

## *CME Test Questions*

# INSULIN THERAPY IN TYPE 2 DIABETES

1. A normal fasting plasma glucose (FPG) value precludes the presence of prediabetes.
  - a. True
  - b. False
2. Which of the following populations describes patients at risk for prediabetes and diabetes?
  - a. Obese patients who are insulin resistant
  - b. Obese patients who are metabolically healthy
  - c. Normal weight patients who are metabolically obese
  - d. a and b
  - e. a and c
  - f. All of the above
3. A follow-up analysis of the Diabetes Prevention Program (DPP) showed which lifestyle strategy to be the strongest predictor of reduced diabetes incidence?
  - a. Weight loss
  - b. Diet
  - c. Physical activity
4. Intensive therapy aimed at reducing and maintaining glycosylated hemoglobin (A1C) levels <7% has been shown to reduce the risk of microvascular complications by \_\_\_\_\_.
  - a. 25% to 50%
  - b. 30% to 75%
  - c. 35% to 90%
  - d. Intensive therapy did not reduce microvascular complications.
5. An A1C level \_\_\_\_\_ signals the need to initiate or change therapy.
  - a.  $\geq 8.5\%$
  - b.  $> 8\%$
  - c.  $> 7.5\%$
  - d.  $\geq 7\%$
6. The lower A1C values achieved in the intensive-therapy group in the Diabetes Control and Complications Trial (DCCT) were found to be associated with \_\_\_\_\_ at the end of the 11-year follow-up
 

**Epidemiology of Diabetes Interventions and Complications (EDIC) study.**

  - a. decreased cardiovascular risk
  - b. increased risk of macrovascular complications
  - c. decreased risk of hyperglycemia
  - d. increased risk of renal complications
7. The percentage of patients on an intensive-treatment regimen versus those on a conventional-treatment regimen \_\_\_\_\_ from the end of the DCCT to year 11 of the EDIC study, as did the difference in mean A1C values.
  - a. increased
  - b. decreased
  - c. remained the same
8. Results of the United Kingdom Prospective Diabetes Study (UKPDS) 33 showed that intensive treatment was associated with a higher risk for any diabetes-related end point.
  - a. True
  - b. False
9. In the UKPDS 57, which treatment group achieved a significantly lower mean A1C value and less major hypoglycemia?
  - a. The conventional-treatment group (diet only)
  - b. The group receiving intensive treatment with insulin alone
  - c. The group receiving intensive treatment with sulfonylurea  $\pm$  insulin
10. In the UKPDS 49, tight glycemic control could be achieved and maintained over time with which of the following treatment regimens?
  - a. Diet alone
  - b. Insulin monotherapy
  - c. Monotherapy with an oral agent
  - d. All of the above
  - e. None of the above

**11. Which of the following statements is/are true?**

- a. The combination of insulin and sulfonylurea maintained A1C at lower levels than did insulin alone.
- b. The combination of insulin and sulfonylurea maintained A1C at higher levels than did insulin alone.
- c. A higher proportion of patients using the combination of insulin and sulfonylurea achieved the target A1C of <7%.
- d. A lower proportion of patients using the combination of insulin and sulfonylurea achieved the target A1C of <7%.
- e. a and c
- f. b and d

**12. Early addition of insulin to sulfonylurea therapy was shown to effectively maintain glycemic control for 6 years \_\_\_\_\_.**

- a. but not to increase the risk of hypoglycemia or weight gain
- b. but also to increase the risk of hypoglycemia or weight gain
- c. but also to increase the incidence of major hypoglycemia

**13. Providers wait an average of \_\_\_\_\_ months before initiating a change in antidiabetic monotherapy (eg, switching to or adding another agent) and modify therapy only after A1C levels are in the range of 8.8% to 9.1%.**

- a. 9 to 18
- b. 12 to 24
- c. 18 to 27
- d. 27 to 35

**14. According to results of the Diabetes Attitudes, Wishes, and Needs (DAWN) study, ~65% of providers reported that their patients \_\_\_\_\_ starting insulin therapy.**

- a. understood the importance of
- b. would not be concerned about
- c. would be very concerned about

