACS and compared early invasive and conservative management strategies on a background of Tirofiban therapy. Major bleeding was defined as a decrease in the blood hemoglobin level of at least 5.0 g per deciliter, the need for the transfusion of 2 or more units of blood, the need for coronary artery bypass grafting (CABG), tamponade during the index hospitalization.
Results: Major bleeding occurred in 4.4% of all patients, 14.4% of CABG patients, 2.4% of non-CABG patients, and 4.7% of PCI patients. Intracranial hemorrhage occurred in one patient. Vascular access site bleeding occurred in 0.4% of all patients and in 1.5% of PCI patients. Increased age, lower weight, ST deviation, positive troponin status, an early invasive strategy, angiography during the initial hospitalization, emergent PCI, and CABG were all associated with major bleeding in univariate analysis. Only CABG and Age >65 were independently associated with major bleeding in the multivariate analysis. After adjustment for CABG, age>65, positive troponin status, diabetes, and ST deviation, major bleeding was independently associated with an increased risk of death at 30 days (O.R 5.0, p<0.001). Major bleeding was associated with $6,596 per patient of excess initial hospitalization costs, and 1.2 days per patient increase in length of stay (after adjustment for potential confounding variables).
Conclusions: Major bleeding occurred infrequently despite a high rate of invasive revascularization procedures. Major bleeding is associated with excess costs, increased length of stay, and higher mortality.

1146-109 Renal Insufficiency in the Setting of an Acute Coronary Syndrome Is Associated With a Marked Increase in Death and Myocardial Infarction at 30 days

Mohammed Ghanamah, Joel P. Reginelli, Herbert D. Aronow, Arman T. Askari, Derek P. Chew, Deepak L. Bhatt, The Cleveland Clinic Foundation, Cleveland, OH

Background: Renal insufficiency (RI) is an established predictor of long-term outcome in patients with coronary artery disease. The impact of RI on *short-term* outcomes following hospitalization for an acute coronary syndrome (ACS) remains unknown. We sought to investigate whether RI at the time of presentation with an ACS predicted clinical events at 30 days. **Methods:** Using an interventional registry database, 504 patients presenting with an ACS were grouped into one of four categories based on creatinine clearance (CrCl) in ml/min: >90, 60-90, 30-60, and <30. Patient outcomes were recorded at 30 days and 1 year. **Results:** Using a test of trend and homogeneity, we observed an exponential rise in the risk of death and MI at 30 days for each decrement in renal function (X^2=32, p<0.00001)(graph). Patients were then divided into two groups classified as normal (CrCl>60) or RI (CrCl<60). When compared to normals, patients with renal insufficiency suffered a 5-fold excess of death or MI at 30 days (OR 5.23[C.I.=2.57-10.66], p<0.00001). **Conclusion:** The prevalence of RI (defined as CrCl<60) was 28% in this ACS population, and conferred a 5-fold increased risk of death and MI at 30 days. The prevalence and impact of RI is therefore equal to, or greater than, many of the commonly utilized biomarkersfor risk assessment in ACS. This suggests that the presence of RI should weigh heavily in the overall risk assessment of ACS patients.



1146-110 Blinded Adjudication of Reinfarction Following Fibrinolysis: Data From the HERO-2 Trial

John K. French, John J. Edmond, Philip E. Aylward, Cheuk-Kit Wong, Ralph A. Stewart, Barbara F. Williams, Ivor L. Gerber, Carmine DePasquale, Rachel O'Connell, John Simes, Harvey D. White, for the HERO-2 Investigators, Green Lane Hospital, Auckland, New Zealand, Flinders Medical Centre, Adelaide, Australia

