

Improving exercise performance of heart failure patients

April 3 2012, By Sathya Achia Abraham

(Medical Xpress) -- A new pilot study led by researchers at the Virginia Commonwealth University Pauley Heart Center and the VCU School of Pharmacy shows that targeting and blocking a key molecular player involved with inflammation in the heart may improve exercise performance in patients who suffer from heart failure.

Heart failure affects more than 6 million Americans. For people with [heart failure](#), their heart is unable to pump enough blood to meet their body's needs. It can derive from narrowing of the arteries or high blood pressure that leaves the heart weak. [Patients](#) often experience shortness of breath and fatigue. While current treatments have improved symptoms and chance of survival in patients, experts hope to further advance treatment options.

The findings of a new study published in the March issue of the journal, *PLoS ONE*, suggest that targeted blockade of a key mechanism of [inflammation](#) called Interleukin-1 (IL-1) leads to an improvement in the ability of patients to exercise.

“Patients with higher levels of inflammation are more likely to have heart failure that worsens, but we don't have any approved therapies designed to block that inflammation,” said lead author Benjamin Van Tassell, Pharm.D., assistant professor of pharmacy in the VCU School of Pharmacy.

“While it's too early to make definitive conclusions, our [pilot study](#)

suggests that IL-1 blockade may be the first viable anti-inflammatory strategy to improve exercise performance in heart failure,” he said.

The team observed that after two weeks of treatment, patients receiving anakinra, an IL-1 blocking medication, improved their performance by 23 percent on a standardized exercise test.

According to Van Tassell, the next step will be to confirm these findings in more powerful randomized, double-blind studies that involve a larger heart failure population with more advanced disease.

“Ultimately, we want to know whether IL-1 blockade can further reduce heart failure symptoms, reduce hospitalizations, and improve survival,” he said.

Van Tassell completed the study in collaboration with a group of investigators in the VCU Pauley Heart Center led by Antonio Abbate, M.D., Ph.D., assistant professor of medicine, including Keyur Shah, Ph.D., assistant professor of medicine and heart failure specialist, and Justin Canada, exercise physiologist in the VCU Department of Physical Therapy.

[PLoS ONE](#) is an open-access peer-reviewed journal published by the Public Library of Science.

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