

Chapter 43. Diabetes Mellitus, Self-Assessment Questions

1. A 46-year-old man presents for his annual physical. He states that he has been going to the bathroom more frequently than normal and has lost approximately 20 pounds (9.1 kg) in the past 6 months without trying. His random glucose today is 252 mg/dL (14.0 mmol/L). Which of the following is most appropriate to confirm diagnosis of type 2 diabetes?
 - A. Obtain a fasting glucose level in the morning.
 - B. Have patient perform a 2-hour oral glucose tolerance test.
 - C. Obtain patient's hemoglobin A_{1c}.
 - D. Obtain a repeat random glucose level.
 - E. Nothing; there is enough information available to diagnose patient with type 2 diabetes.

2. A 36-year-old Caucasian woman is concerned about her risks for developing type 2 diabetes because her mother and father have the disease. Currently, she weighs 145 lbs (66 kg; BMI = 22 kg/m²) and has no other medical conditions. All of her children weighed less than 8 lbs (3.6 kg) at birth and she is preparing for her second marathon. The most appropriate recommendation for screening is to begin:
 - A. At the age of 45 then every 3 years if normal.
 - B. At the age of 45 then every year if normal.
 - C. At the age of 40 then every 3 years if normal.
 - D. At the age of 40 then every year if normal.
 - E. As soon as possible then every year if normal.

Questions 3–5 refer to the following case:

A 67-year-old Caucasian woman has been recently diagnosed with type 2 diabetes. Her past medical history is significant for hypertension, hyperlipidemia, and hypothyroidism. Her current medications include hydrochlorothiazide, levothyroxine, and simvastatin. At diagnosis, her vitals and labs were as follows: BP 157/94 mm Hg, Wt 157 lbs (71 kg; BMI = 24 kg/m²), A_{1c} 8.7% (0.087; 72 mmol/mol Hgb), FPG 174 mg/dL (9.7 mmol/L), LDL 52 mg/dL (1.34 mmol/L), HDL 59 mg/dL (1.53 mmol/L), TG 45 mg/dL (0.51 mmol/L).

3. Which of the following is the most appropriate recommendation for therapy according to the ADA algorithm?
 - A. Lifestyle changes only
 - B. Metformin only
 - C. Intensive insulin only
 - D. Lifestyle changes and metformin
 - E. Lifestyle changes and intensive insulin

4. What is the patient's goal blood pressure according to current ADA treatment guidelines?
 - A. Less than 125/80
 - B. Less than 130/80
 - C. Less than 135/85
 - D. Less than 140/90
 - E. Less than 150/90

5. What is the most appropriate medication to add to the patient's regimen to control her hypertension?
 - A. Amlodipine
 - B. Clonidine
 - C. Lisinopril
 - D. Metoprolol
 - E. Verapamil

6. Which of the following statements regarding nonpharmacologic therapy for treatment of diabetes is *true*?
 - A. Individualized meal plans should be developed for people with diabetes based on cultural preferences, comorbidities, and daily schedule as much as possible.
 - B. Current clinical evidence supports the use of dietary supplements such as chromium in the management of diabetes.
 - C. Weight loss works best for patients with type 1 diabetes since most are overweight.
 - D. Long-term goals for physical activity should include at least 30 minutes of aerobic exercise once a week for all patients with diabetes.
 - E. Influenza vaccinations are recommended for all patients with diabetes every 5 years.

7. A 12-year-old boy is newly diagnosed with type 1 diabetes. His current height is 60 in (152 cm) and he weighs 40 kg (88 lb). What dose of basal insulin should be initiated for him?
 - A. 12 units insulin glargine
 - B. 6 units insulin lispro
 - C. 4 units insulin detemir
 - D. 3 units insulin aspart
 - E. 2 units insulin glulisine

8. Oral glucose lowering agents that primarily inhibit the breakdown of glucagon-like peptide 1 are classified as:
 - A. Sulfonylureas
 - B. SGLT2 inhibitors
 - C. DPP-4 inhibitors

- D. Meglitinides
- E. Thiazolidinediones

9. A 32-year-old woman is diagnosed with gestational diabetes after being administered an oral glucose tolerance test during her 28th-week of gestation. She has not been able to reduce or control her glucose readings with lifestyle interventions alone and her physician wants to start pharmacotherapy. Which agent below is the preferred medication, considering her glucose readings are significantly elevated?

