Exercise Lowers Risk of Death in HF Patients

BY BRUCE JANCIN

ORLANDO — Heart failure patients who engage in aerobic activity can lower their risk of all-cause mortality or hospitalization, according to a new secondary analysis of data from a major National Heart, Lung, and Blood Institute–sponsored randomized trial.

"It appears that only a modest amount or dose of exercise is needed to potentially improve risk," Dr. Steven J. Keteyian said in presenting findings from Heart Failure: A Controlled Trial Investigating Outcomes of Exercise Training (HF-ACTION) at the annual meeting of the American College of Cardiology.

Each 1-metabolic-equivalent-task-hour/week increase in exercise volume in heart failure patients was associated with an additional 5% reduction in risk of all-cause mortality or hospitalization. The same 1-MET-hour/week increase in exercise volume also was associated with an 11% reduction in the combined secondary end point of cardiovascular death or heart failure hospitalization over a median 2.5-year follow-up. It also conferred a 4.2-meter increase in 6-minute walk distance, a 0.18 mL/kg per minute increase in peak VO_2, and a 0.74-point rise in Kansas City Cardiomyopathy Questionnaire score at 3 months, reported Dr. Keteyian, director of the preventive cardiology program at Henry Ford Hospital, Detroit.

The MET-hour/week measure reflects exercise intensity multiplied by duration. For example, a patient who walks at 2 mph for 30 minutes three times per week—a typical regimen in cardiac rehabilitation programs—engages in 3.8 MET-hours/week. If that patient works up to a 40-minute walk at 3 mph five times weekly, that's 9.9 MET-hours/week, which translates to an estimated further 30% reduction in the risk of all-cause mortality or hospitalization.

HF-ACTION involved 2,331 patients with New York Heart Association class II-IV stable systolic heart failure and an ejection fraction of 35% or less, randomized to usual care or an aerobic exercise intervention. The program entailed 12 weeks of thrice-weekly 30-minute supervised group exercise sessions at 60%-70% of heart rate reserve, followed by a home program of 40 minutes of exercise at the same intensity five times per week.

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The recently published main results showed a modest 11% reduction in the adjusted relative risk of all-cause mortality or hospitalization in the exercise group (JAMA 2009;301:1439-50). Because adherence to the prescribed exercise regimen varied widely, the researchers performed a new dose-response analysis restricted to patients free of death or hospitalization in the first 90 days of the study, reasoning that if exercise had any effects on clinical outcomes, they would not begin to appear until after that point.

The new findings help quantify the benefits of aerobic exercise as a management tool in patients with systolic heart failure, according to Dr. Keteyian.

Discussant Marvin A. Konstam was skeptical,because HF-ACTION did not randomize patients to different exercise doses. "When you define subgroups essentially based upon postrandomization events, you really are losing the value of the randomization process," said Dr. Konstam, professor of medicine at Tufts Medical Center, Boston. Indeed, it could be argued that the new analysis does not define a dose-response, but simply shows that patients who can exercise more will have better outcomes, he continued.

Dr. Keteyian conceded that limitation but asserted that "the signal is there."

Discussant Karl Swedborg observed that although HF-ACTION has many potential confounders, it shows the safety of aerobic exercise in heart failure. That constitutes a major shift in treatment, said Dr. Swedborg, professor of cardiology at Sahlgrenska University Hospital, Goteborg, Sweden. ■