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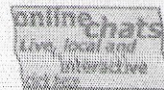
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Transplants Show Promise for Lupus

Associated Press

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LONDON - New research bolsters the hope that doctors might one day be able to use bone marrow transplants to cure autoimmune diseases such as rheumatoid arthritis, multiple sclerosis and lupus.

A few people with autoimmune diseases - where the immune system goes awry and attacks the body - already have been injected with their own immature blood cells, called stem cells. The results have been promising, with some remaining in remission, but researchers have not tracked many people for very long.

A preliminary study of seven people very sick with systemic lupus, reported in *The Lancet* medical journal this week, found that the transplanted blood cells appeared to have dominated renegade immune cells in all the patients and repaired organ damage previously considered permanent.

It's too early to tell if the therapy has cured them of the potentially fatal illness, but all the patients are now healthy about three years after getting the treatment, said the researchers, from Northwestern University School of Medicine in Chicago.

"This is the best report I've heard so far, and it looks very promising for those autoimmune diseases that are life-threatening or managed at large cost," said Dr. Noel Rose, a leading researcher of autoimmune diseases at Johns Hopkins University School of Public Health.

Bone marrow transplants carry a high risk of deadly infections and thus would be appropriate only as a last resort for people whose diseases have not responded to other treatments, experts say.

The latest research "is clearly defining transplant as a therapy that can

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provide at least short-term, if not lifelong, relief" for patients who have exhausted all other options, said Dr. Theodore Moore, director of the pediatric stem cell transplant program at Doernbecher Children's Hospital at Oregon Health Sciences University. He was not connected with the study.

Bone marrow transplants traditionally are performed to fight cancer or to correct rare genetic defects. Some cancer patients also get relief from autoimmune diseases they are suffering, a bonus that prompted scientists to investigate transplants for those illnesses.

Stem cells - free-agent immature cells that can go on to become any cell type in the body - are stored in various organs and grow into the specific types of cells needed by those organs.

Scientists hope that by removing stem cells from the bone marrow of people with immune system diseases then injecting it back into their blood, the new cells will grow into healthy immune cells and dominate the misguided ones, fixing the problem.

In the study, the extracted bone marrow was filtered to eliminate any old, defective cells. After the purified stem cells were injected into the blood, the patients were given drugs to kill off the aberrant cells and silence those left over so the new ones could mature without their influence.

Rose noted it is mysterious that the transplanted cells, which have the same genetic defect that made the patients' immune cells go wrong in the first place, did not grow up to repeat the mistakes of their siblings.

"It is curious that it works at all," he said.

The study's leader, Dr. Ann Traynor, a blood and cancer professor at Northwestern, said she believed the new cells were able to take over the immune system and were probably suppressing the influence of the renegade cells - in effect erasing the memory of the immune system and starting fresh.

"They've actually reversed their organ disfunction. Lung function is completely normal, they are repairing the kidney function, blood toxins are down. ... They are all normal now," Traynor said. "They don't get infections now any more than you or I."

"This is one part of the whole excitement of the growing technology of stem cells to reverse disease," she added.

Even if the effect doesn't turn out to be permanent, experts say it would be worthwhile to give patients a normal life for a few years.

Autoimmune disease is now the third major category of illness in many industrialized countries, behind heart disease and cancer, experts

say. Some patients have mild cases of autoimmune diseases, while others have sporadic flare-ups. Some face a lifetime of misery.

Systemic lupus is incurable and can be fatal. The immune system attacks several organs, which can cause arthritis, kidney failure, brain disease and inflammation of the lining of the lungs and the membrane surrounding the heart. It affects about nine times as many women as men.

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