

# Clinical Guidelines

## Treatment of Elderly Patients with Diabetes Should Be Individualized and Dynamic

Justin Sherman, PharmD

At least 20% of patients older than 65 years currently have diabetes. They make up a growing segment of the health care population—a segment that is expected to grow even more rapidly over the next few decades.<sup>1,2</sup>

Treatment approaches should be highly individualized and dynamic. Therefore, consider the following questions to optimize the management of this special group of patients.

### Should the Same Treatment Goals Be Used for Elderly Individuals?

The American Diabetes Association (ADA) guidelines dictate that a goal level of hemoglobin A1C should be less than 7%.<sup>2</sup> For an ideal patient, clinicians should aggressively treat to reduce A1C to less than 6%. Yet, elderly patients (older than 65 years), young patients (younger than 13 years), and those with limited life expectancies, comorbid conditions, or frequent or severe hypoglycemia may need less stringent goals.

Thus, the level of control depends on individually weighing risk versus benefit. In contrast with their nondiabetic counterparts, diabetic elderly patients are at risk for increased comorbidity, cognitive and physical impairment, depression, falls, and polypharmacy.<sup>2</sup> Not all elderly persons with diabetes, however, have the same risk. Some are active, with little comorbidity and

reasonable life expectancies. The age of onset of the diabetes—middle age versus elderly—also may influence disease burden and in the future may dictate different treatment goals.<sup>3</sup> In addition, the duration of the diabetes and other factors influence disease burden.

A general goal, however, is this: manage diabetes intensively for all who benefit, regardless of age. Those who will likely benefit from long-term management (those with a life span of 10 or more years and who are cognitively aware, active, and compliant with intense self-management) should maintain the same goals as younger patients.<sup>2</sup>

### What Treatment Will Lower the Risk of Cardiovascular Complications?

No long-term studies have been conducted to demonstrate the benefits of tight glycemic, blood pressure, and lipid control in diabetic elderly patients, and large-scale trials have been criticized for excluding elderly patients.<sup>2,4</sup> Yet, strong evidence exists to aggressively treat hypertension—and possibly lipids—rather than treating hyperglycemia alone.

For example, the blood pressure goal for diabetic elderly persons is still less than 130/80 mm Hg. In the Heart Outcomes Prevention Evaluation (HOPE) study, aggressively treating hypertension with ramipril lowered the risk for major cardiovascular events. It showed a 25% greater benefit among diabetic elderly study participants.<sup>5</sup> In the Systolic Hypertension in the Elderly Program (SHEP) trial, chlorthalidone reduced the risk of coronary events.<sup>6</sup>

In the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), chlorthalidone was compared with amlodipine, lisinopril, and doxazosin.<sup>7</sup> The thiazide-like diuretic (doxazosin) reduced cardiovascular disease risk and heart failure among diabetic elderly study participants. This finding is consistent with using hydrochlorothiazide for isolated systolic hypertension, which is common in elderly individuals.

However, the Seventh Report of the Joint National Committee on hypertension (JNC-7) recognizes that angiotensin-converting enzyme (ACE) inhibitors have renoprotective effects, and that often 2 or more medications are needed for diabetic patients to achieve target blood pressure.<sup>8</sup>

Often, comorbidities dictate using ACE inhibitors or angiotensin receptor blockers and beta-blockers. Yet, beta-blockers can mask hypoglycemia, alpha-blockers can cause orthostasis, and multiple medications can cause hypotension. Although standard doses often help elderly patients reach the goal, initial doses may need to be lower than those for younger patients.<sup>8</sup>

Finally, subanalyses of major studies give indirect evidence that antihyperlipidemic treatment can reduce myocardial infarction, coronary death, and stroke.<sup>9</sup> Although many older patients deal with muscle pain, specific muscular adverse effects with statins—including rhabdomyolysis—are not age related. Again, treatment of hyperlipidemia depends on risk versus benefit. Because diabetic elderly individuals have an increased risk for cardiovascular disease, ADA guidelines advocate aggressively managing lipids and using aspirin unless otherwise indicated.<sup>2</sup>

### **What Recommendations Will Avoid Hypoglycemia?**

Of the potential complications from intensive glycemic control, hypoglycemia is in the forefront of the clinician's mind. Common symptoms include fatigue, headache, difficulty concentrating, and excessive hunger, but they can manifest differently in elderly people (eg, blurred vision and dizziness often are experienced).<sup>10</sup> Sometimes, symptoms are blunted because of impaired cognition or autonomic neuropathy. Along with advanced age, factors that increase hypoglycemia risk include comorbidities, poor behavioral compliance, the use of certain medications, and polypharmacy.

Many elderly patients have not adapted their diets to their diabetes. Because elderly individuals are satiated more quickly and food loses its taste, they consume fewer meals. But patients with diabetes should eat smaller meals more often. Thus those who only eat 1 or 2 meals daily may have more postprandial hyperglycemia.

Maladaptive eating behaviors are compounded when patients take medications incongruently with meals—especially sulfonylureas and insulin. Dietary errors account for 53% of hypoglycemic episodes when the patient has skipped a particular meal.<sup>10</sup> Also, patients may take sulfonylureas and rapid-acting insulin after meals, and the result may be postprandial hypoglycemia. For example, the Diabetes Outcomes in Veterans Study showed an increased hypoglycemic risk, depending on the number of insulin injections per

day and whether rapid-acting insulin was used.<sup>11</sup> In fact, hypoglycemia occurs 3 times more frequently with insulin than oral medications.<sup>10</sup>

Whereas sulfonylureas and fast-acting insulin can cause hypoglycemia, thiazolidinediones and metformin generally do not. Second-generation sulfonylureas are less problematic than first-generation agents. These agents usually are prescribed twice daily, and doses should be split appropriately (for example, 10 mg of glyburide twice daily rather than 20 mg once daily). Also, nonsulfonylurea secretagogues lower postprandial glucose levels with relatively less hypoglycemic incidents. Therefore, the clinician might consider switching a patient with significant hypoglycemia (once per week or significant symptoms) to one of these latter agents. Still, sulfonylureas reduce A1C by 1% to 2% and are effective agents, so any decision to change medications should be judicious and individualized.

Finally, the need for tight control of glycemia and comorbidities often leads to polypharmacy.<sup>12</sup> Both diabetes and hypertension frequently require multiple medications. Thus, polypharmacy can increase adverse effects and the potential for medication interactions. Consequences result when medications do not achieve goal levels, however, so give careful consideration to stopping medications.

### **Polypharmacy and Multiple Care Providers**

Polypharmacy is compounded when patients use multiple physicians and obtain prescriptions from several pharmacies. Simple measures can prevent polypharmacy, such as instructing patients to maintain an active

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list of their medications, including over-the-counter drugs and nutritional supplements. Single medications that can treat multiple conditions should be used when feasible. Patients with multiple providers should coordinate medications at 1 pharmacy. Education of patients also is key: they should understand the indications and possible adverse effects of each medication, as well as their treatment goals.

## Conclusion

Treatment goals for elderly patients with diabetes should be individualized, but in many cases those goals should be no less aggressive than those for younger patients. This population is highly susceptible to cardiovascular complications and thus should be treated accordingly, in terms of optimizing medications and treatment goals. Plans may need to be changed, however, because of challenges that are uniquely related to elderly patients, including severe hypoglycemia and polypharmacy. *MPM*

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**Dr. Sherman is associate professor of pharmacy practice at the University of Louisiana at Monroe College of Pharmacy.**

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