

END  2019

E02. Diabetes in Older Adults Guideline: *An Endocrine Society Clinical Practice Guideline*

Read the guideline and associated resources by navigating to endocrine.org/2019Diabetes

Guideline Writing Committee

Derek LeRoith, MD, PhD (Chair)

Geert-Jan Biessels, PhD

Susan Braithwaite, MD

Felipe F. Casanueva, MD, PhD

Boris Draznin, MD

Jeffrey B. Halter, MD, PhD

Irl B. Hirsch, MD

Marie E. McDonnell, MD

Mark E. Molitch, MD

M. Hassan Murad, MD, MPH

Alan J. Sinclair, MSc, MD

Plenary Panel

Session Moderator:

- Ann Peters, MD
 - Professor of Medicine at the Keck School of Medicine, University of Southern California

Panelist:

- Derek LeRoith, MD, PhD
 - Professor of Medicine Endocrinology, Diabetes, and Bone Disease, Mount Sinai Medical Center
- Marie E. McDonnell, MD
 - Director, Brigham and Women's Diabetes Program, Brigham and Women's Hospital, Harvard Medical School
- Mark E. Molitch, MD
 - Professor of Endocrinology, Northwestern University Feinberg Medical School

Disclosures

Ann Peters, MD - Advisory Board Member: Abbott Laboratories, Eli Lilly & Company, Lexicon Pharmaceuticals, Inc., MannKind Corporation, Merck, Novo Nordisk, Sanofi Grant Recipient: AstraZeneca, MannKind Corporation, Dexcom Speaker: Novo Nordisk

Derek LeRoith, MD, PhD – Consultant: AstraZeneca, MannKind Speaker: Janssen Global Services

Marie E. McDonnell, MD – No conflicts of interest

Mark E. Molitch, MD – Consultant: Merck Sharp & Dohme, Janssen Global Services, Chiasma, Novartis Member DSMB: Merck Sharp & Dohme, Pfizer

Access Guideline and Other Resources

Guideline

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Guideline Resource Page

endocrine.org/2019Diabetes

Includes links to:

- Full published guideline
- Point of Care Tools in CPG Mobile App
- Online patient resources
- Clinician Education

Plenary Format

1. Overview of Diabetes in Older Adults Guidelines (Dr. LeRoith)
2. Case #1: Screening
 - a. Multiple choice question with audience response
 - b. Panel discussion of diagnosis case
 - c. Relevant guideline recommendations
 - Audience may submit questions at any time during case
3. Case #2: Glucose Target – Assess Overall Health
Same format as Case #1
4. Case #3: Medication Selection to Minimize Hypoglycemia
Same format as Case #1

Plenary Format (cont.)

5. Case #4: Lipid Management
Same format as Case #1
6. Case #5: Hypertension Management
Same format as Case #1

Overview of Guideline

Derek LeRoith, MD, PhD

*Professor of Medicine Endocrinology, Diabetes, and Bone
Disease, Mount Sinai Medical Center*

Introduction: Guideline Development

- Endocrine Society selected the expert members of the Guideline Writing Committee and the Chair.
- Writing committee consisted of ten content experts representing endocrinology, neurology, and geriatrics and one methodologist.
- Evidence-based recommendations were developed and graded using the *Grading of Recommendations, Assessment, Development, and Evaluation (GRADE)* approach.
- 2 systematic reviews and 2 meta-analyses:
 - i. Synthesized the evidence derived from RCTs enrolling people with and without diabetes
 - ii. Evaluated pharmacological therapies for patients with diabetes and hypertension and hyperlipidemia

Key Points

- Prediabetes is highly prevalent in older people, however, interventions to delay progression from prediabetes to diabetes are especially effective in this age group.
- The prevalence of type 2 diabetes increases as individuals age and exaggerates the incidence of both microvascular and macrovascular complications.
- Clinicians should perform regular screening for prediabetes and diabetes in the older population and implement interventions as indicated in this guideline.
- Given the heterogeneity of the health status of older people with diabetes, the guideline emphasizes shared decision-making and provides a framework to assist health care providers to individualize treatment goals.

Key Points (cont.)

