

Pancreatic islets infusion for diabetes patient being readied for procedure in Japan

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The Japanese Pancreas and Islet Transplantation Association (JPITA) is preparing for the nation's first transplantation of pancreatic islets from a brain-dead donor to a patient with Type 1 diabetes, it was learned Saturday.

The preparation has been started at a time when transplantation of [pancreatic islets](#), which make insulin, from patients dead from cardiopulmonary arrest will be resumed in June for the first time in five years.

Because the Health, Labor and Welfare Ministry said transplant of pancreatic islet or Langerhans from a brain-dead patient would be approved if consent from the donor's family is obtained, the JPITA is planning to complete preparations for an actual transplant from a brain-dead donor within this [fiscal year](#).

Pancreatic islet transplantation aims to treat patients with advanced [Type 1 diabetes](#), which can cause hypoglycemic shock. The number of patients with Type 1 diabetes is said to be 100,000 or more in the country.

The transplantation of pancreatic islets to treat Type 1 diabetes, which is performed by infusing pancreatic islets from a dead donor into the liver of a recipient, started in Japan in 2004 because the treatment is easier on patients than transplantation of the pancreas itself. If the transplant is successful, patients can stop taking daily injections of insulin, a kind of

hormone that lowers [blood sugar levels](#).

However, the treatment was suspended in 2007 because material extracted from [cattle](#) brains, which could cause variant Creutzfeldt-Jakob disease, was found to be used in the process of making a kind of enzyme to separate the pancreatic islets from other pancreatic tissue.

However, the JPITA this year decided to resume the procedure and requested the government to recognize it as advanced [medical treatment](#) because a new method that does not use animal-derived material was invented and a new registration system of patients was developed.

In Japan, about 120 [diabetic patients](#) are waiting for pancreatic islet transplants. Though the transplants from brain-dead donors are common in the United States and Europe, patients dead from cardiopulmonary arrest donated pancreatic islets in 34 of the past 35 transplantations in Japan, with only one exception in which the endocrine gland was transplanted from a living donor.

Though pancreatic islet transplantation from a brain-dead donor has been legally possible in Japan for some time, the treatment has not been seriously considered until now because the number of organ transplants from brain-dead donors in general has been very small in the country.

While the number of organ transplants from brain-dead donors has been increasing with revision of the Organ Transplants Law in 2010, the JPITA, the Japan Organ Transplant Network, the Japan Society of Tissue Transplantation and others have begun discussing ways to obtain consent from a donor's family, to offer pancreatic islets to recipients and others.

They said that donated pancreatic islets usually do not have any problems and can be used for the transplantation even if the donor's pancreas

contain too much fat and usually is not suitable for ordinary pancreas transplantation. Enough pancreatic islets for 10 transplant cases a year could be donated from brain-dead patients in Japan, they added.

The pancreatic islet transplantation from a brain-dead donor might improve treatment results since organs of patients in cardiopulmonary arrest might have been damaged due to suspension of blood flow.

Transplantation of the pancreas itself is complicated surgery, and recipients need strong immunosuppressive drugs after surgery. However, pancreatic islet transplantation is easier on patients because it does not require surgery and takes only a short time with local anesthesia.

Pancreas transplantation was long said to have better treatment results than pancreatic islet transplantation. However, in the United States and Europe, about 50 percent of diabetic [patients](#) become free of [insulin](#) injections with [islet transplantation](#). This is said to be similar to the rate of success in [pancreas](#) transplants.

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