Long-Term Care Updates

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2023 Updates to the American Diabetes Association Standards of Care in Diabetes Guideline

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Introduction

Diabetes affects 37.3 million people or 11.3% of the United States population. The percentage of adults with diabetes increases with age. According to the Centers for Disease Control and Prevention (CDC), 15.9 million geriatric individuals or 29.2% of the geriatric population had diabetes in 2019.[1] With nearly one-third of the geriatric population affected by this disease, it is important for health care practitioners to review the American Diabetes Association (ADA) Standards of Care (SOC) in Diabetes annual guideline. The ADA SOC 2023 updates pertaining to geriatric care, specifically pharmacotherapy, will be summarized in this article.

Improving care and promoting population health

The ADA added a new recommendation for the involvement of community health workers to aid in the management of diabetes and cardiovascular risk factors by addressing social determinants of health (SDOH) in the geriatric population as these difficulties impair quality of life and increase risk of functional dependency. SDOH such as food insecurity can increase the risk of uncontrolled hyperglycemia due to intake of inexpensive carb rich foods or hypoglycemia from low food intake.[2,3]

Prevention of type 2 diabetes and associated comorbidities

With regards to the prevention/delay of type 2 diabetes, the ADA added a statement specific to statins, noting that the use of statins may increase the risk of type 2 diabetes in those already at high risk. Regular monitoring of glucose status and reinforcement of prevention strategies are recommended, but the discontinuation of statins is NOT recommended (level B evidence).[3]

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A new recommendation was added suggesting that pioglitazone may be considered to reduce the risk of stroke or myocardial infarction in patients with a history of stroke and evidence of insulin resistance and prediabetes. However, the ADA notes that the risk of weight gain, edema, and fracture should be balanced against the benefit of therapy with pioglitazone (level A evidence). A lower dose of pioglitazone could be considered to reduce adverse effects (level C evidence).[3]

The ADA now recommends that pharmacotherapy for indications such as weight management, minimizing the progression of hyperglycemia, or cardiovascular risk reduction may be considered to support person-centered care goals (level B evidence), with more intensive therapy considered in those at high risk of diabetes development.[3]

Older adults and glycemic goals

Of importance in the diabetic geriatric population is the risk of hypoglycemia. The SOC update strengthens the language in favor of continuous glucose monitoring (CGM) in older patients for hypoglycemia management. The ADA recommends the use of CGM with type 1 diabetes (level A evidence). It also asks providers to consider CGM in patients with type 2 diabetes who are on multiple doses of insulin (level B evidence). Additionally, despite the lack of evidence, the use of CGM to assess the risk of hypoglycemia in older adults on sulfonylureas or insulin should be considered (level E evidence). The ADA changed the glycemic target time for patients using CGM with frailty or at high risk of hypoglycemia; the recommended target is now >50% time in range and <1% time below range (level B evidence). Previously, the time in range and below range were the same for all patients (>70% and <4%, respectively). The ADA noted that patients should be educated regarding substances and other factors that may affect CGM accuracy (Table 1) (level of evidence C). Lastly, the ADA acknowledged and made separate recommendations on deintensification of goals and simplification of complex regimens as two strategies to reduce the risk of hypoglycemia in this population (level B evidence).[3]

Table 1. Substances that may interfere with CGM[3]

Substance	System(s) affected	Result
Acetaminophen (any dose)	Medtronic Guardian	Higher sensor readings than actual glucose
Acetaminophen >4g/day	Dexcom G6	
Alcohol	Medtronic Guardian	
Hydroxyurea	Dexcom G6 Medtronic Guardian	
Mannitol	Senseonics Eversense	Sensor bias within therapeutic concentration ranges
Tetracycline	Senseonics Eversense	
Vitamin C >500mg/day	Freestyle Libre	Higher sensor readings than actual glucose

Pharmacotherapy for glycemic control

The ADA added a statement noting that in patients with type 2 diabetes and established or high risk of atherosclerotic cardiovascular disease, heart failure, or chronic kidney disease, the treatment regimen should include agents that reduce cardiorenal risk (evidence level A). A statement was also added recommending pharmacotherapy (including combination therapy) that provides adequate efficacy to achieve and maintain treatment goals (evidence level A). Additionally, pharmacotherapy should include approaches that support weight management goals (evidence level A). The ADA recognizes that tirzepatide, a new glucagon-like peptide-1/ glucose-dependent insulinotropic polypeptide (GLP-1/GIP) receptor agonist, is an option for glucose-lowering that may also provide a weight loss effect.[3]

The ADA maintains in this update that there is no evidence to support the use of dietary supplements such as vitamins, minerals, herbs, or spices for glycemic control (level C evidence). Additionally, a new statement suggests that there may be evidence of harm for certain individuals using beta carotene supplements (level B evidence).[3] This is based on a 2022 U.S. Preventative Task Force statement which noted that the harms of beta carotene outweighed the benefit as its use was associated with an increased risk of lung cancer and cardiovascular mortality.[4]