- The problems that older individuals with diabetes face, in contrast to younger people with the disease, include sarcopenia, frailty and cognitive dysfunction. Such complications can lead to an increased risk of poor medication adherence, hypoglycemia (from certain medications), falls, and loss of independence in daily living activities.
- The guideline presents evidence for the various effects of diabetes in the older patients and the relevant therapies for glycemic control, hyperlipidemia and hypertension.
- Guideline recommendations also address common co-morbidities such as renal impairment, which affects the pharmacokinetics and pharmacodynamics of specific agents, and concomitant heart disease.

Case Questions

Case 1: Screening

Case #1: Screening

RT is a 78 year old widowed African American female. She is retired and busy looking after her grandkids. She enjoys taking long walks and has largely been in good health. She lives independently, cooks for herself and has no difficulty managing her ADL's.

She does have hypertension, which was diagnosed in her 50's and has been well treated ever since. Her recent BP = 126/78 and her BMI = 26.4 kg/m². She has a strong family history of type 2 diabetes and hypertension.

On her annual screening fasting labs her FPG was found to be 112 mg/dl.

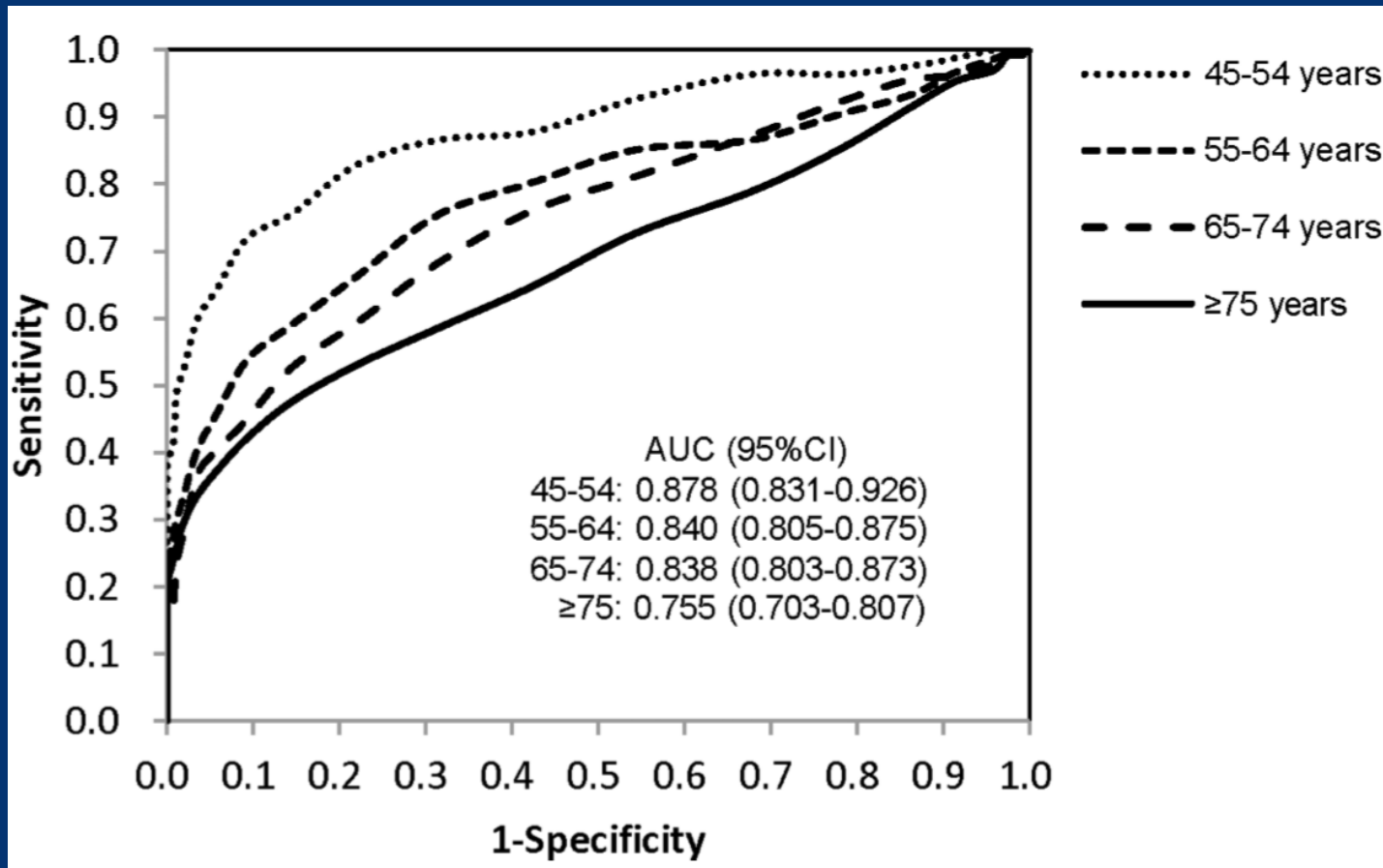
Case #1: Screening (cont.)

