Exercise Performance in Children and Young Adults with Single Ventricle Heart Disease Improves with Use of Drug for Erectile Dysfunction

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PHILADELPHIA, March 10, 2011 /PRNewswire-USNewswire/ -- Sildenafil, a drug used to treat erectile dysfunction and pulmonary hypertension, has another possible use -- helping children and young adults with congenital heart disease to better tolerate exercise. Sildenafil significantly improved measures of exercise performance during stress testing in patients with single-ventricle heart disease, according to researchers from The Children's Hospital of Philadelphia.

This study was published online on March 7 in the journal *Circulation*. It is the first randomized, double-blind, placebo-controlled, crossover trial to evaluate the impact of sildenafil on measures of exercise performance in children and young adults with single-ventricle heart disease,

All patients involved in the study had earlier undergone the Fontan operation, a procedure that redirects systemic venous blood directly to the pulmonary arteries, bypassing the heart. It is the third operation in a staged series of surgeries for single-ventricle heart defects, life-threatening conditions in which a child is born with severe underdevelopment of one of the pumping chambers of the heart.

"Despite dramatically improved early operative success achieved over the past 20 years, morbidity and mortality are still a challenge for children who have undergone a Fontan operation," said David J. Goldberg, M.D., pediatric cardiologist at The Children's Hospital of Philadelphia and primary investigator of this study. "The staged palliation does not recreate a normal two-ventricle circulation, instead the series of surgeries creates a unique physiology in which exercise capacity is dramatically diminished."

In this study, researchers randomized 28 children and young adults who had undergone the Fontan operation an average of 11 years earlier to receive either placebo or sildenafil three times a day for 6 weeks. After a 6 week break from treatment, subjects were switched to the o
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