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Immune System Tricked to Accept Mismatched Donor Organs

A group of scientists have found a method for deceiving the immune system so that it will accept organs from an incompatible donor, a finding that could help patients avoid a lifetime of medication to prevent rejection of the organ.

The procedure involves suppressing the patient's bone marrow with chemotherapy and radiation before they undergo surgery; a day later they are transplanted with the donor's bone marrow. The idea here is to try to use donor-derived stem cells to achieve engraftment. About a month before transplant surgery, kidney donors must inject themselves with a medication for several days to force stem cells and facilitating cells into their bloodstream, so that engraftment can occur more safely.

Of eight kidney transplant patients who have been treated with this new approach, five have been able to avoid taking anti-rejection drugs a year after their surgery, according to the study.

Dr. Suzanne Ildstad, Director of the Institute of Cellular Therapeutics at the University of Louisville in Kentucky, who developed the new approach, said in a statement: "This new approach would potentially offer a better quality of life and fewer health risks for transplant recipients." However, some experts say the procedure is risky, and unnecessarily so given the relative safety of kidney transplants.

Dr. Tatsuo Kawai, a transplant surgeon at Harvard Medical School, who wrote a commentary on the new approach in the journal, said: "We have to think about the risks and benefits. Since the current treatment is so stable, it really has to be safe."

The study is the first to try to create chimeric tolerance in patients using the facilitating cells created by Regenerex.

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Journal Reference:

Ildstad S (2012) Chimerism and Tolerance Without GVHD or Engraftment Syndrome in HLA-Mismatched Combined Kidney and Hematopoietic Stem Cell Transplantation. Science Translational Medicine, 4(124):124-28, DOI: 10.1126/scitranslmed.3003509.

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