Question: What is the next best test, according to the new Endo Society CPG, to establish whether or not she has diabetes? (*Audience Response*)

- A. HbA1C level
- B. 2 hour post 75 gm OGTT
- C. Fructosamine
- D. 2 hour postprandial BG

Age and Diagnostic Accuracy of HbA1c

- The diagnostic accuracy of HbA1c decreases with age.



Case 2:
Glucose Target – Assess
Overall Health

Case #2: Glucose Target – Assess Overall Health

SJ is a 68 year old Latino male who has had type 2 diabetes since he was 48 years old. His control has been varied since diagnosis. He was first started on an SU and then metformin was added. He initially achieved an A1C of 7.2% but it increased to 9.0% over time. He was very reluctant to start insulin since he was a construction worker and he feared hypoglycemia while working. Additionally he was diagnosed with dyslipidemia and hypertension but had intermittent access to health care and was not consistent with taking his prescribed medications.

He is now retired and is on Medicare with better access to healthcare. His wife brings him to clinic concerned that he seems more forgetful and somewhat more disoriented than in the past. Both of them wish to reassess his medical status and improve his condition.

Case #2: Glucose Target – Assess Overall Health (cont.)

He complains of chronic back and shoulder pain. He has intermittently blurry vision with a marked reduction in his night vision. He notes nocturia x 2. His weight is stable. He does no SMBG and has had minimal diabetes education.

On exam he appears older than stated age. He is oriented to person and place but not to date or time. His BP = 165/95, BMI = 27.4 kg/m². He has bilateral cataracts and evidence of retinal bleeding on fundoscopic exam. His cardiac, pulmonary and abdominal exams are WNL. He has absent lower extremity reflexes and reduced pedal pulses. On foot exam his nails are thickened, he has callous formation and a loss of proprioception and sensation to 5.07 monofilament testing.

Case #2: Glucose Target – Assess Overall Health (cont.)

His HbA1c = 9.2%. LDL = 136 mg/dl, HDL = 36 mg/dl and TG = 237 mg/dl, eGFR = 36 and 2+ protein in his urine.

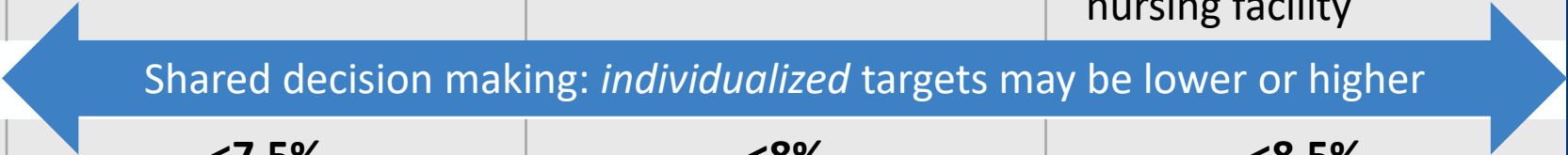
Question: What would be your initial target HbA1c for this patient? *(Audience Response)*

- A. Less than 9% and 8% or greater
- B. Less than 8.5%
- C. Less than 8% and 7.5% or greater
- D. Less than 7.5%

Key Recommendation for Overall Health Assessment

- In patients aged 65 and older with diabetes, we advise assessing the patient's overall health and personal values prior to the determination of treatment goals and strategies (see Framework). (Ungraded Good Practice Statement)

