**Tight Control**
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**Story from the Front Lines:** A woman in her 80s returned to clinic for management of her chronic health issues. She has a history of stroke, congestive heart failure, atrial fibrillation, coronary artery disease and Type 2 diabetes. She has been taking glyburide and sitagliptin for her diabetes. She manages her own medications and lives independently. She has had diabetes for many years and is very concerned about the risks of hyperglycemia. Due to this concern she has restricted her diet and she carefully avoids all sugary foods. She denies symptomatic hypoglycemia. Her HbA1c three months ago was 6.5.

**Teachable Moment:** The 2011 American Diabetes Association Standards of Medical Care recommends a goal hemoglobin A1c of less than 7% to reduce to microvascular and neuropathic complications of diabetes.\(^1\) Two recent trials have addressed this question for older patients with type 2 diabetes. ADVANCE randomized patients to standard care or tight control with a goal A1c of less than 6.5. Primary outcomes were a composite of microvascular and macrovascular complications. The study had a positive result in favor of tight control but the results were driven by the decreased rate of nephropathy.\(^2\) The second trial that addressed this question was ACCORD. The study compared a goal A1c of less than 6 to 7-7.9. The study showed an increase in all cause mortality for patients in the tight control group.\(^3\)

Determining optimal therapeutic goals in the geriatric population is important due to the high prevalence of Type 2 diabetes and the risks of hypoglycemia and polypharmacy. In 2012, 26.9 percent of United States residents 65 years or older had diabetes.\(^4\) Applying current trial data to this population is troublesome because randomized trials focusing on optimal glycemic targets have often excluded elderly patients. In a Cochrane Review from 2011, only four of 20 trials included subjects with a mean age over 65 and only two of those four studies enrolled more than 100 participants.\(^5\) The other problem with the current guidelines is that many of these studies were performed in newly diagnosed diabetics. For example, in UKPDS 34 patients had a mean age of 53 and the inclusion criteria specified newly diagnosed diabetics who were followed for 10 years.\(^3\) This is important because older diabetics are less likely to be newly diagnosed.\(^6\) Given that it takes 10 years to realize a benefit from these intensive therapies, life expectancy needs to be taken into account. Often these patients have numerous comorbidities with life expectancy less than 10 years. These considerations call into question the benefits of tight glucose control in this population which may be outweighed by the harms from hypoglycemia.

Intensive control of blood sugars often requires multiple medications, many of which carry significant risk of hypoglycemia. In ADVANCE 2.7% of patients in the intensive care group experienced hypoglycemia requiring the aid of another person as opposed to 1.5% of the control group.\(^2\) While these rates are low in a middle aged population, the elderly are at much higher risk. Observational studies suggest that increasing age and the
use of five or more medications are all independent risk factors for hypoglycemic episodes for patients treated with insulin or sulfonylureas. The patient in this case was on a sulfonylurea with a blood sugar with an hemoglobin A1c below the goal for a healthy middle aged woman. Given that her life expectancy is under 10 years, the benefits of tight control would be minimal and her risk of hypoglycemia is elevated due to her risk factors. Adjusting her A1c goal based on this information seems appropriate. The American Geriatric Society has released “Choosing Wisely” guidelines to help clinicians. They stratify A1c goals based on life expectancy. If we assumed a 5-10 year life expectancy for this patient, they recommend an A1c goal of 7.5-8.