Cardiovascular and chronic kidney disease

The ADA revised its hypertension definition to match the American College of Cardiology, the American Heart Association, and evidence from recent trials. The Strategy of Blood Pressure Intervention in the Elderly Hypertensive Patients (STEP) trial, published in September 2021, assessed a blood pressure goal of $<$130/80 mmHg compared to the standard goals for elderly patients (60-80 years old). The study found lowered risk of the primary composite outcome of stroke, acute coronary syndrome, acute decompensated heart failure, coronary revascularization, atrial fibrillation, or death from cardiovascular causes in the $<$130/80 mmHg group compared to the standard group. Although there was an increased risk of hypotension (3.4% in treatment group versus 2.6% in standard group), there were no significant differences in other adverse events, including dizziness, syncope, or fractures. The ADA now recommends a target goal of $<$130/80 mmHg for all elderly patients except those with very complex patient characteristics or who are in poor health (long-term care patients or those with end-stage chronic illnesses, moderate to severe cognitive impairment, or $\geq$2 activities of daily living impairments). In these very complex patients, the blood pressure goal may be raised to $<$140/90 mmHg.[3]

As mentioned previously, the ADA addresses the benefit to harm balance of statins. Meta-analysis suggests that the cardiovascular and mortality benefits outweigh the risk of increased glucose. Thus, the ADA recommends against the discontinuance of a statin but rather encourages regular glucose monitoring. With regards to primary prevention, the ADA now recommends use of a high-intensity statin in patients with diabetes aged 40 to 75 years at higher cardiovascular risk with the goal of reducing LDL cholesterol by at least 50% and achieving a level of $<$70mg/dL (level of evidence B). The addition of ezetimibe or a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor to maximally tolerated statin therapy may also be considered in these individuals (level of evidence C). The ADA suggests that, in patients with diabetes over 75 years, it may be reasonable to continue statin therapy (level of evidence B) or initiate moderate-intensity statin therapy after a benefit versus risk discussion (level of evidence C). With regards to secondary prevention, high-intensity statin therapy should again be used with a goal of reducing LDL cholesterol by at least 50% and achieving a level of $<$55mg/dL. If the goal is not reached, the addition of ezetimibe or a PCSK9 inhibitor is recommended (level of evidence B).[3]

The ADA added a recommendation for the use of a sodium-glucose cotransporter-2 (SGLT2) inhibitor with proven cardiovascular benefit in patients with type 2 diabetes and heart failure with preserved or reduced ejection fraction to improve symptoms, physical limitations, and quality of life (level of evidence A).[3]

Finerenone is now recommended in patients with type 2 diabetes and chronic kidney disease with albuminuria who are on a maximum tolerated dose of an angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (level A evidence). Finerenone has demonstrated improved cardiovascular outcomes and reduced chronic kidney disease progression in this population.[3]

Neuropathy

Previously, the ADA recommended pregabalin, duloxetine, or gabapentin as first line agents for the treatment of neuropathic pain in diabetes.[5] The 2023 update now includes gabapentinoids, serotonin-norepinephrine reuptake inhibitors, tricyclic antidepressants, and sodium channel blockers as initial therapy options (level of evidence A). A referral to a neurologist or pain control specialist is recommended if pain control is not achieved (level of evidence E).

Summary

The 2023 ADA SOC guideline includes notable updates to recommendations regarding prevention of diabetes, glycemic goals and control, cardiovascular and renal disease, neuropathy, and population health. Updates also reflect incorporation of person-first and inclusive language to empower patients with diabetes, recognizing that the patient is the center of their diabetes care. The ADA recognizes that more studies are needed to address diabetes and its complications in the long-term care setting and recommends facilities develop institution-specific procedures for prevention and management of hypoglycemia.[3]

References

1. Prevalence of Both Diagnosed and Undiagnosed Diabetes. Centers for Disease Control and Prevention. https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-undiagnosed-diabetes.html. Updated September 30, 2022. Accessed December 30, 2022.
2. Walker RJ, Strom Williams J, Egede LE. Influence of race, ethnicity, and social determinants of health on diabetes outcomes. *Am J Med Sci*. 2016;351(4):366-373.
3. American Diabetes Association. Standards of Care in Diabetes-2023. *Diabetes Care*. 2023;46(Supplement_1):S1-S291.
4. US Preventive Services Task Force, Mangione CM, Barry MJ, et al. Vitamin, mineral, and multivitamin supplementation to prevent cardiovascular disease and cancer: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2022;327(23):2326-2333.
5. American Diabetes Association. Standards of Care in Diabetes-2022. *Diabetes Care*. 2022;45(Supplement_1):S1-S264.

Appendix 1. ADA Levels of Evidence[3]

Level A: Clear evidence from well-conducted, generalizable randomized controlled trials that are adequately powered or supportive evidence from well-conducted randomized controlled trials that are adequately powered

Level B: Supportive evidence from well-conducted cohort studies or supportive evidence from a well-conducted case-control study

Level C: Supportive evidence from poorly controlled or uncontrolled studies or conflicting evidence with the weight of evidence supporting the recommendation

Level E: Expert consensus or clinical experience