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Contact: Amy Murphy
(202) 375-6476
amurphy@acc.org

Andrew Crosby
(901) 575-0010
acrosby@cvic.com

ACC.09 News Room:
(407) 685-5405

CAN ERYTHROPOIETIN LIMIT HEART ATTACK DAMAGE?

Study tests erythropoietin's ability to halt programmed cell death

*** FINAL DATA NOT YET IN***FINAL DATA TO BE PRESENTED***

Orlando, FL – The first prospective, placebo-controlled, randomized trial to evaluate the effects of short-term erythropoietin administration on patients who are having a heart attack could show whether erythropoietin can protect against further heart damage, according to research presented today at the American College of Cardiology's 58th annual scientific session. ACC.09 is the premier cardiovascular medical meeting, connecting cardiologists and cardiovascular specialists to the latest and most innovative findings in cardiovascular science

During a heart attack, angioplasty and stenting are used to rapidly open the blocked coronary artery and restore blood flow to the heart muscle, in hopes of preventing tissue death. Despite successful blood flow, or reperfusion, a substantial number of patients experience irreversible damage to the heart and eventually develop heart failure.

What more can be done to protect the heart muscle is the question being addressed by the Regeneration of Vital Myocardium in ST-Segment Elevation Myocardial Infarction by Erythropoietin (REVIVAL-3) study. The study offers insight into whether a short-term infusion of high-dose erythropoietin immediately after percutaneous coronary intervention (PCI) can protect the heart muscle against programmed cell death, or apoptosis, after a critical shortage of blood and oxygen (ischemia).

“If erythropoietin can limit cell apoptosis and tissue death, and even enhance the growth of new blood vessels, it could be protective after a combination of myocardial ischemia and reperfusion,” said Ilka Ott, M.D., a professor of cardiology at Deutsches Herzzentrum, Medizinische Klinik der Technischen, Universität München, Munich, Germany. “This could lead

to a reduction in the amount of heart muscle damaged by the heart attack and improvement in left ventricular function.”

Erythropoietin is a hormone that regulates the production of red blood cells. It has been shown to reduce heart attack size and improve heart function in animal studies by limiting programmed cell death and enhancing the growth of new blood vessels. However, little evidence exists on its effects in patients who have had a heart attack.

For the study, researchers recruited 138 patients experiencing their first ST-elevation myocardial infarction (STEMI). Patients were randomly assigned to receive a placebo or an intravenous infusion of erythropoietin immediately, 24, and 48 hours after PCI.

Researchers will report on the effects of erythropoietin on left ventricular ejection fraction – the percentage of blood the left ventricle squeezes into the blood vessels with each beat – at four to six months after entry into the study, as measured by magnetic resonance imaging (MRI). The study is also collecting data on the amount of heart muscle damaged by the heart attack, left ventricular volumes and important clinical events including death, repeat heart attack, stroke, repeat heart procedures, and bleeding and other blood system complications.

Dr. Ott will present the study “A Randomized Double-Blind, Placebo-Controlled Trial of Erythropoietin in Patients with ST-Segment Elevation Myocardial Infarction Undergoing Percutaneous Coronary Intervention” on Monday, March 30 at 10:47 a.m. in Hall A2.

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The American College of Cardiology (www.acc.org) works to influence health care policy and represents the majority of board certified cardiovascular care specialists through education, research, promotion, and the development and application of standards and guidelines. ACC.09 is the largest cardiovascular meeting, bringing together cardiologists and cardiovascular specialists to share the newest discoveries in treatment and prevention, while helping the ACC achieve its mission to address and improve issues in cardiovascular medicine.