IIb/IIIa Inhibitor in Bypass Graft PCI Linked to MIs

BY MITCHEL L. ZOLER
Philadelphia Bureau

PONTE VEDRA BEACH, FLA. — Administration of an antiplatelet IIb/IIIa drug to patients undergoing percutaneous coronary intervention for bypass-graft stenosis significantly boosted the incidence of myocardial infarctions in a registry with more than 34,000 patients.

Use of a IIb/IIIa inhibitor was associated with a significant 63% increase in MIs after PCI, but in-hospital mortality was not significantly higher with this class of drug.

The study used data collected in the American College of Cardiology National Cardiovascular Data Registry, which included more than 448,000 percutaneous coronary interventions (PCIs) done in the United States during 2001-2003, reported Satish K. Surabhi, M.D., at the annual meeting of the Society for Cardiovascular Angiography and Interventions.

Included in the registry were 34,720 patients who had PCI of a bypass graft. In this group, 24,279 patients (70%) were treated with a IIb/IIIa inhibitor, and 10,441 patients (30%) were not.

Following PCI, the in-hospital mortality rate was almost identical in the two subgroups of patients: a 1.4% death rate in patients who received a IIb/IIIa inhibitor and a 1.3% rate in those who did not get the drug.

In the first weeks following PCI, the incidence of myocardial infarctions was significantly higher among patients treated with a IIb/IIIA inhibitor, 2.4%, than in patients who didn't get this class of drug, 1.4%. MIs included all new ST-segment elevations, Q-wave events, left bundle branch blocks, and elevations in serum levels of creatine kinase that exceeded three times the upper limit of normal.

In a multivariate analysis that controlled for various baseline differences in demographic and clinical variables, use of a IIb/IIIa inhibitor was associated with a statistically significant 63% increased rate of MIs following PCI, said Dr. Surabhi, a private practice cardiologist in Greer, S.C.

Most patients in this registry were not treated with a distal protection device, which may have been the most important element of their management, he said. "Only 5% of these patients were treated with a distal protection device. The major factor [causing bad outcomes] seems to be distal embolization, not formation of a thrombus."

If a distal protection device or distal balloon occlusion is not used during a PCI of an aortocoronary bypass graft, then the patient should not receive a IIb/IIIa inhibitor, on the basis of the new findings, he said.

The study did not address whether it's useful to use a IIB/IIIa inhibitor to treat a patient who is undergoing a bypass graft PCI with distal protection, but Dr. Surabhi suggested that adding the drug may not help. "I personally think that in stable patients, a IIb/IIIa inhibitor is not useful." Treatment with heparin alone should provide adequate anticoagulant coverage, he added. ■

Bivalirudin Surpasses Heparin On Post-PCI Transfusion Rate

BY MITCHEL L. ZOLER
Philadelphia Bureau

WASHINGTON — Patients who received bivalirudin as their anticoagulant during percutaneous coronary intervention required fewer transfusions than did those treated with unfractionated heparin, based on a post hoc analysis of data from a study of 6,010 patients.

This effect appeared to protect against mortality during the subsequent year, Steven V. Manoukian, M.D., reported in a poster at a meeting sponsored by the Cardiovascular Research Institute at Washington Hospital Center.

"These are the first data to suggest that a difference in antithrombotic therapy can influence the transfusion rate. It is a way to reduce the risk from blood transfusions," he said while presenting the poster. Results from prior studies showed that blood transfusions are an independent predictor of mortality in patients undergoing percutaneous coronary intervention (PCI), said Dr. Manoukian, director of interventional cardiology at Emory Crawford Long Hospital in Atlanta. The current findings confirmed this and further showed that patients treated with bivalirudin (Angiomax) faced a reduced risk because the regimen led to less blood loss than did the heparin regimen.

The data were collected in the Randomized Evaluation in PCI Linking Angiomax to Reduced Clinical Events (REPLACE)-2 trial, which compared two different anticoagulant regimens in 6,010 patients undergoing PCI. The results showed that treatment with bivalirudin plus provisional treatment with a glycoprotein IIb/IIIa inhibitor was not inferior to treatment with unfractionated heparin plus planned treatment with a glycoprotein IIb/IIIa inhibitor (JAMA 2003;289:853-63). The study was funded by the Medicines Co., which markets Angiomax. Dr. Manoukian has been a speaker for the company.

