PCI Beats Repeat Thrombolysis Treatment for MI, Study Shows

BY MITCHEL L. ZOLER
Philadelphia Bureau

NEW ORLEANS — When thrombolysis fails to fully unblock the infarct-related artery of a patient with an acute myocardial infarction, percutaneous coronary intervention is the best next step, according to the results of a controlled study with 427 patients.

Up to now, some physicians have treated MI patients who failed thrombolysis with percutaneous coronary intervention (PCI) because they intuitively believed that it was the right thing to do, but there was no evidence to back it up, Anthony H. Gershlick, M.B., said at the annual scientific sessions of the American Heart Association.

About 40% of patients who are treated with thrombolysis for an acute MI fail this initial treatment and do not show full resolution of their ST-segment abnormality, said Dr. Gershlick, a cardiologist at University Hospital in Leicester, England. The results of the new study "tell us that you need to assess patients 90 minutes after thrombolysis with ECG to see if thrombolysis was successful."

"These results should have an impact on practice," commented Eric R. Bates, M.D., a professor of internal medicine at the University of Michigan in Ann Arbor. Community hospitals that use thrombolysis but lack a catheterization laboratory will need to collaborate with an angioplasty center that can treat their patients who fail thrombolysis, Dr. Bates said.

The study was done at 35 United Kingdom hospitals. Patients with an acute MI who received standard lytic therapy and aspirin underwent a repeat ECG 90 minutes after receiving their initial thrombolytic drug. (About 60% of patients received streptokinase, 27% received reteplase, and the remaining patients received other agents.) Patients with less than 50% resolution of their ST changes were randomized to one of three treatment strategies: conservative management in the hospital, repeat treatment with thrombolysis, or PCI (about 69% of the PCI-treated patients received coronary stents).

The study's primary end point was the incidence of death, repeat MI, stroke, or severe heart failure at 6 months after treatment. This end point occurred in 15% of the 144 patients treated with PCI, 30% of 141 patients treated with conservative therapy, and 31% of 142 patients treated with repeat thrombolysis, a statistically significant difference in favor of PCI. PCI led to consistent reductions in death, repeat MI, and severe heart failure. Stroke incidence was similar in all three groups.

Treatment with PCI also led to a higher rate of major bleeding events, 19%, compared with 5% in the repeat lysis group and 2% in the conservatively managed group. Of the 27 patients with major bleeds in the PCI group, 22 cases involved sheath complications during coronary catheterization. The incidence of severe complications from bleeding were similar in the three groups.

The average time from the onset of pain to when patients received their first thrombolytic treatment was 140 minutes. Patients who received a second dose of a lytic drug got it an average of 190 minutes later; patients who received PCI were treated an average of 274 minutes later, an average delay of 84 minutes beyond the thrombolytic group.

Thus, the patients treated by rescue PCI got their definitive treatment nearly 7 hours after onset of chest pain. Despite this long delay to definitive treatment, these patients still did better than the comparator groups, Dr. Gershlick said. ■

Factors ID Poststroke Cardiac Risk

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — Patients with at least two of five risk factors after a transient ischemic attack or acute ischemic stroke should be admitted to a hospital's telemetry bed, because they have a higher risk for a significant cardiac event, Peter D. Panagos, M.D., said.

A review of records on 27 patients seen after a transient ischemic attack (TIA) and 171 patients seen after an acute ischemic stroke (AIS) found that 16% developed a significant cardiac event within 48 hours of admission to the hospital, he said at the annual meeting of the American College of Emergency Physicians. A significant cardiac event consisted of ECG changes consistent with new-onset arrhythmia or ischemia, elevated heart enzymes (troponin I), or cardiac-related death.

Significant cardiac events were more likely to occur in patients with diabetes, hypertension, a current smoking habit, coronary artery disease, and/or a suspected cardioembolic stroke subtype, said Dr. Panagos of Brown University, Providence, R.I.

At his institution, if a post-TIA or post-AIS patient has two of these five risk factors, "we tend to admit these patients to telemetry beds instead of floor beds now," he said.

In the study, 16% of patients admitted for TIA or AIS had a cardiac event within 48 hours.

DR. PANAGOS

Patients without these risk factors may not need high-acuity beds, which could free up telemetry beds for those who need closer monitoring, he added.

