Diabetes and Dementia in LTC

Lee A. Jennings, MD, MSHS

Associate Professor and Chief, Section of Geriatrics

University of Oklahoma Health Sciences Center

A case…

- 78 year-old female with Alzheimer's Disease and Diabetes.
- Long-term care resident, mostly uses wheelchair for mobility, can transfer with a walker and 1-person assist
- Husband visits most days, likes to bring her treats to eat
- Having elevated blood sugars in the afternoons (300s), but also sometimes has low blood sugars, 40-50s, most recently in the morning.
- What else do you want to know?

Questions…

- What is her ideal A1c? Blood sugar range? What's our goal?
- How does her blood sugar pattern relate to her meal times or when she is fasted (early morning)?
- What are her eating habits? How much of her meals is she eating? Does she come to the dining room? Does she need help with meals?
- What are these treats her husband is bringing?
- Is she refusing her insulin/diabetes medications? And if so, why?
- Could she be ill? Or is there a new medication impacting appetite/blood sugar?
- Do we need to change when/how often we are checking her blood sugar?

What's the goal blood sugar/A1C?

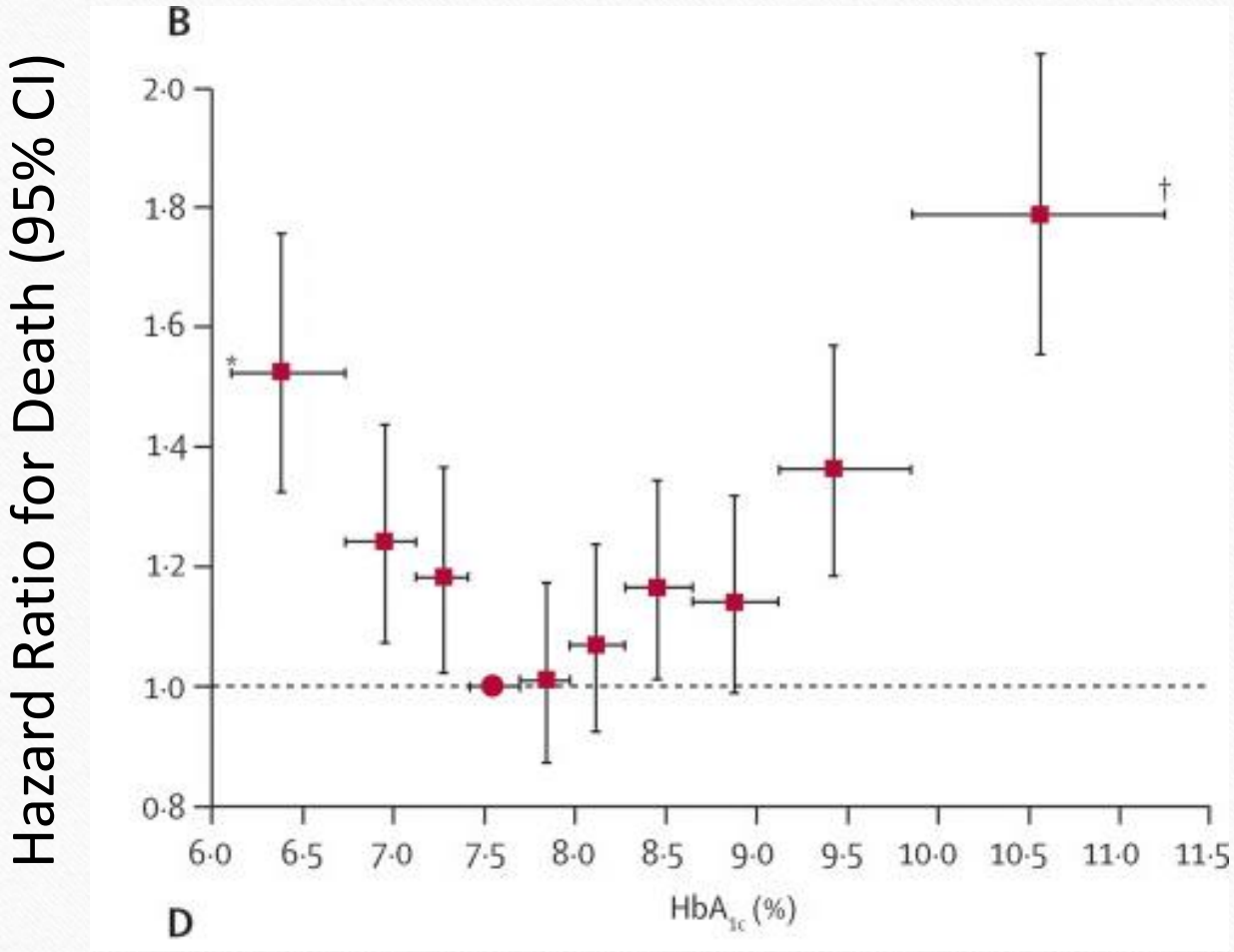
- HgA1c is a measure of the average blood glucose over the last 3 months.
- Goal depends on functional status, severity of illness, and overall life expectancy. Aiming for higher blood sugar goals in frailer patients.
- Greater risk of hypoglycemia with more intensive blood sugar control (more diabetes medications, especially insulin).
- Hypoglycemia is MUCH riskier than hyperglycemia.
- Need to take diabetes medications for about 10 years on average to see benefits for heart/kidneys/eyes. Most of our older nursing home patients do not have a life expectancy of 10 years.
- Choosing Wisely Recommendation: **Avoid using medications to achieve hemoglobin A1c <7.5% in most adults age 65 and older; moderate control is generally better.**

