

age of 12.2 years, four hospital admissions because of acute pancreatitis were necessary. Already the initial abdominal ultrasound revealed pancreatic calcifications and a dilated main duct. Patients with early calcifying disease develop diabetes frequently; severe exocrine insufficiency is associated with subsequent pancreatic diabetes as well (3,4). Thus, our patient carried both risk factors of early pancreatic diabetes. Initially, oral glucose tolerance test and HbA_{1c} (A1C) were normal. At 7.8 years, oral glucose tolerance test with 1.75 g/kg glucose revealed 10.8 mmol/l glucose at 120 min (diabetes >10.1 mmol/l). The fasting C-peptide dropped to 0.14 nmol/l, which is markedly below the normal range (0.25–1.3 nmol/l). A1C was elevated to 6.3% (normal range 4.8–6.0%). Under the suspicion of pancreatic diabetes, conventional insulin therapy was initiated (0.2 IE insulin · kg⁻¹ · day⁻¹). Daily insulin requirements declined under fat-restricted and complex carbohydrate-enriched diet. Insulin therapy was stopped at 13.5 years of age. The 120-min glucose concentration dropped to 7.4 and 5.9 mmol/l at 14.9 and 17 years of age, respectively. The corresponding C-peptide levels restored to 0.63 and 0.62 mmol/l, respectively. This corresponds with a more than fourfold increase as compared with the time of diagnosis of pancreatic diabetes. All pancreatic endocrine function tests have been performed at least 6 weeks after a pancreatitis attack when the patient was in stable clinical condition.

Later endoscopic pancreatic duct decompression did not further improve endocrine and exocrine insufficiency.

During the following years, she grew along the 50th percentile, and her weight followed the 75th percentile. Fasting glucose was between 4.5 and 5.1 mmol/l.

Prospective investigations of patients with pancreatic diabetes are warranted to analyze the main endocrine contributors of the phenomenon of recovered glucose tolerance. Is it fluctuating insulin and glucagon reserves alone or are further hormones involved (e.g., during puberty)? So far, it seems patients with insulin-dependent pancreatic diabetes should be carefully observed for fluctuating glucose homeostasis. In some cases, termination of insulin therapy could be possible and may prevent side effects of nonmandatory exogenous insulin supplementation.

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Adherence to Insulin and the Risk of Glucose Deterioration

Efforts to improve glucose control in patients with type 2 diabetes have been limited by the tendency for patients to experience glycemic deterioration during the maintenance phase of treatment. It has previously been reported that insulin use is a predictor of so-called “hyperglycemic relapse” (1). This previous retrospective study was limited by the inability to adjust for medication adherence, as this measure was not available in the database. Here, we reconsider the relationship between insulin use and hyperglycemic relapse in a prospective cohort

study after consideration of medication adherence.

We studied 164 patients currently enrolled in a National Institute of Diabetes and Digestive and Kidney Diseases-funded Relapse Prevention Trial. Each patient in this study had documented previous poor glucose control (HbA_{1c} [A1C] >8%), entered the 12-week Diabetes Improvement Program at Vanderbilt University, and completed the program demonstrating improved blood glucose control (A1C <8%). Patients were then contacted for follow-up for the study outcome, time-to-hyperglycemic relapse, defined as a subsequent A1C >8% and a ≥1% rise over nadir A1C.

At baseline, patients were classified as either insulin using or non-insulin using based on self-report during a face-to-face intake. At baseline and during follow-up, patients were asked to quantify how many shots of insulin they missed per week. Adherence to the prescribed regimen was calculated as the average percentage of shots missed per week over the course of the study. Cox proportional hazards models were then constructed to model the effect of adherence on hyperglycemic relapse.

The mean ± SD age of the patients was 55 ± 10.7 years. Approximately 56% were men, 76% Caucasian, and 21% African American. Mean BMI was 34.0 ± 6.9 kg/m², mean duration of diabetes was 7.1 ± 8.2 years, and mean A1C was 6.70 ± 0.69%. Fifty-five percent were using insulin at baseline.

