Poor Post-MI Outcomes in Women Tied to Depression

BY MITCHEL L. ZOLER
Philadelphia Bureau

ORLANDO — The higher incidence of depression after a myocardial infarction in women, compared with men, contributes to the worse outcomes that women face, according to data from a study with more than 2,400 patients.

"The clinical implication is that it's important to identify and treat symptoms of depression at the time of hospitalization for myocardial infarction," Dr. Susmita Parashar said at a conference on cardiovascular disease epidemiology and prevention sponsored by the American Heart Association.

These steps are reasonable, even though studies are still needed to test whether treating depression after an MI improves the cardiovascular outcomes of both women and men, said Dr. Parashar, a physician and epidemiologist at Emory University, Atlanta.

She and her associates used data collected on 2,411 acute MI patients in the Prospective Registry Evaluating Myocardial Infarction Events and Recovery (PREMIER) study. Data were collected at 17 U.S. centers between January 2003 and June 2004. Patients with a documented MI were assessed for depression during their initial hospitalization and at follow-up with the Patients Health Questionnaire (PHQ).

During initial hospitalization, 29% of 752 women in the registry were diagnosed with depression by the PHQ, compared with 19% of 1,531 men, a significant difference. (Data on depression diagnosis were not available for all patients in the registry.)

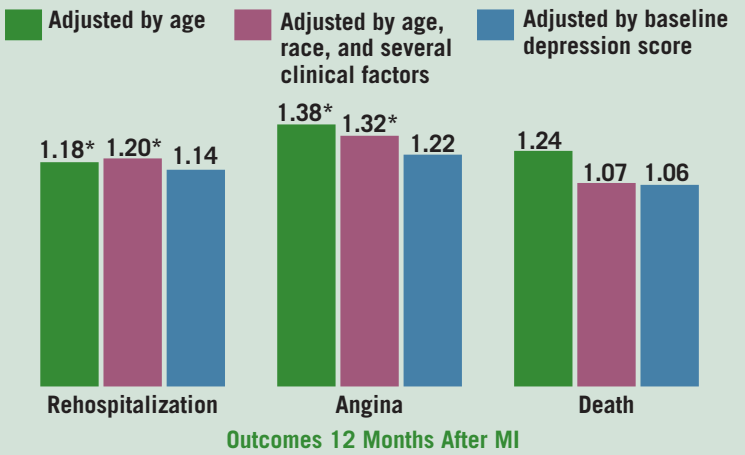
In an analysis that adjusted for age at baseline, women were 18% more likely than men to need rehospitalization during 12 months of follow-up, a significant difference. In a second analysis that adjusted for age, race, and clinical factors at baseline including diabetes, hypertension, lung disease, and smoking history, women were 20% more likely than men to be hospitalized during follow-up.

But when the analysis adjusted for baseline differences in the PHQ score, the resulting 14% difference in hospitalization rate between men and women was no longer statistically significant, which suggested that baseline depression scores had played a role in the subsequent rates of hospitalization.

A similar pattern was seen for the role of depression in the incidence of angina during follow-up. (See box.) But no analysis found a significant difference in the mortality of men and women during follow-up.

Other findings from the registry showed women were more likely than men to be treated for depression, but adjusting for the use of antidepression treatment had no impact on the gender difference in rates of rehospitalization or angina. Depression after an MI also was about fourfold more common in women younger than 60 years, compared with older women, Dr. Parashar said. ■

Hazard Ratios for Women vs. Men for Impact of Depression on Myocardial Infarction Outcomes



*Statistically significant.
Notes: Based on data from 2,411 acute MI patients in the PREMIER study. Clinical factors include diabetes, hypertension, lung disease, and smoking history.
Source: Dr. Parashar

ELSEVIER GLOBAL MEDICAL NEWS

Diesel Exhaust Triggers Myocardial Ischemia

BY BRUCE JANCIN
Denver Bureau

NEW ORLEANS — Brief inhalation of dilute diesel exhaust at levels comparable to those encountered curbside along city streets promotes myocardial ischemia in patients with coronary heart disease, Dr. David E. Newby reported at the annual meeting of the American College of Cardiology.

He presented the first-ever study in which patients with known CHD were deliberately exposed to air pollution. The purpose was to pinpoint the mechanisms underlying the well-established epidemiologic association between air pollution and increased cardiovascular morbidity and mortality.