Overall Health Assessment - Framework

		Good Health	Intermediate Health	Poor Health
Patient characteristics		≤ 2 chronic conditions* AND No ADL impairments and ≤ 1 IADL impairment	≥ 3 chronic conditions* AND/OR Any of the following: <ul style="list-style-type: none"> • Mild cognitive impairment / early dementia • ≥ 2 IADL impairments 	Any of the following: <ul style="list-style-type: none"> • End-stage medical condition • Moderate to severe dementia • ≥ 2 ADL impairments • Residence in a long-term nursing facility
HbA1c goal				
Use of drugs that may cause hypoglycemia? (e.g., insulin, SU, glinides)	<u>No</u>	<7.5% <i>FPG: 90-130 md/dL</i> <i>HS: 90-150 mg/dL</i>	<8% <i>FPG: 90-150 md/dL</i> <i>HS: 100-180 mg/dL</i>	<8.5% <i>FPG: 100-180 md/dL</i> <i>HS: 110-200 mg/dL</i>
	<u>Yes</u>	<7.5% and $\geq 7\%$ <i>FPG: 90-150 md/dL</i> <i>HS: 100-180 mg/dL</i>	<8% and $\geq 7.5\%$ <i>FPG: 100-150 md/dL</i> <i>HS: 150-180 mg/dL</i>	<8.5% and $\geq 8\%$ <i>FPG: 100-180 md/dL</i> <i>HS: 150-250 mg/dL</i>

Step 1: Assessing Overall Health

	Good Health	Intermediate Health	Poor Health
Patient characteristics	<p>≤2 chronic conditions*</p> <p>AND</p> <p>No ADL impairments and ≤1 IADL impairment</p>	<p>≥3 chronic conditions*</p> <p>AND/OR</p> <p>Any of the following:</p> <ul style="list-style-type: none"> • Mild cognitive impairment / early dementia • ≥2 IADL impairments 	<p>Any of the following:</p> <ul style="list-style-type: none"> • End-stage medical condition ** • Moderate to severe dementia • ≥2 ADL impairments • Residence in a long-term nursing facility

* Does not include diabetes **e.g. metastatic cancer, oxygen-requiring COPD

ADL: activities of daily living (e.g., eating, bathing, dressing)

IADL: instrumental activities of daily living (e.g., managing money, doing housework)

Step 2: Identify HbA1c and Glucose Targets

		Good Health	Intermediate Health	Poor Health
HbA1c goal				
Is the patient taking drugs that may cause hypoglycemia? (e.g., insulin, SU, glinides)	<u>No</u>	<7.5% <i>FPG: 90-130 md/dL</i> <i>HS: 90-150 mg/dL</i>	<8% <i>FPG: 90-150 md/dL</i> <i>HS: 100-180 mg/dL</i>	<8.5% <i>FPG: 100-180 md/dL</i> <i>HS: 110-200 mg/dL</i>
	<u>Yes</u>	<7.5% and ≥7% <i>FPG: 90-150 md/dL</i> <i>HS: 100-180 mg/dL</i>	<8% and ≥7.5% <i>FPG: 100-150 md/dL</i> <i>HS: 150-180 mg/dL</i>	<8.5% and ≥8% <i>FPG: 100-180 md/dL</i> <i>HS: 150-250 mg/dL</i>

Case 3:
Medication Selection to
Minimize Hypoglycemia

Case #3: Medication Selection to Minimize Hypoglycemia

MY is an 80 year old female with a 20+ year history of type 2 diabetes. In general she has been well controlled with an A1C of 6.8 – 7.5%. She eats carefully, takes her medications and goes to an exercise class for seniors 3 times per week. She was started on oral agents initially but for the past 10 years has been on long acting insulin with premeal rapid acting insulin. She uses a correction scale before meals and “guesstimates” her carbohydrates. Recently she has noted a decrease in her appetite. She fell and fractured her right wrist and this has made management of her diabetes more difficult. She lives with her daughter and son-in-law, but they work, so she is alone most of the day. She has had episodes of mild hypoglycemia several times per week lately. There is no particular pattern as to the timing of these episodes. Her eGFR has fallen from 60 to 30 over the past two years. Her BMI is 24.3 kg/m².