Background: Re-infarction (reMI) is associated with worse outcomes following fibrinolytic therapy and is increasingly a component of the primary endpoint in clinical trials. In 2001, 3 large clinical trials reported that reMI was reduced in patients receiving the experimental reperfusion and adjunctive therapies. In HERO-2, which randomized patients to receive either intravenous heparin or bivalirudin prior to streptokinase, reMI was adjudicated by a Clinical Endpoints Committee (CEC) and we report the results of reMI adjudication. **Methods:** Adjudication was performed on data collected by investigators according to the following pre-defined criteria: i) <18 hours from randomization (≥30min chest pain and ≥1mV ST elevation in 2 leads), ii) 18 hours from randomization (CK level >2x upper limit of normal (ULN)or CKMB >ULN and >50% above prior baseline, iii) in association with percutaneous intervention (CK or CKMB levels >3x ULN) or iv) surgical revascularization (CK or CKMB levels >5x ULN); also in ii-iv new LBBB or new Q waves. **Results:** Of 722 cases referred for CEC adjudication of reMI, 170 cases (24%) reMI was not confirmed for the following reasons: 57 (34%) sufficient data available for CEC to determine "no reMI"; 43 (25%) lack of data supplied to confirm reMI; 19 (11%) recurrent ST elevation at >18 hours but reperfusion therapy (6 PCI) and no CK/CKMB elevation; 16 (9%) died prior to possible CK/CKMB level elevations; and 35 (20%) had a CEC-adjudicated non-ischemic etiology. 30-day mortalities for adjudicated, investigator-reported reMIs, and no reMI were 24%, 27% and 10% (p<0.001) and mortalities for adjudicated reMIs at <96 hours, >96 hours were 28%, and 19% (p<0.04). Rates of reMI differed across 5 regions at (predefined) 96 hours (highest Western Countries 3.2%, lowest Eastern Europe 1.5% p<0.001), partly reflecting different rates of reMI at <18 hours (highest Asia 1.1%, lowest Russia 0.23%; p<0.001). **Conclusion:** Despite prespecified criteria for investigators, 24% of cases were adjudicated "no reMI" by the CEC. ReMI varied markedly by region, especially at <96 hours compared to later than this time after randomization, and reMI mortality varied over these time periods.

1146-111 Bivalirudin Versus Heparin for Patients With Thrombocytopenia

Timothy D. Henry, Jay H. Traverse, Derek P. Chew, Minneapolis Heart Institute Foundation, Minneapolis, MN, Flinders Medical Center, Australia

Background: Patients (Pts) who develop thrombocytopenia (tcp) associated with heparin or IIb/IIa inhibitors have increased risk of bleeding events as well as myocardial infarction (MI) and death (Circ1999). Pts with relative tcp at baseline are at higher risk to develop significant tcp. In a consecutive series, 15.6% of pts with MI had a platelet (plt) count of <150,000 at presentation, increased bleeding and ischemic complications compared to pts with normal plt counts. Bivalirudin, a direct thrombin inhibitor that does not cause tcp, has been shown to decrease bleeding and ischemic complications compared to heparin during PCI. Methods: We compared the outcome of pts with relative tcp in 1,425 pts treated with bivalirudin vs. heparin during PCI. From a database of 4,783 pts enrolled in 5 trials of bivalirudin vs. heparin in conjunction with PCI, 238 (5%) pts had a plt count <150,000 and 1,425 (29.8%) had a plt count <200,000 at the time of the PCI. Pts treated with bivalirudin had lower incidence of death, MI, revascularization, or major hemorrhage (see table). Conclusions: Relative tcp (<200,000) is relatively common even for pts enrolled in randomized clinical trials. Pts treated wtih bivalirudin had significantly lower incidence of death, MI, revascularization, or major hemorrhage. The overall outcome and magnitude of benefit with bivalirudin were similar to pts with a plt count >200,000 at baseline. Relative tcp does not appear to be a risk factor for adverse outcome among pts treated with bivalirudin.

Event	Bivalirudin (n=745)	Heparin (n=680)	OR	95% CI
Death, MI, Revascularization or Major Hemorrhage	47 (6.3%)	72 (10.6%)	0.57	0.39, 0.83
Death or MI	22 (3.0%)	30 (4.4%)	0.66	0.38, 1.15
Revascularization	14 (1.9%)	18 (2.6%)	0.70	0.35, 1.43
Major Hemorrhage	19 (2.6%)	37 (5.4%)	0.45	0.26, 0.80

1146-112 Gender-Specific Risk Factors for Thromboembolic Stroke With Acute Myocardial Infarction

Eric Van De Graaff, Eric A. Shry, Paul D. Frederick, Nathan Every, Mary Blaney, Morris Cheeks, Steven R. Steinhubl, Wright Patterson Medical Center, Dayton, OH, Ovation Research Group, Highland Park, IL

Background: Risk factors for nonhemorrhagic cerebrovascular accidents (NHCVA) in the setting of myocardial infarction (MI) have been described. To date no study has evaluated gender-specific risk factors for NHCVA. Methods: Analysis of the National Registry of Myocardial Infarction (NRMI) 3/4 databases shows that women are 64% more likely to suffer NHCVA with MI than are men. This difference persists despite controlling for 27 variables using a multivariate model (OR for women vs. men 1.431, 95% CI 1.285-1.593). We analyzed records of 257,637 male and 197,865 female patients with MI found in the NRMI 3/4 databases. Of these 997 males (0.388%) and 1250 females (0.636%) suffered NHCVA. Females with NHCVA were significantly more likely to be older, have a