Post heart attack recovery may not be aided by stem cell injections, but trial demonstrates promise

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University Hospitals Case Medical Center researchers could still be close to giving heart attack patients a second chance…just not as they originally thought.

LateTIME was a study of adult stem cells (autologous) harnessed from bone marrow that were believed to have the ability to improve heart function after an attack if injected into the heart within two weeks of the attack. Results are being released today at American Heart Association Scientific Sessions and published this week in Journal of the American Medical Association (JAMA).

The results have shown the injections within that timeframe were not favorable, but the concept showed great promise, according to an accompanying JAMA editorial that assessed the trial.

The therapy still shows promise for recovering lost or damaged heart tissue resulting from a heart attack. Both UH Case Medical Center's Drs. Dan Simon and Marco Costa, co-investigators in the LateTIME study, are currently participating in a similar trial, "TIME" that already has reduced the time between attack and stem cell injection.

The pair is optimistic the time variable adjustment in the new trial will lend favorable outcomes. Dr. Simon is Chief, Cardiovascular Medicine at UH Case Medical Center and the Herman K. Hellerstein Professor of

Cardiovascular Research, Case Western Reserve School of Medicine. Dr. Costa is the director of the Interventional Cardiovascular Center and Research & Innovation Center at UH Case Medical Center as well as a professor of medicine at Case Western Reserve University School of Medicine.

The shared theories in both trials is that the specialized cells could have the ability to promote blood vessel growth, prevent cell death and transform themselves into a number of tissues, including muscle. After an acute heart attack, a remodeling process was initiated in the heart in an attempt to compensate for the damaged areas.

Researchers surmised that the condition of the heart muscle several weeks after the attack may differ considerably from the heart muscle in the acute stage setting. For some patients delaying the delivery of stem cells by two to three weeks may have been better than initiating the treatment during the acute phase.

All patients underwent baseline assessments that included medical history, physical exam, electrocardiogram, blood draws, echocardiogram and MRI tests. Participants were then assigned randomly to receive the stem cells or placebo within the aforementioned two to three week timeline.

The morning of stem cell or placebo infusion, a blood draw and bone marrow aspiration procedure of the hip bone are conducted to collect the stem cells. Later the same day, either stem cells or placebo are then infused through a catheter and directly into the damaged area of the heart.

Following the first 24 hours of the infusion, participants wear a small ECG machine, or Holter monitor. Additionally, patients record their body temperature twice a day for 30 days post infusion. Follow up visits

at months one, three, six, 12 and 24 where baseline assessment testing are conducted.

Provided by University Hospitals Case Medical Center