MedicalXpress

UT Houston launches stem cell study for acute stroke patients

February 13 2009

A first-of-its-kind stem cell study to treat acute stroke victims is being launched by investigators at The University of Texas Medical School at Houston.

The Phase I study, funded with a pilot grant from The National Institutes of Health, will use the patients' own stem cells. Researchers will enroll 10 patients who have just suffered a stroke and are being treated in the Emergency Center at Memorial Hermann - Texas Medical Center. Physicians will obtain permission from the patient or patient's surrogate.

"This will be our first attempt to look at the safety of using stem cells in acute stroke patients," said Sean I. Savitz, M.D., assistant professor of neurology at the medical school. "There's a lot of promise behind this but we want to do it in a slow, rigorous fashion. Because we are injecting them intravenously, these cells can disperse to lots of different parts of the body and that's why we're looking at safety parameters."

Stroke occurs when blood flow to the brain is interrupted by a blockage or a rupture in an artery, depriving brain tissue of oxygen. It is the third-leading cause of death behind heart disease and cancer. According to the American Stroke Association, nearly 800,000 Americans suffer a stroke each year - one every 40 seconds. On average, someone dies of stroke every three to four minutes.

The stem cells will be harvested from the bone marrow in the iliac crest of the leg, then separated and returned to the patient within three to six

hours. Because they are the patient's own stem cells, rejection is not expected to be an issue.

"This study is the critical first step in translating laboratory work with stem cells into benefit for patients. If effective, this treatment could be helpful to a huge segment of stroke patients to reduce their disability," said James C. Grotta, M.D., Roy M. and Phyllis Gough Huffington Distinguished Professor of Neurology and chair of the Department of Neurology at the medical school. "We are fortunate here at UT Houston and the Texas Medical Center to have the resources needed to carry out this work, and to have attracted someone of Dr. Savitz's caliber to lead this study."

The clinical study builds on laboratory and animal research indicating that stem cells from bone marrow can migrate to the injured area of the brain and help repair the damage.

"Animal studies have shown that when you administer stem cells after stroke, the cells enhance the healing. We know that stem cells have some kind of guidance system and migrate to the area of injury," Savitz said. "They're not making new brain cells but they may be enhancing the repair processes and reducing damage."

A UT Medical School study involving acute brain-injured children using their own stem cells has been underway since 2006 at Children's Memorial Hermann Hospital. Principal investigator of the study is Charles Cox, M.D., The Children's Fund, Inc. Distinguished Professor in Pediatric Surgery and Trauma at the medical school. Co-investigator is James Baumgartner, M.D., research collaborator with the medical school and a pediatric neurosurgeon at Children's Memorial Hermann Hospital.

"It's beneficial for this study that we have precedence. Dr. Cox and Dr. Baumgartner have been great in guiding me. That study has served as a

model for us," Savitz said.

Source: University of Texas Health Science Center at Houston