"Not everybody believes that air pollution is linked to cardiovascular disease, particularly pressure groups backed by the automobile industry. So we felt it was very important to show what the mechanisms are," explained Dr. Newby, professor of cardiology at the University of Edinburgh.

He and his coinvestigators in Edinburgh and at Umeå (Sweden) University briefly exposed 20 Swedish patients with prior MI to either dilute diesel exhaust at a concentration of 300 mcg/m^3 or to filtered air during intervals of moderate exercise or rest in a double-blind crossover study conducted in a special chamber. All patients had stable CHD, having previously undergone coronary revascularization. All were on standard evidence-based medications for secondary prevention.

Exposure to diesel exhaust caused a threefold increase in the magnitude of exercise-induced ST-segment depression: a mean 49 mcV of ST depression, compared with 17 mcV of ST depression while breathing filtered air during exercise.

In addition, blood levels of tissue plasminogen activator—a potent endogenous clot dissolver—declined significantly after patients were exposed to diesel exhaust, providing a second specific mechanism to explain the oft-described link between air pollution and cardiovascular events.

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Nearly 1 million deaths per year may be due to inhalation of polluted air.

In a prior study conducted in healthy volunteers, Dr. Newby and colleagues showed that brief exposure to real-world levels of diesel exhaust caused impairment of arterial vasodilation.

Dr. Newby noted that the World Health Organization has estimated that nearly 1 million deaths per year are attributable to inhalation of polluted air.

His study was funded by the British Heart Foundation. ■

Depression Lowers Adherence to Cardiac Rehab Programs

BY JEFF EVANS
Senior Writer

WASHINGTON — Depressed or anxious patients who are referred to cardiac rehabilitation programs are significantly more likely to comply poorly or have a poorer outcome than are patients without the conditions, Angele McGrady, Ph.D., reported at the annual meeting of the Society of Behavioral Medicine.

Because of this, patients who are referred to cardiac rehabilitation programs "need to be quickly screened for depression and anxiety prior to entering rehabilitation," said Dr. McGrady, professor of psychiatry at the University of Toledo (Ohio).

Depression is a known risk factor for the development and worsening of coronary heart disease (Psychosom. Med. 2005;67[suppl. 1]:S19-25). Anxiety also may be a risk factor for CHD. Recent research has associated high levels of phobic anxiety with an increased risk of a fatal cardiac event (Circulation 2005;111:480-7).

At the University of Toledo Medical Center, patients who have angina or chronic heart failure, or who have had a myocardial infarction or coronary artery bypass graft (CABG), are referred to the cardiac rehabilitation program. Such programs are known to be effective in reducing mortality. But in order for patients to benefit, they must complete the full program of exercise, stress management, and nutritional counseling, Dr. McGrady said.

In the rehabilitation program, patients are first psychologically assessed using the Beck Depression Inventory, the Beck Anxiety Inventory, and the SF-36 quality of life measure. A week later, patients come back for a walk test (number of feet walked in a certain period of time).

Over the next 6 months, the patients attend 36 sessions that are largely exercise based; these sessions also include stress management, smoking cessation, and lifestyle counseling, such as nutritional assessment and recommendations for improving nutrition. At the end of 6 months, psychological and physical tests are repeated.

Of 380 consecutive patients who were referred to the medical center over a period of about 2 years, exactly half completed the full rehabilitation program. Other centers have reported dropout rates at cardiac rehabilitation centers ranging from 20% to 65%, she said.

The overall sample had an average age of 61 years; most patients were males (63%) and white (79%).

On entry into the rehabilitation program, the 190 patients who completed the program had a significantly lower mean Beck Depression Inventory score than did the 190 noncompleters (8.6 vs. 11.7). The completers also reported a significantly higher initial quality of life than did noncompleters in physical (39.2 vs. 35.7) and mental health (47.6 vs. 43.4).

Beck Anxiety Inventory scores were significantly lower among the completers than in a group of 68 early dropout patients who did not return at week 2 for the walk test and did not begin the program. This means that the only chance to catch the nearly 20% of patients who dropped out early, before even starting the actual rehabilitation process, was at the time of the psychological assessment. ■

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