Mean follow-up of the cohort was 22.2 ± 10.3 months. Thirty-nine patients (24%) experienced hyperglycemic relapse. Lack of adherence to insulin regimen predicted hyperglycemic relapse in a dose-dependent manner. Compared with insulin users missing 0–5% of their shots, those missing 5–10% of their shots had a hazard ratio (HR) of 2.37 (95% CI 1.03–5.47), and those missing >10% of their shots had an HR of 3.14 (1.02–9.68) for hyperglycemic relapse. While insulin use was a univariate predictor of relapse (HR 2.3 [1.16–4.68]), there was no statistically significant difference in relapse rates between adherent insulin users (those missing 0–5% of their shots) and non-insulin users.

To further evaluate the accuracy of adherence for predicting hyperglycemic relapse, we plotted receiver operating characteristic curves using adherence as the classification variable. The area under this receiver operating characteristic

curve was 0.69. The optimum cut point for identifying relapse represents ~8% of shots missed per week or one shot per week for an individual taking two shots a day.

Contrary to previous reports, we find that nonadherence to an insulin regimen, rather than insulin use per se, is the dominant determinant of glycemic deterioration. Individuals missing as little as one insulin shot per week are at high risk for relapse. We have not excluded the possibility that nonadherence to insulin may be a marker for nonadherence to other self-care behaviors that may have also contributed to relapse. Still, strategies to improve adherence to insulin regimens are required to provide sustained glycemic control.

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Perception of Overweight by Mexican Physicians and Teachers

In a study conducted among people with diabetes, McTigue et al. (1) reported that although most overweight people with diabetes accurately perceived

their weight as higher than ideal for health, many overestimated the weight that would be the healthiest for them. This result suggests that people with diabetes (and health care professionals and diabetes educators who should persuade them otherwise) see their weight as something of low importance. This could be the beginning of a trend toward reducing the importance of losing weight among health care providers. In 2004 and 2005 in Baja California, Mexico, we conducted a survey among 205 elementary school teachers, 80 parents, and 138 physicians working in Tijuana and Ensenada. The purpose of the survey was to compare their actual BMI with how they consider their weight status. We assessed how well they could estimate the healthy body size of an adult by asking them to pick the healthiest body size from the Stunkard (2) pictograms, modified by Rand and Wright for 35- to 45-year-old adults and 6- to 10-year-old boys and girls (3). The numbers of the scale are categorized into five groups (4): images 1 and 2 = underweight, images 3 and 4 = correct weight, images 5 = slightly overweight, images 6 and 7 = moderately overweight, and images 8 and 9 = very overweight.

A trained research assistant measured teachers' and parents' height and weight, and the physician estimated their own. Participants were asked how they consider their weight status with three possible answers: thin, in normal weight range, and overweight or obese. BMI measures were categorized by standard clinical definitions (4). The results showed that 67% of teachers and parents and 74% of physicians were either overweight or obese, 69% of teachers and parents and 73% of physicians in the normal weight range accurately perceived their weight status, and 87% of teachers and parents and 76% of physicians with overweight or obesity perceived themselves as overweight. A total of 22, 47, and 43% of the physicians picked as the healthy body size for an adult, boy, and girl, respectively, the equivalent of the slightly overweight figure. Thus, as in the study of McTigue et al. (1), most Mexican teachers and physicians living in the Mexico-U.S. border adequately identified their weight status and figure size, but many also overestimated the size that would be healthiest. In addition, many overestimated the weight that would be the healthiest for adults, boys, and girls. This suggests that Mexican teachers', parents', and physicians' overestimation of the healthiest size might in-

adequately influence the identification of healthy size, overweight, and obesity. Hence, in a society with a high prevalence of diabetes (5), of which even health care professionals are affected, this could prevent early diagnosis and effective preventive actions toward reducing the incidence of diabetes. Additionally, since Mexican health care personnel are mostly overweight, the Mexican population with diabetes might be more hesitant to take action to improve their lifestyles.

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