

QUESTIONS From Symposium Participants

Q: What is the average maintenance dose of insulin glargine?

A: A person with T2DM will usually need about 0.4 to 0.6 U of basal insulin for each kilogram of body weight each day, but varying degrees of insulin resistance can cause wide variations in insulin requirement. There are actually a number of other self-titration algorithms from which to choose. One approach to start patients on glargine at 10 U a day and increase their dose by 1 U each day until an FPG level of 100 to 110 mg/dL is achieved. Because patients may be afraid to add “too much” insulin, it is helpful to give them an estimate of where they are likely to end up. For example, 100-kg patients will most likely need 40 to 60 U a day. They can be assured that such an amount is normal and encouraged to call their clinician if they find they exceed that amount. If they don't know what to expect, they may get to 15 U and just stop. The correct dosage of basal insulin is that which is required to reach target FPG of 100 to 110 mg/dL without complications like hypoglycemia, and in most studies the amount used is about 0.4 to 0.6 U/kg/d.

Q: Should pioglitazone or repaglinide be added to basal insulin instead of adding prandial insulin?

A: Both of these OADs will increase how efficiently the body uses the insulin on hand, by increasing peripheral glucose uptake via decreasing insulin resistance (pioglitazone) or enhancing mealtime insulin secretion (repaglinide). These strategies may be effective with basal insulin but have a downside in cost. Neither appears as a clear step beyond basal insulin in the ADA/EASD consensus algorithm. While a variety of treatment strategies may prove effective, the ADA/EASD consensus algorithm is aimed at crafting treatment strategies that are both effective and cost-efficient. Once committed to basal insulin, prandial insulin addition is likely the most cost-effective strategy for advancing therapy.

Q: Should patients with T2DM take guardian drugs?

A: By “guardian drugs,” the ADA means statins and aspirin, which help guard against CV events for which patients with T2DM are at high risk. The ADA standards recommend that most patients with T2DM, particularly those older than 45, take both, even if their cholesterol is normal, to protect against stroke and heart attack.

Q: Is there any value to homeostasis model assessment (HOMA) and other testing for insulin resistance?

A: Most patients with diabetes have T2DM, and there is so much variability in insulin resistance, insulin secretory capacity, and the impact of obesity on the disease that the clinical variable that truly is crucial is whether glucose is controlled. If the A1C value is abnormal, the primary goal is to get it controlled. There is no situation in which the result of HOMA or C-peptide results would change that approach. These are interesting and valuable research tools, but so far they have little practical clinical value in making the decision to advance therapy.

Q: How can insulin be dosed in long-term care patients if it is uncertain whether or how much the patient will eat?

A: Ideally, counting the carbohydrates taken in at each meal would be the norm, but that is unrealistic in many LTC settings. Instead, a weight-based measurement or conservative estimation of mealtime need can be used to establish the mealtime insulin dose. In the LTC environment rapid-acting analog mealtime insulin is a good choice because the insulin dose can easily be adjusted based on what is actually consumed. With rapid-acting analogs, there is no need to commit to giving the full dose before it is clear how much the individual will eat. These insulins are effective even if given 15 to 20 minutes after the meal commences, so the staff can tailor the dose to actual consumption.

Q: If patients must fast for morning glucose or other tests, should the nighttime basal insulin dose be changed?

A: Patients who are fasting for morning blood work should take their normal basal insulin dose before bed. The body produces basal insulin when people are not eating to counteract the sugar that is released by the liver to maintain normal body functions. It is normal to have basal insulin on board during nonmeal times. That said, patients having early morning tests should not alter their basal insulin dose. As an aside, keep in mind that postprandial sugars are more likely to reveal an abnormality in glucose control early on as opposed to FPG. Maybe it is a good idea to check for glucose problems in the non-fasting state.

Q: Are there specific guidelines for insulin therapy in the elderly, and particularly residents in long-term care settings?

A: Elderly patients with T2DM can present a management challenge and the challenge can be even greater in a “group care” situation, such as long-term care (LTC) facilities. Approximately 16% of individuals older than 75 had T2DM in 2005, and the percentage is expected to rise to 24% by 2020 and 28% by 2030. Yet only 20% of LTC residents with diabetes meet recommended glycemic goals, and 30% to 50% of LTC residents with diabetes receive no antihyperglycemic therapy. Although A1C targets can be relaxed somewhat for sicker elderly patients, those in LTC settings who use secretagogues or non-basal insulins are at special risk for hypoglycemia due to irregular mealtimes, erratic eating habits, and the potential for hypoglycemia unawareness. For these patients, analog prandial insulin offers a good option because it can be taken right at mealtime, allowing very specific dose adjustment as necessary. Rapid-acting analogs have several advantages for this population, including their brisk onset and short duration of action, which result in less between-meal hypoglycemia; flexible mealtime dosing; and consistent kinetics. Glulisine added to basal glargine before, as opposed to after, a meal yields similar results in terms of glycemic control. This flexibility allows the dose easily to be matched to the actual amount of food consumed, providing a more physiologic response and lessening the risk of hypoglycemia.