

Stem Cell Procedure May Help Ease Lupus

*By Jia-Rui Chong
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Transplants of stem cells harvested from bone marrow have provided the first successful treatment for lupus patients who have not responded to other therapies, Chicago researchers reported Tuesday.

The study, which enrolled 50 people with the incurable autoimmune disease, found that half had no signs of the disease after five years. Those patients no longer required drugs to keep their immune systems from attacking their tissues, according to the study published today in the *Journal of the American Medical Assn.*

"If home base is the cure, ours is third base," said lead researcher Dr. Richard K. Burt of the Northwestern University Feinberg School of Medicine in Chicago.

Burt said lupus caused a patient's immune system to act like a police force "gone bad," indiscriminately attacking the patient's body.

"We took out the police force and brought in a new group of cadets," he said.

Dr. Ewa Carrier, a UC San Diego researcher who has experimented with transplanting stem cells to treat lupus, said the Chicago study opened a promising avenue for treating a debilitating disease.

"About 5% to 10% don't respond to any treatment," Carrier said. "These patients will highly benefit from this. Otherwise, they will die or their quality of life will be poor or the cost of treatment will be very high."

Duane Peters, a spokesman for the Lupus Foundation of America, expressed cautious optimism about the treatment, but warned that the transplants carried significant risks.

"This is a very serious procedure that has life-threatening consequences," he said. Therefore it should be used only for people with serious lupus for whom all conventional therapies have failed, he said.

As many as 1.5 million Americans are believed to suffer from lupus, though estimates vary considerably.

Scientists are still trying to decode the causes of lupus, but it can be affected by a person's genetics, hormones and the environment. The disease mainly afflicts women, usually in their childbearing years.

Lupus can affect any organ of the body, but commonly causes extreme fatigue, rashes and swollen joints. The most serious form, systemic lupus erythematosus, can attack organs such as the kidneys or brain. About 70% of cases are systemic, according to the Lupus Foundation.

In the last part of the 20th century, the disease has become manageable for most patients through the use of drugs that suppress the immune system, and other chemotherapies.

Burt, who performed the first stem cell transplant in the U.S. for lupus in 1997, focused on patients with the most serious form of the disease for his study.

His team first collected the stem cells from the patients' bone marrow, then used drugs to destroy the patients' immune systems without killing off all of the bone marrow. The new stem cells were intravenously introduced back into the patient.

Five years after the transplant, half of the patients improved so much that they were considered disease-free. Many no longer required supplemental oxygen or dialysis for their kidneys. One patient has been in remission for 7 1/2 years.

But there were limitations to Burt's approach. Half of the patients either relapsed or never went into remission, the study said. One reason is that a patient's stem cells contain the same genetic material and have the potential to renew the attack, Carrier said.

"Transplanting patients' own stem cells is just resetting their own immune clock, but it's not really curing," she said. "To really cure lupus, you have to use stem cells from somebody else," but that hasn't been tried.

The stem cell transplant also carried serious risks for patients in the study. Burt and his colleagues believe one person died because of a fungal infection related to the harvesting of the stem cells.

Many of the participants suffered from bacterial infections. Burt said the complications occurred because the patients came into the treatment with severely compromised immune systems.

The results were better than a recent European study using a similar method, Carrier said. Of the 53 patients in that study, 12 died within six weeks of the transplant.