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First kidney transplant involving different blood types performed in Israel

Breakthrough procedure at Petah Tikva hospital could increase live donor procedures by 40 percent.

By Dan Even
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Doctors at Beilinson Hospital in Petah Tikva earlier this month performed the country's first kidney transplant involving a donor and recipient with different blood types - a breakthrough that could increase kidney transplants involving live donors by 40 percent.

The kidney recipient was Ortal Mahlev, 18. The Herzliya resident, who has type B blood, received the kidney from her father, 51-year-old Shlomo Mahlev, who has type A blood.

"Blood type indicators are antibodies found on red blood cells and on the internal lining of blood vessels, and they attack a foreign blood type that enters the body," said Dr. Alexander Yusim, who heads the Renal Transplantation Unit and Nephrology Institute at Beilinson.

Yusim's team of doctors carried out the transplant by neutralizing the antibodies, he said.

The method for neutralizing the antibodies takes at least two weeks, making it impossible to use for patients who need a new kidney immediately.

The procedure is based on technology developed a decade ago in Japan, where organs are rarely transplanted from dead bodies due to restrictions of the ancient Japanese Shinto religion. Western doctors, particularly in the United States, Germany and Sweden, subsequently began using the method.

Nearly 700 Israelis are awaiting a kidney transplant, but medical officials believe 40 percent of those suffering from kidney failure have so far been unable to receive the organ from their relatives due to differing blood types.

Last year 83 kidneys were transplanted from dead donors and 69 from live donors.

The transplant process involves several stages, said Yusim.

"First the recipient's blood is transferred into a machine that executes a blood plasma fractionation, a method whereby blood is broken up into red blood cells that are later re-inserted into the body and the blood serum which contains the antibodies that are removed from the body," he said. "The serum is then replaced by a protein with water solubility (albumin). The body is then injected with gamma globulin in order to prevent the antibodies from acting."

In the next stage, the patient is injected with a chemical preparation known as rituximab, which neutralizes B white blood cells that manufacture new antibodies. Doctors can implant the organ from a donor with a different blood type after the process is repeated three or four times and the number of antibodies falls to zero or nearly zero.

This story is by: Dan Even