Follow-up rehabilitation boosts survival odds for angioplasty patients

May 16 2011

Patients who undergo a procedure to unblock a coronary artery are more likely to survive longer if they participate in structured follow-up care, according to research in *Circulation: Journal of the American Heart Association.*

In their 14-year analysis, researchers discovered a 46 percent relative reduction in death from all causes in patients who participated in cardiac rehabilitation following angioplasty.

The study focused on patients treated with percutaneous coronary interventions (PCI), commonly known as angioplasty. Using data from a Mayo Clinic registry of PCI patients, along with telephone follow-up, the researchers examined outcomes for almost 2,400 patients who underwent a first PCI in the Rochester, Minn., area from 1994 to 2008, and survived their hospital stay.

In PCI, a physician inflates a balloon on a catheter tip to flatten plaque in the artery against the vessel wall. In many cases, they also insert a stent (metal-mesh tube) to prop the vessel open.

Forty-percent of the patients had participated in at least one session of a cardiac rehabilitation program, and participants attended an average of 13.5 sessions. Such programs can boost survival rates after heart attacks and systematically provide lifestyle interventions and treatments to improve recovery and long-term health of heart patients.

"Our findings show that patients who participate in cardiac rehabilitation following PCI have better long-term survival — about 50 percent better — than those who don't participate in cardiac rehabilitation," said Randal Thomas, M.D., M.S., lead author of the study and director of the Mayo Clinic's Cardiovascular Health Clinic in Rochester, Minn.

The results accounted for smoking status, obesity, high cholesterol, family history, and certain medical conditions that might affect life expectancy, such as heart failure, kidney disease, or diabetes. The researchers noted a difference in death rates starting at one year of follow-up. Improved outcomes were among men and women, older and younger patients, and in patients who had undergone elective or non-elective PCI.

Almost 400 patients had subsequent heart attacks and 755 had additional procedures to open blocked vessels. In all, 503 patients died during follow-up; 199 of the deaths were validated as being cardiac-related.

Physicians and patients should understand that PCI is an important treatment, but not a cure for heart disease, and that ongoing interventions after PCI can help patients live longer, healthier lives, Thomas said. Cardiac rehabilitation programs include patient education, monitored and personalized exercise training, nutrition counseling, smoking cessation support, weight control therapy, and medical evaluations to track patient progress, symptoms, medication side effects and medication adherence.

"Cardiac rehabilitation programs are effective at improving recovery, quality of life and long-term survival because they help deliver the lifestyle and medication therapies that have been shown to slow or even reverse the process of heart disease," Thomas said.

Because the study was observational rather than randomized, researchers

used three statistical techniques to account for factors that might bias their results. For example, younger, healthier, more motivated patients who were already more likely to live longer were also more likely to participate in cardiac rehabilitation.

Although the study population was predominantly white, the results are consistent with other studies of cardiac rehabilitation in other patient subgroups with cardiovascular disease that have included larger groups of non-white patients, Thomas said. He said the study results should be further validated in other patient populations.

More than 600,000 PCI procedures are performed in the United States annually, according to the American Heart Association.

Cardiac rehabilitation is recommended in the 2005 American College of Cardiology/American Heart Association/Society for Cardiovascular Angiography and Interventions Guideline Update for PCI. But only about one-quarter of eligible U.S. patients participate, the researchers said. Gains in long-term survival would be substantial if all eligible PCI patients received cardiac rehabilitation, Thomas said.

Even in the unlikely event that the study results overestimate the true impact of cardiac rehabilitation and such services reduced deaths within five years by only 20 percent to 30 percent (instead of 46 percent, as found in the study), its impact on survival would still be substantial for patients after PCI, he said.

Most insurance companies cover up to 36 sessions of cardiac rehabilitation following PCI, heart attack and some other heart conditions. Medicare, which approved coverage of the programs for PCI patients beginning in 2006, typically covers 80 percent of the costs.

Participation by patients following PCI appears to have increased since

the Medicare change in 2006, although Thomas said many doctors and patients still remain unaware that coverage for cardiac rehabilitation is available following PCI.

Provided by American Heart Association