A Paradigm Shift for Heart Failure Patients: Just Do It!

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Two of the most common questions newly diagnosed heart failure patients ask are, "Can I exercise?" and "Is exercise going to make my heart failure better?" Yet, according to Dr. Ashrith Guha, M.D., a cardiologist at Houston Methodist DeBakey Heart & Vascular Center, many physicians don't adequately address those questions. "Unfortunately, exercise is one of the most neglected parts of heart failure care," Guha says. "We spend a lot of time talking to patients about medications and other therapies such as stents or LVADs or heart transplants, but we spend very little time really talking about exercise." To shed light on the issue, Guha recently coauthored a review article in the Methodist DeBakey Cardiovascular Journal to address exercise as a safe, effective tool for heart failure treatment.

Heart failure, a condition that affects over 5 million Americans, occurs when the heart is unable to pump enough oxygenated blood throughout the body, either because of systolic or diastolic dysfunction. There are two main types of heart failure: heart failure with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF). HFrEF, or systolic heart failure, occurs when the heart muscle is damaged and weakened, impairing ventricular contraction. Since the ventricles cannot pump enough blood into the arteries, the heart relies on increased heart rate to increase cardiac output. However, 25 to 70 percent of HFrEF patients display chronotropic incompetence and cannot increase their heart rate enough to meet metabolic demands. HFpEF is diastolic heart failure, wherein the ventricles are able to contract normally, but myocardial stiffness does not allow the (usually left) ventricle to relax properly to fill with blood. As the heart rate increases with exercise, the patient may experience abnormal heart rhythm and an increase in blood pressure. The symptoms of both types of heart failure are the same: exercise intolerance characterized by fatigue and/or shortness of breath.

HOW DOES EXERCISE AFFECT THE HEART?

Researchers are still exploring this question. Right now it seems that the heart benefits indirectly—but no less dramatically—from the changes exercise causes in the rest of the body.

Guha explains: "Exercise improves muscle use of oxygen; it improves the metabolism in the muscles. But it also improves vascular tone. That is a big factor of the systemic vascular resistance the heart acts against. So when vascular tone improves, the stress on the heart decreases as well. Thus, the heart reaps the benefits of these peripheral changes and its performance improves."

Although cardiovascular researchers readily acknowledge the importance of exercise in heart failure treatment, the shift to implementing prescribed exercise programs has been slow in practice. Guha's team reported that, as of 2015, "only 10.4% of eligible [heart failure] patients received cardiac rehabilitation referral after hospitalization."[1]

Guha hopes to raise that percentage by encouraging cardiologists to refer patients to physical therapists who can develop and supervise personalized aerobic exercise programs. The infrastructure is already in place; it's just a matter of shifting mindsets.

"There are almost always cardiac rehabilitation programs in most hospitals and rehabilitation centers. Cardiologists have been prescribing exercise for patients with ischemic heart disease, heart attacks, or stents for at least the last 10 years," he says. "But prescribing exercise for heart failure is a new paradigm. For heart failure patients, cardiologists often emphasize rest or not overdoing exercise. That translates into lack of mobility or not doing anything."

Fortunately, in 2014, Medicare and Medicaid coverage for cardiac rehabilitation programs was extended to cover 36 sessions for patients with stable, chronic heart failure. Guha

predicts that this will lead to more cardiologists referring their patients to rehabilitation centers that can prescribe exercise.[1]

However, before clinicians can develop an appropriate exercise program, they must evaluate the extent and physiology of each patient's condition. For 80 years, physicians have classified heart failure patients by the severity of their exercise intolerance symptoms. The New York Heart Association (NYHA) Functional Classification ranks patients from NYHA I ("no symptoms and no limitations in ordinary physical activity") to NYHA IV ("Severe limitations and symptoms at rest").[1]

Now more precise testing methods are recommended for a more accurate, less subjective clinical assessment. Two of the most-studied methods are the six-minute walk test (SMWT) and cardiopulmonary exercise testing (CPET). The SMWT measures exercise capacity based on how far a patient can walk on a hard, flat surface in six minutes. It's simple, reproducible, and doesn't require any special equipment or training. CPET, on the other hand, involves using equipment to measure several physiological responses to exercise on a stationary bicycle. CPET has the advantage of providing more precise quantitative data (ranging from respiratory exchange ratio to blood pressure and heart rate response), but it requires expensive specialized equipment and trained staff and is not readily available to many cardiologists. Therefore, Guha recommends that, at minimum, clinicians include the SMWT in their basic heart failure assessments.

An extensive prerehabilitation cardiovascular workup is key to developing appropriate exercise programs. Physicians must consider any other exercise contraindications and individual clinical variables and treat reversible causes of exercise intolerance. Quantitative information about the patient's heart failure status obtained from the aforementioned tests should be used to establish precise exercise goals.

But above all, Guha emphasizes the importance of starting the exercise conversation. Patients want to know about exercise, and health care professionals are in the best position to answer their questions, develop safe and effective exercise programs, and help patients overcome barriers to compliance.

"You can't use a one-size-fits-all approach because every patient is different. They all fall on different parts of the curve in terms of how much they can do," he says. "Evaluation is important so that clinicians know where patients are starting out and can formulate a specific plan of action."

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Laura Gerik is an intern at the *Methodist DeBakey Cardiovascular Journal.*

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