Even Late Reperfusion Preserves Myocardium

BY BRUCE JANCIN
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ORLANDO, FLA. — Prompt percutaneous intervention in acute MI patients who present more than 12 hours after onset of chest pain and are no longer symptomatic results in significantly reduced final infarct size, compared with standard medical management, according to the findings of the first randomized trial of an acute invasive strategy in such patients.

These late presenters make up roughly 20% of all acute MI patients. Current American College of Cardiology/American Heart Association guidelines don't recommend mechanical or fibrinolytic reperfusion in late presenters unless they show up with a stuttering course and persistent pain. But the guidelines ought to be changed in light of this new evidence supporting the benefit of mechanical reperfusion in asymptomatic patients—even when applied late, Adnan Kastrati, M.D., said at the annual meeting of the American College of Cardiology.

'I don't routinely get out of bed at 2 in the morning to do angioplasty in patients who are 36 hours into their infarct and totally asymptomatic.'

He presented the results of the Beyond 12 Hours Reperfusion Alternative Evaluation (BRAVE-2) trial. The study involved 365 acute MI patients who had become asymptomatic by the time they presented 12-48 hours after onset of chest pain. Participants were randomized to prompt percutaneous intervention or standard medical therapy at 16 medical centers in Germany, Italy, and Austria.

The primary end point in BRAVE-2 was infarct size as determined by technetium-99m sestamibi scintigraphy 5-10 days post-randomization. The scans showed the infarct involved a mean 8% of the left ventricle in patients who underwent mechanical reperfusion, significantly less than the 13% in those managed medically, said Dr. Kastrati of the German Heart Center, Munich.

The secondary study end point, the 30-day combined rate of all-cause mortality or recurrent MI, was 4% in the invasive group and 6% in those managed conservatively, a nonsignificant difference. The disparity in the 30-day incidence of unplanned percutaneous intervention was far more dramatic: 1% in the invasive group vs. 33% in those managed conservatively.

Cindy L. Grines, M.D., a member of the task force responsible for the ACC/AHA guidelines for management of acute MI, said the reason for the recommendation that reperfusion therapy generally be given only within 12 hours of symptom onset is the persuasive evidence from fibrinolytic clinical trials that the benefit drops off sharply when this therapy is applied more than a few hours after MI onset. The same phenomenon has been shown in animal studies.

However, BRAVE-2 shows a "pretty striking" reduction in infarct size, and it's certainly plausible that late restoration of high-grade coronary blood flow—readily achievable with mechanical reperfusion but not with thrombolytic therapy—might revive hibernating myocardium as one potential explanation for this benefit, said Dr. Grines of William Beaumont Hospital in Royal Oak, Mich.

Before the guidelines are changed, however, it will be important to see a confirmatory study, preferably one that addresses the question of whether all asymptomatic late presenters ought to go to the catheterization laboratory, or just those who have larger infarcts.

Another key question concerns how quickly these late presenters need to undergo mechanical reperfusion.

Noting that the mean time from randomization to coronary angiography in BRAVE-2 was a mere 1.5 hours, Dr. Grines commented, "I don't know about you, but I don't routinely get out of bed at 2 in the morning to do angioplasty in patients who are 36 hours into their infarct and totally asymptomatic.

"It would be nice to have some additional information from trials as to which patients are likely to benefit with a reduction in infarct size."

BRAVE-2 was funded by the German Heart Center, Lilly Deutschland, and Guidant. ■

Gender Differences Persist in Post-MI Treatment, Survival

BY SHARON WORCESTER
Tallahassee Bureau

ORLANDO, FLA. — Women presenting with myocardial infarction continue to receive less intensive treatment and have higher mortality than men with similar presentations, but the gender gap in medical interventions prescribed at hospital discharge may be narrowing, according to studies presented at an international conference on women, heart disease, and stroke.

One retrospective study included nearly 26,700 Swedish patients who were treated for ST-elevation MI (STEMI) at cardiac intensive care units during 1997-2001. Reperfusion therapy was administered to 71% of the 17,243 men in the study, compared with 62% of the 9,455 women in the study, Sofia Sederholm Lavesson, M.D., reported.

Men, compared with women, had lower in-hospital mortality (9% vs. 16%), 30-day mortality (11% vs. 18%), and 1-year mortality (16% vs. 25%), said Dr. Lavesson of Linköping (Sweden) University.