Overall, 126 patients received a blood transfusion during the first 30 days following PCI. The transfusion rate in patients treated with bivalirudin was 1.7%, compared with a 2.5% rate in those treated with heparin, a statistically significant difference.

In a post hoc analysis that compared the outcomes of patients who received transfusions with those who did not, the mortality rate 30 days after PCI was 6.3% among patients who received a transfusion and 0.2% among all other patients. Six months after PCI, cumulative mortality was 10.6% among patients who received a transfusion, compared with a 1.0% rate among those who didn't. After adjustment for baseline demographic differences, patients who received a transfusion were 5.67-fold more likely to die within 6 months, compared with patients who did not receive blood. At 1 year after PCI, mortality was 13.9% in the transfusion group and 1.9% in all other patients. After adjustment, patients who received blood had a 4.26-fold higher risk of death. Another notable feature of the increased mortality risk linked with transfusions was that the disparity persisted for a year after PCI.

It's unclear why transfusions were linked with an increased death risk. It may be that giving blood to people triggers an inflammatory or thrombotic reaction, Dr. Manoukian told this newspaper. It's also possible that the need for transfusion immediately following PCI is a surrogate marker for other adverse events during PCI that lead to an increased risk of death during the subsequent year. ■

Women Are at Higher Risk for Poor Outcome After Primary PCI for MI

BY BRUCE JANCIN
Denver Bureau

ORLANDO, FLA. — Women undergoing primary angioplasty for acute MI continue to have significantly higher mortality than men, even in the contemporary era of potent antiplatelet therapy regimens and high-pressure stent deployment, according to a large and comprehensive patient series from the New York State Coronary Angioplasty Reporting System Registry.

In a cohort of 9,015 consecutive acute MI patients—29% of them women—who underwent primary percutaneous coronary intervention (PCI) in New York state during 1997-1999, unadjusted in-hospital mortality was 6.7% in women and 3.4% in men. Mean hospital length of stay was also significantly greater in the women: 7.5 days, compared with 6.0 days for men, Jeffrey S. Berger, M.D., reported at the annual meeting of the American College of Cardiology.

The composite major adverse cardiovascular event rate—comprising death, emergency coronary artery bypass surgery, catheter-site complications, need for renal dialysis, stroke, abrupt vessel closure, or stent thrombosis—was 10.0% in women, compared with 5.7% in men, added Dr. Berger of Beth Israel Medical Center, New York.

However, women as a group were at higher risk of complications related to urgent PCI than were men. They were significantly older, by a mean of nearly 7 years. They also had higher prevalences of diabetes, hypertension, and peripheral vascular disease and were more likely to have a history of stroke.

Yet even after adjusting for all of these potential confounders in a multivariate logistic regression analysis, the investigators still found that female gender remained a strong independent risk factor for adverse outcome, with an associated 42% increased relative risk of in-hospital mortality.

A major caveat regarding the state registry is that the data are nonrandomized and retrospective, so it's possible that significant differences between men and women undergoing primary PCI for MI remain uncontrolled for and unrecognized. ■

ASSENT-4 Trial Suspended: PCI Alone Found Superior

The ASSENT-4 trial, designed to test a single-bolus thrombolytic in combination with percutaneous coronary intervention for acute myocardial infarction, was suspended in April with fewer than half of the planned 4,000 patients enrolled.

The Data Safety and Monitoring Board's decision to put the Assessment of the Safety and Efficacy of a New Treatment Strategy for Acute Myocardial Infarction (ASSENT-4) trial on hold "was based on an unexpectedly superior outcome in patients randomized to the direct [percutaneous coronary intervention] only arm," according to a statement by the trial's executive committee.

To date 1,635 patients have been randomized to receive either a single bolus of Metalyse/TNKase (tenecteplase) plus unfractionated heparin followed by immediate percutaneous coronary intervention (PCI) or PCI alone. The committee noted that "the rates of death and of [intracerebral hemorrhage] in the TNK-facilitated PCI arm are consistent with prior ASSENT fibrinolytic alone studies."

The committee is currently collecting and assessing study data in order to determine the future of the investigation.

"This study shows that there is in fact a prothrombotic effect of thrombolysis. Thus, it is important to choose a particular strategy—either primary PCI or thrombolysis, but not …both," Christopher Cannon, M.D., of Brigham and Women's Hospital in Boston, and a principal investigator with the Thrombolysis in Myocardial Infarction (TIMI) study group, told this newspaper.

—Kerri Wachter