

Insulin Therapy: Questions This Issue

Dina E. Green, MD

Division of Endocrinology, Diabetes, and Bone Disease, Mount Sinai School of Medicine, New York, New York

Note: The goal of this section of *Insulin* is to provide answers to frequently asked questions regarding insulin therapy in diabetes. Readers are encouraged to submit their own questions by visiting www.InsulinJournal.com or by e-mailing insulin@elsevier.com. One or more questions will be addressed each issue.

QUESTION:

Our 25-year-old daughter has had type 1 diabetes mellitus (DM) since she was a toddler. Last year she had a baby and her body started producing insulin. However, it seems that the insulin is being produced at will, which makes it difficult to control. Our health care provider dismisses this, saying "it will probably stop again," but this has been going on for 15 months. Have you heard of this?

ANSWER:

It is unlikely that your daughter's pancreas has started making insulin again. For the first few days after the birth of a child, women become insulin sensitive. Even patients with type 1 DM often require little or no insulin. Usually, this is transient. A more likely explanation is that something in her lifestyle changed since she had a baby. Perhaps she is more active or eating differently, and this is affecting her insulin requirements. Another possibility with longstanding type 1 DM is that she has developed insulin antibodies, which are binding and releasing insulin erratically, complicating her glycemic control and predisposing her to unpredictable hypoglycemia.

QUESTION:

The October 2008 issue of *Insulin* contained a question regarding the use of oral diabetes medications in patients with type 1 DM. The author stated that thiazolidinediones (TZDs) may be used in some patients with type 1 DM. However, I've been told that TZDs are only effective when the patient's body is still producing insulin, not when any type of injectable insulin is required. Is this true?

ANSWER:

TZDs can be used in some patients with type 1 DM to increase insulin sensitization, although these drugs have not been approved by the US Food and Drug Administration for that purpose. There is some evidence for a role for TZDs in the type 1 DM population. In a randomized, controlled trial of 50 overweight adults with type 1 DM, administration of rosiglitazone resulted in improved glycemic control without an increase in insulin dosage. TZDs have been shown to be effective in patients with type 2 DM receiving exogenous insulin; hence, the theory that TZDs only affect endogenous insulin production is suspect.

QUESTION:

A reader recently asked how it is possible to tell with certainty (apart from clinical findings) whether a patient has type 1 DM (see the October 2008 issue of *Insulin* for added details and a related response).

ANSWER:

It is not uncommon to encounter patients who are presumed to have type 2 DM but actually have type 1 DM. Although the classic distinctions between the 2 types of diabetes (eg, age at diagnosis, weight, family history, presence of metabolic syndrome) are often valid, there are times when it is easy to be misled. Some individuals might have latent autoimmune diabetes of adulthood with clinical characteristics of both type 1 and type 2 DM and a delayed need for insulin. Other patients might have ketosis-prone diabetes, which involves many of the clinical features of type 2 DM; under stress, those individuals can develop diabetic ketoacidosis. It is important to always consider the diagnosis of type 1 DM and to use insulin until the diagnosis is further clarified. At times, C-peptide measurements can be helpful,

although it is often best to delay a C-peptide test until euglycemia has been achieved. Antibody testing, especially for glutamic acid decarboxylase antibodies, can also be helpful in establishing whether autoimmune diabetes is present.

QUESTION:

I have an insulin-resistant patient who has been taking high-dose steroids and insulin for 4 months, despite frequent attempts to taper the steroid dose. How long can she continue this treatment? I am concerned that her glycemic control will deteriorate.

ANSWER:

Patients receiving steroids often experience a substantial increase in insulin requirements. The typical pattern of hyperglycemia with steroids is predominantly postprandial. As such, patients treated with steroids often do well on a basal-bolus insulin regimen, with the balance weighted toward mealtime boluses. If this patient requires high-dose steroids, her insulin regimen should be titrated upward to achieve and maintain euglycemia. When it becomes feasible to taper her steroid dose, it will be important to be proactive in lowering her insulin dosages to avert hypoglycemia.

Disclaimer: The information provided here is general guidance, not medical advice. Be sure to talk to your physician or health care professional before changing your therapy.