

Transplants Prolonged

Anti-Lymphocyte Serum has prolonged the life of kidney transplants in dogs, and a purified form might be applied to humans—By Faye Marley

► THE MOST EXCITING development reported in a closing session of the 52nd Clinical Congress of the American College of Surgeons in San Francisco was a serum called ALS for short, that has prolonged the life of kidney transplants in dogs.

ALS, which stands for Anti-Lymphocyte Serum, is being used experimentally to reduce the proportion of lymphocytes, or white blood cells, that are involved in the rejection phenomenon. Several dogs have survived more than a year after treatment with the serum, prepared from the blood of horses.

ALS has been used at the University of Colorado Medical School, Harvard Medical School and a number of other places. It still needs purifying, but when it is refined it could be a significant answer to the immunity problem that has prevented the permanent acceptance of transplants.

Two Survive 10 Years

► ENCOURAGING developments in kidney transplants and heart pumps that are prolonging life were reported.

Dr. Joseph E. Murray, kidney transplant pioneer of Peter Bent Brigham Hospital and Harvard Medical School, said that one identical twin recipient of a kidney had survived 10 years and her sister, who donated the organ, had survived the same length of time. Both have borne children since the operation, and are well.

Dr. Michael E. DeBakey, whose implanted heart pump put a Mexican woman back on her feet with her own heart functioning, told of some 8,000 grafts—5,000 of them aortic grafts—with artificial material. Dacron, which is the same material produced commercially, has been the most successful. The Dacron he substitutes for the human aorta is knitted and woven to simulate the artery.

"We have to go back and replace them sometimes," he said at a news conference. "Usually it is because disease occurs and thrombosis takes place."

Dr. DeBakey told SCIENCE SERVICE that he expects the new Federal program of the heart, cancer and stroke committee that he headed to be functioning satisfactorily in every region of the United States before the new year.

New Donor System

► THE BEST candidate to donate a kidney for transplantation to a patient

who needs a new one can be chosen by a new, reliable method disclosed by a surgeon from Duke University Medical Center, Durham, N.C., reported.

Dr. D. B. Amos proposed a means to determine compatibility of donor and recipient, thus reducing the need for highly toxic drugs to ward off rejection of the transplanted organ.

The system involves a series of tests done on white blood cells taken from members of the patient's family. The cells are matched for certain characteristics against those of the patient in much the same manner as red cells are matched for blood transfusions.

Finding the best donor for a kidney transplantation is one of the major difficulties faced by transplantation teams. To avoid loss of the graft, it is necessary to suppress the immunological mechanism of the body—the mechanism which enables us to fight off invasive bacteria and fungus infections.

In the case of identical twins, however, this is not the case. Then, the host's body does not recognize the new part as foreign.

In earlier attempts to ward off the rejection of the transplanted tissue, irradiation with near lethal doses of X-rays was used. And although this killed the defense mechanism it also largely destroyed the patient's ability to defend himself against germs.

The Duke researchers found that in large families there may be as many as eight or more possible donors. Some will be "good," but others should be ruled out. The tests with white cells help determine which ones are compatible.

The best of the compatible subjects then are cross-tested by means of skin grafts. These are compared with those of other candidates who have similarities of their own. This even further narrows down the donor candidates. The process is repeated until the best possible donor is produced.

Cancer Viruses?

Also at the meeting, Dr. James T. Grace of Roswell Park Memorial Institute, Buffalo, N.Y., said that of 48 human leukemic cell cultures being studied in laboratories around the world, 35 contain viruses that look like viruses of the herpes group. He predicted great activity within the next year on the possible role of viruses in the cause of human cancer.

If virus is definitely proven to be the cause of certain types of cancer, these

types might be preventable by the use of vaccines. Also an animal or a human might be immunized against antigens in his own tumor cells.

Foreign Visitors

► AN AUTHORITY on the often fatal hydatid disease, common in Australia, New Zealand, Iran, Iraq, Lebanon, Syria and other countries where cattle are raised, told SCIENCE SERVICE that public health measures could easily prevent it.

Dr. Yervant Jidejian, an Armenian-born surgeon on the staff of American University, Beirut, Lebanon, was among the foreign visitors to the Congress who came to exchange the latest information on surgery.

He said stray dogs must be destroyed and the owners of pet dogs must be warned not to feed them raw meat that could possibly contain the ova of the worm called *Taenia echinococcus*. This worm is the smallest of the cestodes, which resemble the tapeworm, and the dogs pass the ova on to humans, thus causing hydatid cysts to form in various organs, principally the liver and lungs.

Another foreign visitor was Dr. Tord Skoog, professor of plastic surgery at Uppsala University, Uppsala, Sweden, who showed a film on a breast operation.

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