Diabetes' link to eating disorders explored

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Dr. Deborah Young-Hyman is a pediatric psychologist at the Medical College of Georgia's Georgia Prevention Institute. Credit: Medical College of Georgia

Diabetics, under the gun to better manage their disease by controlling their food intake and weight, may find themselves in the sticky wicket of needing treatment that makes them hungry, researchers said.

Attempts to maintain healthy blood sugar levels and prevent weight gain may suggest an eating disorder when the disease and its treatment are to blame, said Dr. Deborah Young-Hyman, pediatric psychologist at the Medical College of Georgia's Georgia Prevention Institute.

"You can't use the same criteria to diagnose eating disorders that you use in non-diabetic populations because what we actually prescribe as part of diabetes treatment is part of disordered eating behavior. Food preoccupation is one example," she said.

Preoccupation with food, in fact, is required for optimal disease management. Questions like "What are you putting in your mouth? Did you know that was going to raise your blood sugar?" are a part of life, Dr. Young-Hyman said. Young women, and increasingly young men, also are not immune from societal pressures to be thin, she noted.

Side-by-side comparisons of young people with and without diabetes are needed to answer fundamentals such as the incidence of eating disorders among diabetics, who is at risk and whether treatment can be modified to reduce the risk, researchers report in a review article in the March issue of *Diabetes Care*.

Answers could include better methods of insulin delivery and new therapies that address hunger-related hormones, which also become dysregulated in type 1 diabetes.

Dr. Young-Hyman and her colleagues extensively reviewed related literature enabling them to connect the dots between the disordered eating behavior reported by some diabetics with the dysregulation of hunger-related hormones and/or inadequate management of insulin therapy.

In type 1 diabetes, the immune system attacks the insulin producing cells of the pancreas complicating food metabolism. The treatment - insulin by injection or pump - spurs hunger. If the insulin dose isn't exactly calibrated with food intake, blood sugar levels rise and require more insulin which could drop the blood sugar levels and increase hunger even more.

The cycle of inexact insulin dosing can cause weight gain which increases insulin requirements and resistance.

And there's another factor at work: the insulin producing-cells attacked

by the disease also make amylin which works with other appetite regulating hormones such as leptin to regulate the sensation of fullness. The resulting difficulty of diabetics to determine whether they are full has been documented in anorexia.

Interestingly, most type 1 diabetics lose a lot of weight before diagnosis because they excrete rather than metabolize calories. For a period of months, they may be able to eat large amounts of food and not gain weight. When they start taking insulin to "control" their disease, they can gain a lot of weight quickly. "It's not hard to see how the treatment of the disease can lead to disordered eating behavior to control weight gain," Dr. Young-Hyman said.

As a psychologist, Dr. Young-Hyman has treated many type 1 diabetics diagnosed with an eating disorder. In fact, one patient she describes as accomplished, funny and discouraged by her inability to control how much she ate and her subsequent weight gain, helped inspire Dr. Young-Hyman to learn more about eating disorders in patients with diabetes.

The conundrum expressed by this patient can lead, particularly for young women, to unhealthy behavior such as skipping or reducing insulin doses or binging-purging in an effort to avoid weight gain. The behaviors create immediate risks such as hypoglycemia or extreme high blood sugar levels, and are associated with long-term complications of diabetes such as eye, nerve and heart damage.

Controversy persists about whether type 1 patients have increased rates of diagnosable eating disorders or disordered eating behavior; incidence projections range from as low as 3.8 percent to up to 40 percent in young females when skipping or reducing an insulin dose is considered.

"We need to document that these patients are experiencing dysregulation in satiety and that it's not only connected with factors one usually

associates with disordered eating behaviors such as societal pressure, anxiety and depression," Dr. Young-Hyman said. "It's also associated with having diabetes."

Studies that chronicle disordered eating behavior in type 1 diabetics could aid in prevention, including developing potential new treatments, Dr. Young-Hyman said.

She is completing an American Diabetes Association-funded study that might answer some of the questions. She and colleagues at Harvard and Emory universities are following 90 children, age 10-17, newly diagnosed with diabetes or transitioning to an insulin pump. They are documenting pertinent issues such as treatment patterns, weight, psychological adjustment and attitudes about weight and eating, including changes in eating patterns and blood sugar levels in response to insulin dosing.

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