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Living insulin-free: ‘I feel like a whole new person’

BY CINDY KRISCHER GOODMAN

Karla Edge has type 1 diabetes and has been insulin-free for 11 years after being treated at the University of Miami’s Diabetes Research Institute.
Andrew Milne - University of Miami file photo

Karla Edge was losing her battle with type 1 diabetes when she arrived desperate at the Diabetes Research Institute in Miami. She had been suffering such severe hypoglycemia that her husband and two daughters frequently called 911. Because Edge had no warning when her blood sugar plunged, she could could no longer hold a job or drive the car.

Doctors at the Institute transplanted pancreatic islet cells into Edge’s liver. Now, she has been living insulin free for the last 11 years.

“After living 40 years with type 1 diabetes, I feel like a whole new person,” said Edge, 56, who lives in northwest Florida and travels to Miami once a year for testing, but no longer considers herself a diabetic. “I am enjoying each day and I say all the time, ‘Please let it keep working.’ ”

Continued advances in diabetes treatment are holding promise of a better life for patients like Edge with type 1 diabetes. From transplants to devices to medication, tools for managing type 1 diabetes are improving as researchers seek a cure.

These advances arrive as doctors report a rise in the number of people being diagnosed with type 1 diabetes, which typically is diagnosed in children and young adults. The

Juvenile Diabetes Research Foundation estimates that about 1.5 million Americans suffer from type 1 diabetes, an autoimmune condition that can develop over days and weeks, and is not linked to a person's diet.

For many patients like Edge who have lost hypoglycemia awareness over time, the islet cell transplant is a viable form of treatment, according to Dr. Rodolfo Alejandro, a professor of endocrinology, diabetes and metabolism at the University of Miami's Miller School of Medicine and director of the DRI Clinical Cell Transplant Program.

So far, more than 1,500 patients have been treated with this procedure in medical centers around the world. Results of clinical trials show that about 50 percent of transplant patients remain insulin-free after five years.

"Even if they have to take some insulin to balance things, at least now they can sense when their glucose is low and they can avoid severe hypoglycemia," Alejandro explained.

But patients must be on immunosuppressive drugs, which have side effects, he said. "Still, this is an alternative for a selective group of people with type 1 diabetes."

Meanwhile, other diabetes patients are benefiting from a newer procedure. In August 2015, 43-year-old Wendy Peacock, who had lived with diabetes since she was 17, underwent the first-ever BioHub transplant of donor islet cells into the omentum, the surface of the abdominal cavity. Researchers at UM's Miller School of Medicine now will evaluate whether the omentum is a better home for the islets than the liver, the traditional transplant site.

Alejandro sees promise: "We know that transplanting the cells into the liver is not perfect. We lose a lot of islets in the process. We are hoping the new site will allow us to get even better success."

More advances may be on the way. According to the Harvard Gazette, in January, researchers at MIT's David H. Koch Institute for Integrative Cancer Research, in collaboration with scientists at the Harvard Stem Cell Institute, announced they have developed an implantable device that in mice shielded insulin-producing cells from immune system attack for six months. The insulin-producing cells were made from stem cells.

"We are excited by this new technology and are working hard to advance it to the clinic," said Daniel Anderson, the Samuel A. Goldblith Professor of Applied Biology at MIT, which supported the research.

For patients who aren't eligible to give up insulin, doctors say diabetes management has become more aggressive with improved pumps and glucose monitors. For example, there are now four types of continuous glucose monitoring systems. Sensors implanted under the skin can monitor glucose in real time to prevent hypoglycemia. The newest sensors last up to seven days.

Going forward, diabetics can anticipate more options: Researchers have long sought to link glucose monitoring and insulin delivery by developing an artificial pancreas. In October, the Food and Drug Administration approved a new device made by Medtronic that monitors glucose levels and automatically administers insulin, based on those levels. It's for type 1 diabetes patients, ages 14 and up. The device is expected to be available in spring.

Larry Hausner, chief patient advocate of the Partnership to Fight Chronic Disease, said with all the innovation, diabetics need to carefully examine their choices. "There are lots of new options that are good, but their goals should not be to get off insulin if they really need it," he said. He said he sees promise on the horizon from pharmaceutical companies for alternatives to insulin shots.

To be sure, South Florida doctors say type 1 diabetes, though rarer than type 2, has been more difficult to treat.

"By the time they get to me, they have had diabetes for decades," said Dr. Adam Splaver, a metabolic cardiologist who practices in Miami Beach and Hollywood.

Splaver treats patients with type 2 diabetes or pre-diabetes with diet, exercise, vitamins and neutraceuticals. "I have been successful in preventing progression or reversing it if I use multiple modalities," he said. For type 1 diabetes, he suggests patients look into the new innovations and work closely with their healthcare providers.