What's the goal blood sugar/A1C?

- For adults >65, moderate control (A1c target **7.5%–8.0%**) is recommended.
- For adults >65 with extensive comorbidities, limited life expectancy, and functional or cognitive impairments: A1c target **8.0%–9.0%**
- **For most nursing home patients, goal A1c is 8-9, average blood glucose of ~200, and avoid >350 and <70.**

HgA1c	Average Blood Glucose
6	126
7	154
8	183
9	212
10	240
11	269
12	298

Survival and HgbA1c in Type 2 DM



A1c

The Lancet, Volume 375, Issue 9713, 2010, 481 - 489

Symptoms of HYPOglycemia

- Confusion (common, especially in dementia)
- Lethargy, sleepiness
- Sweating, tremor
- Feeling lightheaded, dizzy, faint
- Weakness
- Could lead to a fall
- Patients with dementia may not be able to communicate symptoms well

Managing Hypoglycemia

- Glucose tablets, hard candy, sweetened fruit juice
- Glucagon kit (subcutaneous, intramuscular, or nasal)
- Follow with snack or meal to prevent glucose from falling again
- Recheck in 15 mins, if <70 may need to retreat.
- Probably needs diabetes medication adjustment.
- If patients do not eat regular meals, can give insulin immediately after a meal to better match the dose of insulin to the meal size and prevent hypoglycemia, or consider switching to basal insulin once or twice a day only.
- Hold insulin or oral hypoglycemic medications (e.g., glipizide) if a patient skips a meal.

Symptoms of HYPERglycemia

- Increased urination and thirst
- Dehydration
- Abdominal pain, nausea and vomiting
- Confusion if severe
- May be asymptomatic

Glucose Monitoring

- Regular glucose monitoring is necessary if patient taking insulin (check before you give insulin)
  - Before meals and at bedtime (if taking insulin before meals and at bedtime)
  - Bedtime and morning (fasted) if taking only once a day long-acting insulin
  - May also check 2-3 hrs AFTER meals if suspect high blood sugars after eating → can help adjust dose of insulin
- In stable patients on oral diabetes medications, can check a few times per week in the morning or before dinner.
- Repeated fingersticks hurt and can be burdensome if patient's diabetes is stable.
- Consider simplifying medication regimens to reduce fingersticks in frail patients.
- Continuous glucose monitoring devices
  - Applied like a patch on a patient's arm
  - Measure glucose levels every 5 to 15 minutes for 10 to 14 days.
  - Provides more data to help with medication adjustment, maybe helpful for difficult to control patients

Supporting Eating

- Take meals in the dining room (social setting)
- 1:1 assistance with meals, opening packaging, help with feeding
- Assistive devices if tremor or other impairments → can ask occupational therapist for help (e.g., weighted glass or silverware)
- Serve favorite foods, liberalize diet
- Review medications. Donepezil frequently causes stomach upset and weight loss in dementia.
- Exercise, increased activity can increase appetite.
- Treat depression.
- Appetite stimulants are not effective and have side effects.

Back to our case…

- Her husband had brought her a large container of M&Ms, her favorite. She would eat them all afternoon in her room. She did not have good insight into how much she had eaten due to her dementia.
- Solution→ remove large container of M&Ms, provide small packages when she requested. She requested periodically, but not a lot. Blood sugar improved without medication increase, and long-acting insulin evening dose was decreased and split into a morning and evening dose to reduce morning low sugars.
- She continued to have occasional high sugars, no more low sugars, and her repeat A1c was 8.5 (at goal for her).