After adjusting for numerous confounding factors, women remained significantly less likely than men to receive reperfusion therapy (odds ratio 0.83) and to survive while in the hospital (OR 1.23), she said, noting that the differences between men and women cannot be fully explained by differences in age and comorbidities. "[Greater] age is the main explanation for the higher mortality in women, but less intensive treatment also appears to contribute."

A similar conclusion was reached in a study of more than 55,000 patients who were admitted to any of 153 different hospitals with a primary diagnosis of Q-wave acute MI during January 2000 to June 2004.

Mortality was 13% in the 19,034 women in the study, compared with 7% in the 35,969 men. After adjusting for 24 variables, including age, various comorbidities, and type of hospital providing the treatment (heart surgery hospital, cath lab hospital, and hospital with no heart surgery or cath lab), men were shown to be less likely than women to die (OR 0.71). Additionally, men were more likely than women to be transferred for further treatment (OR 1.24), receive thrombolytics (OR 1.16), receive percutaneous coronary intervention (OR 1.12), and/or receive coronary artery bypass grafting (OR 1.64), Allan L. Anderson, M.D., of the Medical City Dallas Hospital, reported.

"Women with Q-wave acute MI continue to have significantly worse mortality rates and receive less revascularization than men," he concluded, noting that additional research is needed to determine how women with MI can obtain clinical parity with men.

But such parity is being achieved when it comes to the prescribing of medical interventions at hospital discharge in patients who present with heart attack or chest pain, a third study suggests.

That ongoing study showed such men and women are being prescribed appropriate drug interventions at the about the same frequency. The subanalysis of a National Institutes of Health–funded study of 177 men and 35 women with acute coronary syndrome showed that women were prescribed aspirin, β-blockers, and statins as frequently as men, however, it also showed that 10% of women with acute coronary syndrome didn't receive aspirin or β-blockers and that more than 30% didn't receive statins, Shu-Fen Wung, Ph.D., and Heather Hiscox of the University of Arizona, Tucson, reported in a poster.

Also, women in this study lived significantly longer than men following their hospitalization (179 days vs. 156 days), with both age and gender showing a significant association with 6-month survival, the investigators noted.

The findings suggest that more people are following the guidelines of the American Heart Association and American College of Cardiology, and that progress is being made in the treatment of both men and women, Dr. Wung said in a statement. ■

Right Ventricular Dysfunction After Heart Attack Linked to Bad Outcomes

NEW ORLEANS — Patients with severe right ventricular dysfunction following a myocardial infarction had a substantially increased risk of adverse cardiovascular events in an analysis of 522 patients.

"Reduced right ventricular systolic function should be considered a major risk factor" for death, heart failure, stroke, and sudden death following a myocardial infarction, Nagesh S. Anavekar, M.D., said while presenting a poster at the annual scientific sessions of the American Heart Association.

His study used data collected in the Valsartan in Acute Myocardial Infarction Trial (VALIANT), a study that randomized nearly 10,000 acute MI patients to treatment with either valsartan or captopril. The study showed that these two drugs had similar efficacy for reducing cardiac events. The new analysis focused on a subset of 610 patients who underwent two-dimensional echocardiography an average of 5 days following their MIs.

For 522 of these patients, the images collected during echo were good enough to allow Dr. Anavekar and his associates to quantify right ventricular function using the apical, four-chamber view. They calculated the right ventricular fractional area change for each of these patients based on the percent change in right ventricular cavity area from end diastole to end systole. The mean right ventricular fractional area change for all 522 patients was 42%.

The incidence of all-cause death, cardiovascular death, repeat MI, heart failure, stroke, and sudden death was tallied during an average follow-up of about 2 years. There was a strong, inverse correlation between the rate of all of these events except repeat MI and the change in right ventricular fractional area.

In an analysis that controlled for 26 potential confounders, including age, left ventricular ejection fraction, Killip class, and treatment, every 5% drop in right ventricular fractional area change at baseline was associated with a 70% increase in the combined rate of fatal and nonfatal cardiovascular events, said Dr. Anavekar of the cardiovascular division of Brigham and Women's Hospital, Boston. The association was statistically significant.

—Mitchel L. Zoler