Exercise Training Safe, Beneficial for Heart Failure Patients

BY CAROLINE HELWICK
Contributing Writer

NEW ORLEANS — In the largest study of exercise training as part of the management of heart failure to date, a guided exercise program was safe and moderately effective, although investigators acknowledged that patients found it hard to keep up the routine.

"The safety of exercise training in heart failure patients, outside of a supervised environment, has been a concern, but this study proved benefits could be obtained without excess risk," said Dr. Christopher M. O’Connor, presenting results of the Heart Failure and A Controlled Trial Investigating Outcomes of Exercise Training (HF-ACCT) trial at the annual scientific sessions of the American Heart Association.

"Over 30 randomized trials have shown increased exercise capacity and possibly improved survival with exercise training, but these were largely single-center studies that were underpowered or lacked adequate controls and produced limited data on safety," he noted at a press conference.

HF-ACTION, a randomized, phase III trial sponsored by the National Heart, Lung, and Blood Institute, followed 2,331 heart failure patients at different international sites for an average of 2.5 years. The relatively young population, median age 59 years, had an average left ventricular ejection fraction (LVEF) of 25%, indicating moderate HF. History of coronary occlusion and prior myocardial infarction was common.

Patients were randomized to an exercise training program aimed at increasing workload intensity and duration or to usual care, where they were encouraged to exercise, based on the American College of Cardiology/AHA recommendations of 30 minutes of moderate exercise most days of the week. Both groups received optimal medical treatment, patient education, and follow-up phone calls.

The exercise training followed the cardiac rehabilitation model. Patients were prescribed a multistage, guided workout of 36 supervised training sessions of 30 minutes of exercise three times a week. At the 18th session, patients received a treadmill or exercise bicycle for home use, learned how to monitor their heart rate during exercise, and were encouraged to complete five weekly sessions of similar intensity and 40 minutes’ duration.

At 4-6 weeks, patients were exercising a median of 95 minutes per week, a little short of the goal of 120 minutes. This was consistent for the first year and then diminished further, reported Dr. O’Connor, professor of medicine and director of the heart center at Duke University Medical Center, Durham, N.C.

"The diminished adherence is not surprising, he said, because "lifestyle intervention trials are difficult to complete." He noted that 9% experienced a non severe adverse event such as a drug trial, for example, 85% of patients would still be on the drug. Here, after 3 years people were exercising for about 50 minutes. We had wanted them to exercise for 120 minutes. So adherence is extremely difficult.

"Exercise training was not associated with a significant reduction in the primary end point, all-cause mortality and hospitalization. Adjusted for heart failure etiology, this group experienced a 7% relative risk reduction that was not statistically significant. Secondary composite end points also failed to reach significance: cardiovascular (CV) mortality plus hospitalization was reduced by 8%, and CV mortality plus HF hospitalization was reduced by 13%, Dr. O’Connor reported.

However, improvements in outcomes emerged in the prespecified adjusted analysis that accounted for additional key prognostic variables related to heart failure outcomes. These included exercise duration, LVEF, Beck Depression Inventory score, and history of atrial fibrillation/flutter.

In the adjusted analysis, the primary end point was significantly reduced by 11%, and CV mortality plus heart failure hospitalization was significantly reduced by 15%. The reduction in CV mortality plus HF hospitalization was a nonsignificant 8%.

The prespecified adjusted analysis is a fair analysis of these data and is probably closer to the truth," he said. "When exercise emanates from a structured rehab program, it quadruples adherence.

"The study found no excess risk for CV events or fractures with intense exercise. "Perhaps the most important finding is that exercise training of this degree was safe," Dr. O’Connor added. "There was no increase in CV events or fractures with intense exercise.

The improvements in outcomes were obtained in a setting of excellent overall cardiac care, he added, as more than 90% of patients received evidence-based medical therapy for their disease. "We achieved an 11%-15% meaningful reduction in clinical end points above that, with a safe intervention," he emphasized.

"The study missed the primary end point, and some would say that’s the end of it. But that would be wrong," said Dr. Poole-Wilson, professor of medicine at the Imperial College London. "After adjustments, it met many end points, and this means it was a positive trial. The study supports the use of exercise and will strengthen guidelines for the treatment of heart failure, which has wide implications."

Dr. Clyde Yancy spoke to the financial implications of the study in an interview. He pointed out that the paradigm for exercise has long been established in the form of the cardiac rehabilitation model in which patients enroll in a program over 9-12 weeks to define a new lifestyle," he said. "When exercise emanates from a structured rehab program, it quadruples adherence.

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