Among all patients studied, 26% had diabetes, 70% were hypertensive, 27% were smokers, and 23% had cardiovascular disease. When the strokes were classified by subtypes, 26% were found to be cardioembolic, 32% were large-artery atherothromboembolic, 32% were small-vessel thrombotic, and 10% had other etiologies.

Demographic factors and other risk factors did not influence the risk for a significant cardiac event. Other risk factors included cerebrovascular disease (found in 35% of patients), hyperlipidemia (in 41%), atrial fibrillation (in 20%), and a family history of heart disease (in 30%). Patients in the study had a mean age of 70 years, and 55% were women.

The current study is one of the first to evaluate the short-term risk for cardiac morbidity after a TIA or AIS.

Previous studies identified a 13% risk for a recurrent TIA or stroke within 90 days of the index event.

Dr. Panagos and his coinvestigator, Alyson J. McGregor, M.D., also of Brown University, plan to review more patient records to increase the size of this relatively small study. ■

Breathing Check Improves Cardiac Arrest Detection

BY BRUCE JANCIN
Denver Bureau

NEW ORLEANS — Tweaking emergency dispatcher assessment protocols to add a few simple questions regarding agonal breathing markedly increases the rate of cardiac arrest detection over the phone, Ahamed H. Idris, M.D., reported at the annual scientific sessions of the American Heart Association.

The net result is a greater than 30% increased likelihood that CPR will be started by bystanders as a result of the 911 call, well before emergency medical services (EMS) personnel can arrive on the scene. And that in turn substantially increases the chances for survival, added Dr. Idris, professor of emergency medicine at the University of Texas, Dallas.

In a separate presentation, investigators described another novel approach to improving the rate of prompt CPR by lay rescuers in out-of-hospital cardiac arrest, this time through the use of a new, brief, self-guided CPR video instruction method for the general public that takes only one-eighth the time of the traditional 4-hour CPR group class.

Dr. Idris noted that studies from Sweden, Seattle, and Dallas have independently shown that CPR is withheld from up to 40% of people with out-of-hospital cardiac arrest because potential rescuers or 911 dispatchers misinterpret agonal breathing as an indication that the individual is not in cardiac arrest.

In fact, agonal breathing—a distinctively slow breathing pattern in which the collapsed person appears to be gasping for air—is an extremely common occurrence shortly after the respiratory center in the brainstem becomes deprived of oxygen-rich blood.

"That's the time when people are most likely to actually be saved if they receive intervention," according to Dr. Idris, a member of the AHA Emergency Cardiovascular Care Committee.

He and coworkers in an AHA-sponsored trial created a series of three simple questions to be added to emergency dispatcher protocols to better identify cardiac arrest through improved detection of agonal breathing over the phone. (See box.)

The investigators studied all 962 cases of dispatcher-assisted out-of-hospital cardiac arrest in the Dallas area during the 8 months before and 4 months after implementation of the new dispatcher protocol that includes questioning about agonal breathing. They found that, prior to the change, 28% of all cardiac arrests were missed, as confirmed upon subsequent arrival of EMS personnel, compared with 18.8% after the protocol change.

That's a 32% reduction in missed cases—and in the months after completion of the formal study, as emergency dispatchers grew more experienced in identifying agonal breathing, the percentage of missed cardiac arrests dropped even further, Dr. Idris said.

Cardiac Arrest Questionnaire

► Is the person awake and conscious?
► Is the person breathing normally? Count the breaths and describe what they sound like. (An interval of 10 or more seconds between breaths is a marker for agonal breathing and an indication to start CPR.)
► Is the person moving?

In a separate presentation, Bonnie C. Lynch, Ph.D., said that middle-aged adults are the individuals most likely to witness a cardiac arrest, yet they are seriously underrepresented in the standard 4-hour CPR Heartsaver training classes, which tend to attract a younger crowd.

The AHA has set an ambitious goal of training 20 million people per year and is now training 9 million. To train more members of the general public in CPR, the AHA commissioned the development of a 30-minute CPR self-training kit designed for home or work settings.

The kit was tested in a randomized controlled trial in 285 Portland, Ore. area 40- to 70-year-olds. Three-fifths used the kit, one-fifth took the standard 4-hour CPR course, and the remainder received no training.

CPR skills testing by blinded evaluators immediately after the training demonstrated that the kit users were as skilled as those who had completed the standard class. When skills retention was tested 2 months later, the two groups remained closely comparable, said Dr. Lynch of RMC Research Corp., Portland.

The kit should be commercially available by midyear. ■