- A. Glyburide
- B. Insulin glargine
- C. NPH insulin
- D. Liraglutide
- E. Metformin

10. A 59-year-old Asian American woman has a 3-year history of T2DM. She presents with no new complaints today. Her labs and vitals are: A_{1c} 8.1% (0.081; 65 mmol/mol Hgb), FBG 320 mg/dL (17.8 mmol/L), LDL 118 mg/dL (3.05 mmol/L), HDL 32 mg/dL (0.83 mmol/L), TG 325 mg/dL (3.67 mmol/L), SCr 1.9 mg/dL (168 μmol/L), BP 128/78 mm Hg, HR 68 beats/min, Wt 135 lb (61.4 kg), Ht 5'2" (157 cm). Her current medications are:

- Glimepiride 2 mg once daily
- Metformin 1000 mg twice daily
- Exenatide 10 mcg twice daily
- Sitagliptin 50 mg daily
- Alendronate 70 mg/week
- Simvastatin 20 mg once daily
- Paroxetine 20 mg once daily
- Aspirin 81 mg once daily

Which of her medications should be discontinued and for what reason?

- A. Glimepiride—may increase risk of heart failure
- B. Metformin—due to renal dysfunction
- C. Exenatide—may cause weight gain
- D. Sitagliptin—may increase nausea and vomiting
- E. None of her medications should be discontinued

11. A 38-year-old man with type 1 diabetes presents requesting help with his insulin management. He needs to update his insulin to carbohydrate ratio in order to accurately dose his bolus insulin at meals. Which rule below should he use to calculate his insulin to carbohydrate ratio given that he administers insulin lispro in his pump?

- A. Rule of 450
- B. Rule of 500
- C. Rule of 1500
- D. Rule of 1800

E. Rule of 2000

12. A 17-year-old female patient with type 1 diabetes currently uses a total of 40 units of insulin aspart daily in her pump. What is the expected reduction in glucose per unit of insulin for her?

- A. 12.5 mg/dL (0.7 mmol/L)
- B. 30 mg/dL (1.7 mmol/L)
- C. 37.5 mg/dL (2.1 mmol/L)
- D. 45 mg/dL (2.5 mmol/L)
- E. 50 mg/dL (2.8 mmol/L)

13. Select the oral medication from the list below that is most likely to result in weight loss for patients with diabetes.

- A. Dapagliflozin
- B. Glyburide
- C. Liraglutide
- D. Pioglitazone
- E. Sitagliptin

14. A 57-year-old man has had type 2 diabetes for approximately 15 years. His physician is initiating insulin therapy today due to his elevated A_{1c} despite oral therapy. Which of the following is the most appropriate option?

- A. Initiate insulin glargine 10 units every night at bedtime
- B. Initiate insulin lispro 10 units every night at bedtime
- C. Initiate insulin aspart 10 units every morning
- D. Initiate insulin glulisine 10 units twice daily
- E. Initiate 70% insulin aspart protamine/30% insulin aspart 10 units every night at bedtime

15. All of the following are true regarding noninsulin injectable therapy for treatment of diabetes, *except*:

- A. Albiglutide is administered once weekly.
- B. Exenatide lowers glucose levels by several mechanisms including regulating gastric emptying.
- C. Liraglutide and albiglutide are administered without regard to meals.
- D. Pramlintide is approved for use in patients with type 1 and 2 diabetes currently using insulin
- E. Pramlintide is as effective as insulin at lowering A_{1c} levels in patients with type 1 diabetes.

Answers

1. E
2. A
3. D
4. D
5. C
6. A
7. A
8. C
9. C
10. B
11. B
12. D
13. A
14. A
15. E