

## **Suspected hypoglycemia in an elderly woman: goals for appropriate diabetes management in the geriatric patient**

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### **Story from the front lines**

A woman in her 70s presented to clinic to establish care. Her only complaint at the time of presentation was lightheadedness and dizziness, most prominent in the morning an hour or two after taking medications. Her past medical history included type 2 diabetes, hypertension, peripheral vascular disease, and chronic kidney disease. Her diabetic regimen included metformin 1000 mg twice daily and glipizide 10 mg daily. Her anti-hypertensive medications included hydralazine 50 mg twice daily, labetalol 300 mg twice daily, and losartan 50 mg daily. She did not have a glucometer to check her blood glucose at home. A1C at the time of appointment was 5.8%. Previous A1C measurements in the past several years had been below 7%. Recent blood pressures ranged from 150-190 systolic over 70-90 diastolic.

### **Teachable moment**

In the Choosing Wisely guidelines, the American Geriatrics Society (AGS) recommends an A1C goal of 7-7.5% among those with a life expectancy greater than 10 years, and 7.5-8% in those with a moderate life expectancy less than 10 years (1). In this patient, her A1C goal was significantly under even the most stringent of recommended guidelines. Data suggest that the preventative benefits of glycemic control occur after at least 10 years for macrovascular and 8 years for microvascular events (2). The number of years needed to see potential cardiovascular benefit of intensive glycemic control exceeds the life expectancy of many elderly patients, particularly those with complex medical problems (1). Additionally, the ACCORD trial found an increase in mortality associated with intensive glycemic control (defined as goal A1C<6%) compared with a goal A1C 7-7.9% (3). The average age of participants in this trial was 62 ± 7 years. Multiple studies have found an increased risk of symptomatic hypoglycemia associated with intensive glycemic control among all adults (2, 3). Although there is limited data on the effects of hypoglycemia and mortality risk among intensive glycemic control in geriatric populations, one observational study found a correlation between falls and decreasing A1C (4). Another found that a quarter of emergency hospitalizations for adverse drug events among geriatric patients could be attributed to glucose lowering agents, including insulin (5). Nearly all of these hospitalizations were for hypoglycemia.

The etiology of hypoglycemia is attributed to oral hypoglycemic agents and the use of insulin. Data have shown that second and third line agents for diabetes treatment have smaller reductions in A1C than they would if they were used as monotherapy (2). Polypharmacy not only increases the risk of hypoglycemia with diminishing returns on A1C reduction, it also places patients at increased risk of drug-drug interactions, increases the pill burden, and medication cost to the patient (2). In concordance with these data, the AGS prefers metformin for the treatment of diabetes among geriatric patients, given the risks of hypoglycemia (1).

Cross-sectional data from NHANES found that the majority of adults 65 years and older had an A1C of less than 7% and that over half of those participants were being treated with a sulfonylurea and/or insulin (6). This implies that many elderly adults are being over-treated for their diabetes. Although few studies have specifically examined the role of aggressive glycemic control in the geriatric population, the increased risk of mortality and hypoglycemia established in adult populations and the diminishing returns of

preventing cardiovascular outcomes given geriatric life expectancy certainly support the AGS's guidelines for less aggressive A1C targets among older adults. In the case of our patient, she was on multiple medications for her diabetes, including an oral hypoglycemic, and was experiencing symptoms consistent with hypoglycemia at home. Her A1C was below goals set by the AGS. Given her A1C and symptoms of suspected hypoglycemia, the glipizide was discontinued and metformin was reduced to 500 mg twice daily. At follow up appointment her symptoms of lightheadedness and dizziness had resolved.

**References:**

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