MedicalXpress

Targeting leg fatigue in heart failure

October 31 2011

Doctors should not only treat the heart muscle in chronic heart failure patients, but also their leg muscles through exercise, say researchers in a study published today in the *Journal of Applied Physiology*.

Heart failure causes breathlessness and fatigue that severely limits normal daily activities such as walking. The University of Leeds research team has, for the first time, shown that leg muscle dysfunction is related to the severity of symptoms in heart failure patients. These findings suggest that daily activity in patients with severe heart failure may not simply be limited by the failing heart, but also by an impairment in the leg muscles themselves.

In a series of experiments with chronic heart failure patients, the research team measured responses of the heart, lungs and leg muscles following a moderate exercise warm-up. Using a near-infrared laser to measure the oxygenation of the leg muscles, they found that warm-up exercise increased the activity of skeletal muscle enzymes that control energy production. However, this adaptation was less in patients with the most severe symptoms, showing that the heart failure condition had a negative impact on the normal function of the leg muscles.

Dr Harry Rossiter, of the University's Faculty of Biological Sciences says: "Many chronic heart failure patients complain of leg fatigue during exercise and this can prevent them from being active. Our study shows that by warming up properly, patients can improve the oxygenation and performance of their leg muscles, which is beneficial in promoting exercise tolerance."

"When your muscles don't use oxygen well, it causes an uncomfortable burning sensation during activity," says Dr Klaus Witte, the Leeds General Infirmary Cardiologist on the research team. "The effect of a warm up is to direct oxygen to the places that are going to need it, and make the muscles ready to use it when you start exercising."

Dr Rossiter says the next stage of this research will be to see whether training of the skeletal muscles can improve long-term overall outcomes for patients with chronic heart failure, and to discover more about the pathological changes in the leg muscles that may be a contributing factor in limiting exercise.

"Our main message is that exercise is safe and beneficial in patients with heart failure. By warming up the leg muscles properly, the exercise can be more comfortable and sustained for longer - affording great benefits for these patients," he says.

Provided by University of Leeds

Citation: Targeting leg fatigue in heart failure (2011, October 31) retrieved 23 April 2024 from https://medicalxpress.com/news/2011-10-leg-fatigue-heart-failure.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.