Editorials

Type 2 Diabetes: Updated Evidence Requires Updated Decision Making

ALLEN F. SHAUGHNESSY, PharmD, MMedEd, and DEBORAH R. ERLICH, MD, MMedEd
Tufts University, Boston, Massachusetts

DAVID C. SLAWSON, MD
University of Virginia, Charlottesville, Virginia

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Treatment of patients with type 2 diabetes mellitus seems simple: aim for close-to-normal fasting blood glucose and A1C levels. However, as discussed in the article by George et al. in this issue of *AFP*, normalizing blood glucose levels benefits only a small subset of patients.[1] A1C levels should be low enough to decrease symptoms but not low enough to risk hypoglycemia. For many patients, this range is 8% to 9% with a fasting blood glucose level less than 200 mg per dL (11.1 mmol per L).

This relaxed goal will be new and perhaps perplexing to many patients. But it shouldn't be. Although clinical practice guidelines are only now catching up,[2,3] the data refuting benefit of tight glycemic control have long been available. The U.K. Prospective Diabetes Study, published 17 years ago, found no mortality benefit and limited, if any, morbidity benefit of intensive glucose control.[4] As Dr. George's article mentions, three other studies confirmed a lack of mortality or morbidity benefit.[5-7]

So why are we still overtreating hyperglycemia? Although pharmaceutical marketing pressure, so-called quality indicators, and pay-for-performance incentives have had a role, a large part of the acceptance that "lower is better" hinges on a false belief that a pathophysiologic approach to decision making is always correct. It seems logical that reducing blood glucose levels to nondiabetic normal, no matter the risk or cost, should result in improved patient outcomes. But it doesn't. Today, an older patient with type 2 diabetes is more likely to be hospitalized for severe hypoglycemia than for hyperglycemia.[8]

How do we slay this dragon? First, wishful thinking must go. The goal of treating type 2 diabetes is to help patients live longer, healthier, productive lives. Unfortunately, normalizing blood glucose levels with pharmacology does not achieve this goal. Other than metformin, which has been shown to decrease mortality independent of its effect on glucose levels, all other available diabetes medications treat numbers, not patients.

Second, we must change the way we make decisions. Current education focuses too narrowly on disease pathophysiology. As a result, much medical care treats the individual as a complex engineering problem. Through a chain of reasoning that links symptoms and clinical findings to underlying dysfunction of organs, tissues, and, eventually, cells, we transmogrify patients into logic puzzles for which we devise treatments aimed at removing the abnormality. This approach does not work for type 2 diabetes. Instead, during our decision-making process, we need to put more weight on research that supports the goal of a longer, healthier, and productive life for patients.

There is still room for clinical experience. Many patients do not "fit" the current evidence, and clinicians need to improvise and consider the best available research findings, their own experience, and their patients' needs and values.[9] Some patients, despite the evidence, will want to aggressively reduce their blood glucose levels. For others, though, we need to refocus on helping them live longer and better. For type 2 diabetes, this means abandoning tight control of blood glucose for most patients, and instead addressing risks such as smoking, hypertension, and hyperlipidemia that will actually make a difference.[10]

Address correspondence to Allen F. Shaughnessy, PharmD, at allen.shaughnessy@tufts.edu. Reprints are not available from the authors.

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