Exercise, diet improves ability to exercise for patients with common type of heart failure

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Among obese older patients with a common type of heart failure, calorie restriction or aerobic exercise training improved their ability to exercise without experiencing shortness of breath, although neither intervention had a significant effect on a measure of quality of life, according to a study in the January 5 issue of *JAMA*.

Heart failure with preserved ejection fraction (a measure of how well the left ventricle of the heart pumps with each contraction) is the most rapidly increasing form of heart failure, occurs primarily in older women, and is associated with high rates of illness, death, and health care expenditures. More than 80 percent of patients with heart failure with preserved ejection fraction (HFPEF) are overweight or obese. Exercise intolerance is the primary symptom of chronic HFPEF and a major determinant of reduced quality of life (QOL).

Dalane W. Kitzman, M.D., of the Wake Forest School of Medicine, Winston-Salem, N.C., and colleagues randomly assigned 100 older obese participants (average age, 67 years) with chronic, stable HFPEF to 20 weeks of diet, exercise, or both, or a control group. The researchers measured exercise capacity (peak oxygen consumption [Vo2]) and QOL (with the Minnesota Living with Heart Failure Questionnaire; MLHF).

Of the study participants, 26 were assigned to exercise; 24 to diet; 25 to exercise + diet; 25 to control. Of these, 92 completed the trial. The authors found that peak Vo2 was increased significantly by both exercise and diet, and the combination of diet with exercise produced an even greater increase in exercise capacity. The change in peak Vo2 was positively correlated with the change in percent lean body mass. Body weight decreased by 7 percent in the diet group, 3 percent in the exercise group, 10 percent in the exercise + diet group, and 1 percent in the control group.

There was no significant change in the MLHF score with exercise or diet.

The researchers note that because of the reported "heart failure obesity paradox" (lower mortality observed in overweight or obese individuals), before diet can be recommended for obese patients with HFPEF, further studies likely are needed to determine whether these favorable changes are associated with reduced clinical events.

"This innovative report by Kitzman et al provides applicable evidence that dietary intervention (caloric restriction) alone or complemented by aerobic exercise training improves peak Vo2, increasing exercise capacity," writes Nanette K. Wenger, M.D., of the Emory University School of Medicine, Atlanta, in an accompanying editorial.

"The largest increase in exercise capacity was associated with a combination of the exercise + diet interventions. The hypothesis tested is intriguing, and worthy of further investigation in a community population, with longer follow-up, either with or without specific provision of meals to effect caloric restriction, although translation of this type of intervention to the community will be challenging. Whether nonprofessionally administered diet and nonmedically supervised exercise could safely attain similar benefit is uncertain but worthy of exploration."

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