News
Office of Medical Information
The University of Texas Southwestern Medical Center at Dallas

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****Bone marrow transplant procedure used to treat sickle cell anemia

DALLAS -- Pediatric researchers at The University of Texas Southwestern Medical Center at Dallas will participate in an experimental program using bone marrow transplantation for selected children with sickle cell anemia. UT Southwestern is one of 10 medical institutions participating in this multi-center study of the pioneering procedure.

Sickle cell anemia is a genetically transmitted chronic blood disorder that primarily affects African Americans. About one African American in 10 carries the sickle cell trait and can transmit it to the next generation. The potentially devastating disease actually appears in one in 400 African American newborns. It is necessary for both parents to be carriers of the sickle cell trait for the child to develop sickle cell anemia.

The experimental transplant procedure will be performed at Children's Medical Center of Dallas, UT Southwestern's primary pediatric teaching hospital. "This is potentially very exciting news for some patients," said Dr. George Buchanan, professor and director of pediatric hematology/oncology at UT Southwestern, who heads Children's sickle cell anemia program.

Buchanan cautioned that the new transplant procedure is not a panacea. It is being tested only in extremely serious cases, such as children who have suffered a stroke from their sickle cell disease and

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who otherwise would receive repeated blood transfusion therapy. Prior to the bone marrow transplant, the patient's immune system has to be knocked out by chemotherapy. As a result, the patient faces an increased risk of infection after the transplant procedure, and there is a 10 percent mortality rate.

At least 20 patients with sickle cell anemia have received the new treatment, mostly in Europe, Buchanan said. So far, the success record looks good. When the transplant has been tried for other conditions, such as leukemia, however, there have been high rates of complications and a few reported deaths.

Buchanan said criteria have not been firmly established for selecting patients eligible for the new treatment. Because of the risks involved, the patients' overall quality of life and the number of hospitalizations they have required will be taken into consideration, he said.

Infection is the major enemy of the sickle cell patient. Most patients with sickle cell disease are treated with drugs, primarily for infection. In recent years Buchanan and other researchers have established that penicillin given on a regular basis to high-risk patients can be effective. Also, the disease can become life-threatening when organs such as the spleen, liver, kidneys or lungs are affected by oxygen deprivation. Loss of oxygen to the organs occurs when the rigid sickle-shaped red blood cells clog blood vessels. In addition to damaging the organs, this process is excruciatingly painful.

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, Southwestern Allied Health Sciences School, affiliated teaching hospitals and outpatient clinics.