Case #3: Medication Selection to Minimize Hypoglycemia

Question: Which approach would most safely and effectively reduce her risk of hypoglycemia? (*Audience Response*)

- A. Attempting to taper her off prandial insulin onto a regimen of basal insulin plus a DPPIV-inhibitor
- B. Changing her rapid acting insulin to after-eating rather than before meals
- C. Attempting to taper her off prandial insulin onto a regimen of basal insulin plus metformin
- D. Adding a GLP-1 RA

Key Recommendation for Medication Selection to Minimize Hypoglycemia

- In patients aged 65 years and older with diabetes, we recommend that outpatient diabetes regimens be designed specifically to minimize hypoglycemia. (1⊕⊕⊕O)

Technical Remark:

Although evidence for specific targets is lacking, glycemic targets should be tailored to overall health and management strategies (e.g., whether or not a medication that can cause hypoglycemia is used) (see Framework).

Case 4: Lipid Management

Case #4: Lipid Management

JR is a 90 year male with a 10 year history of type 2 diabetes. He has been treated with metformin and a DPP-IV inhibitor with an A1C of 6.6%. He has no family or personal history of CVD. He has no cardiac symptoms. He does not have hypertension. He is concerned because his LDL cholesterol level has been increasing and has gone up from 95 to 126 mg/dl. He has read that statin therapy should be started if his LDL cholesterol is above 100 mg/dl and wants your opinion as to whether or not he should start on treatment.

Question: You tell him: *(Audience Response)*

- A. Gentle diet modification to lower his cholesterol
- B. Start on a statin
- C. Start on ezetimibe
- D. See a cardiologist for testing

Key Recommendation for Lipid Management

- In patients aged 65 years and older with diabetes, we recommend statin therapy and the use of an annual lipid profile to achieve the recommended levels for reducing absolute CVD events and all-cause mortality. (1⊕⊕⊕⊕)

Technical Remarks:

- *Since the Writing Committee did not rigorously evaluate the evidence for specific LDL-C targets in this population, we refrained from endorsing specific LDL-C targets in this guideline.*
- *For patients aged 80 years old and older or with short life expectancy, we advocate that LDL-C goal levels should not be so strict.*

Case 5: Hypertension Management

Case #5: Hypertension Management

SH is 76 year old white female with a 70 year history of type 1 diabetes. She loves to tell stories of how diabetes management has evolved over the years. She is meticulous about her diabetes treatment. She prepares meals for herself and her husband, carbohydrate counts, using a continuous glucose monitor and is on an insulin pump. She walks her dog daily for exercise. She also tries to swim in her pool when weather permits.

She has had bilateral vitrectomies for retinopathy but her vision has been stable for many years. She had an MI when she was 62, but fully recovered. She has mild peripheral neuropathy and an eGFR = 46. She is treated for hypertension and dyslipidemia. She has osteoporosis which is treated with a bisphosphonate. She also has hypothyroidism for which she is on replacement. Her HbA1c is 6.5 – 7.0%.

Case #5: Hypertension Management (cont.)

Question: What is your blood pressure target for this patient? (*Audience Response*)

- A. <140/90
- B. <130/90
- C. <130/80
- D. <120/80

Key Recommendations for Hypertension Management

- In patients aged 65 to 85 years with diabetes, we recommend a target BP of 140/90 mmHg to decrease the risk of CVD outcomes, stroke, and progressive CKD. (1|⊕⊕⊕O)

Technical Remarks:

- *Patients in certain high-risk groups could be considered for lower BP targets (130/80 mmHg), such as those with previous stroke or progressing CKD (eGFR <60 mL/min/1.73 m² and/or albuminuria). If lower BP targets are selected, careful monitoring of such patients is needed to avoid orthostatic hypotension.*
- *Patients with high disease complexity (Group 3, Poor health, Framework) could be considered for higher BP targets (145–160/90 mmHg).*
- *Choosing a BP target involves shared decision-making between the clinician and patient, with full discussion of the benefits and risks of each target.*

Key Recommendations for Hypertension Management (cont.)

- In patients aged 65 years and older with diabetes and hypertension, we recommend that an angiotensin-converting enzyme inhibitor or an angiotensin receptor blocker should be the first-line therapy. (1|⊕⊕⊕○)

Technical Remark:

If one class is not tolerated, the other should be substituted.



Audience Questions

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