New Guidelines for Managing Diabetes Tries to Re-Balance Harms and Benefits

By Chuck Dinerstein — March 5, 2018

The American College of Physicians (ACP), a professional society representing internal medicine, primary care physicians just released their newest guidance statement for managing diabetes. It is not a meta-analysis but considers the major guidelines [1] already published, their strengths, weaknesses, and differences - to assist clinicians in selecting among the evidence for a “best practices” approach. Given that the guidance was meant to be clinically relevant to primary care physicians the focus was on long-term management’s benefits and harms.

Background Frames the Question and the Evidence

An intact pancreas and endocrine system regulate glucose metabolism best, clinical management is beset by glucose levels that are both too high and too low. The clinical impact of these two conditions differ. A glucose level that is too high (hyperglycemia) presumably fuels conditions with long-term consequences conditions like nerve damage (neuropathy) or obstruction of small blood vessels resulting in heart problems (cardiovascular disease). A glucose level too low, termed hypoglycemia, makes itself clinically evident immediately, the ultimate short-term consequence. Those consequences include disorientation, imbalance and if left untreated death. Hypoglycemia is a real, here and now, harm. Hyperglycemia’s damages are more distant in time and result from a chain of events, so it is still harm, but not as feared as hypoglycemia. Where is the balance between the two?

While there are many ways to measure the dysregulation of glucose metabolism in diabetes, the use of HgA1C is the blood value most utilized in chronic management. A red blood cell lives for about 90 days and during its lifetime, the changing levels of glucose in the blood, the short-term
measure of diabetes, are memorialized as increasing amounts of glucose attached to the red blood cells’ hemoglobin – HgA1C captures the effectiveness of long-term management. HgA1C levels that are too high reflect poor short-term control and the possibility of more significant complications. Lower levels reflect tighter control, the blood sugar more often being closer to normal, rather than elevated.

Some clinicians favor tight control, attempting to model the pancreas and endocrine system, trading a bit more hypoglycemia for a bit less hyperglycemia, greater risk of short-term complications for a lower risk of long-term ones. Other clinicians, fearful of the dramatic onset and severity of hypoglycemia accept looser control, a bit more hyperglycemia and its long-term consequences. The new ACP guidelines address that question.

The newest guidance

The ACP provides four recommendations. The first is that physicians should personalize management of Type 2 diabetes for each of their patients - based on patient’s health, preferences, life expectancy and the costs of care, both fiscally and physically. There is no one-size fits all prescription.

The second recommendation is to maintain the HbA1C between 7 and 8%, control that is neither too tight or too loose. The studies where a target of 7% or less was used, “tighter control,” resulted in more hypoglycemia. These same studies, when looking at the long-term complications did demonstrate a “small absolute reduction” in eye changes, retinopathy, and the loss of protein, specifically one called albumen, in the urine, a sign of kidney dysfunction. But these microvascular events were surrogates for endpoints not measured, clinically significant eye and kidney disease. But the impact of these surrogates on actual clinical conditions, as well as diabetes-related death was not consistently reduced during the next 5 to 10 year period. The impact of this “tighter control,” on the long-term complications was where the ACP judgment, the judgment of clinicians, not statisticians, was evident. Management with a goal of 7% or less was from a clinical view, many short-term harms with inconsistent long-term benefit.

There is another judgment at work within this second recommendation; it considers a patient’s longevity. There is reasonable evidence that those surrogates finally become clinical manifest given enough time, fifteen to twenty years. So from a practical point of view, why invoke a 20-year treatment for a 15-year guy? Especially if that treatment may have increased short-term risks that can kill you and eliminate the need for a twenty-year plan. The final two recommendations flow logically from exercising this clinical judgment.

The third recommendation is that for patients with Type 2 diabetes, a HgA1C of 6.5% is too stringent and that pharmacologic management should be “deintensified” a therapeutic way of saying less is more. The fourth recommendation is that those patients with life expectancies of less than ten years, because of age or chronic conditions known to reduce life expectancy into this range should be treated to prevent symptoms, that HgA1C not be used as a target at all. Again, the less is more judgment – I would often describe this group of clinically more frail patients as valued antiques, objects you polish lightly because thoroughly scrubbing them causes them to break. The ACP includes patients in nursing homes in this last group, I would disagree, not all
nursing home patients meet those other clinical criteria, they may be in nursing homes due to socioeconomic circumstances. The ACP knows this too, but I think they include the language because of an unspoken context found in the last paragraph of the guidance.

**Evidence serves but does not replace judgment**

The federal government, to measure the “quality” of the “work product” of the “provider” workforce has deemed HgA1C a marker of quality. A HgA1C > 9% is a measure of poor quality by federal criteria for all patients. These same criteria, based on the guidelines for the American Diabetes Association, recommends a level of less than 7% for all patients - the level associated with more short-term harms. The federal guidelines determine payment incentives and punishments to providers and are intended to change physician prescribing behavior, so they exert quite a bit of control.

The allure of evidence-based medicine is that it sounds so objective, free of bias, free of judgment. But the ACP recommendations are at their core a subjective judgment, a balancing act of tradeoffs – in this case, short versus long-term harms. The choice of tradeoffs accounts for why more than one “best practice” can exist and why the physician's role is not to apply treatment by rote, but based on individual judgments. The ACP guidelines provide latitude for judgment, a HgA1C of 7 to 8% as well as some therapeutic guardrails, patients with life expectancies of less than ten years should not have these targets at all. In the same way that mandatory sentencing guidelines result in miscarriages of justice, federal compulsory quality measures may result in unintendedly poor care.

The new guidelines reflect the judgment of clinicians based on the evidence from all the meta-analyses. Should we trust the statisticians who can derive p-values, and risk reductions and hazard ratios or do we take their findings, and mix them with the day to day vagaries of practice, where the rubber meets the road, and trust the judgment of physicians in how to apply this information?