**15. Patients should not be told about the progressive nature of type 2 diabetes and the eventual loss of endogenous insulin secretion until absolutely necessary so as not to worry them.**

- a. True
- b. False

**16. A safe and effective IV insulin infusion protocol should include all but which of the following?**

- a. Initiation by signature of the patient's provider
- b. Implementation of the protocol by a nurse
- c. Mathematical calculation of the infusion rate by a nurse
- d. Knowledge of the previous insulin infusion rate and present blood glucose value by the nursing staff

**17. The essential output of any dose-defining IV insulin infusion algorithm consists of which of the following?**

- a. The recommended insulin infusion rate
- b. The next blood glucose test time
- c. Both a and b
- d. Neither a nor b

**18. Unless oral intake of food is curtailed during the hospital stay, a patient's insulin regimen should be prescribed as \_\_\_\_\_.**

- a. ≥50% of the total daily dose prescribed as rapid-acting prandial insulin analogue given with meals and the remainder as long-acting basal insulin
- b. <10% of the total daily dose prescribed as a rapid-acting prandial insulin analogue given with meals and the remainder as long-acting basal insulin
- c. long-acting basal insulin once or twice daily, with no rapid-acting prandial insulin
- d. sliding scale insulin (SSI) monotherapy

**19. Reliance on SSI monotherapy for patients with diabetes should be a high priority.**

- a. True
- b. False

**20. When a patient with experience in the management of his or her diabetes continues to self-manage while being hospitalized, the patient is responsible for assigning prandial doses of insulin.**

- a. True
- b. False

**21. In nondiabetic individuals, insulin release from  $\beta$ -cells occurs following ingestion of a meal, enabling uptake of glucose into the periphery and suppressing release of glucagon from  $\alpha$ -cells, whereas glucagon secretion predominates during periods of fasting, including overnight.**

- a. True
- b. False

**22. The limiting factor in the clinical use of glucagon-like peptide-1 (GLP-1) is its \_\_\_\_\_.**

- a. very short half-life
- b. extended half-life
- c. side effect profile

**23. The GLP-1 analogue exenatide is approved as monotherapy for the treatment of type 2 DM but not in combination with other oral antidiabetic agents.**

- a. True
- b. False

**24. Dipeptidyl peptidase (DPP)-IV inhibitors augment the action of \_\_\_\_\_.**

- a. amylin
- b. glucose-dependent insulinotropic polypeptide (GIP) and GLP-1
- c. insulin

**25. The main clinical utility of pramlintide, an incretin mimetic-like agent, is \_\_\_\_\_.**

- a. control of fasting glucose levels
- b. control of postprandial hyperglycemia
- c. significant reductions in A1C levels

# CME Test Answer Sheet and Evaluation Form for INSULIN THERAPY IN TYPE 2 DIABETES

Volume 8, Number 2

**Release Date of Activity: November 2007**

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I verify that I have spent \_\_\_\_ hours/\_\_\_\_ minutes of actual time working on this CME activity.

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**PRETEST ASSESSMENT: Please rate your current knowledge of insulin therapy in type 2 diabetes on a scale of 1 to 5, with 1 being the lowest and 5 the highest.** **1 2 3 4 5**

### CME TEST

(Please circle correct answers.)

- |                |               |                 |             |           |
|----------------|---------------|-----------------|-------------|-----------|
| 1. a b         | 6. a b c d    | 11. a b c d e f | 16. a b c d | 21. a b   |
| 2. a b c d e f | 7. a b c      | 12. a b c       | 17. a b c d | 22. a b c |
| 3. a b c       | 8. a b        | 13. a b c d     | 18. a b c d | 23. a b   |
| 4. a b c d     | 9. a b c      | 14. a b c       | 19. a b     | 24. a b c |
| 5. a b c d     | 10. a b c d e | 15. a b         | 20. a b     | 25. a b c |

**COURSE EVALUATION: Please evaluate the effectiveness of this activity by circling your choice on a scale of 1 to 5, with 1 being the lowest and 5 the highest.**

1. Identify prediabetes and discuss the importance of educating patients about the progressive nature of diabetes and treating to glycemic goals. **1 2 3 4 5**
2. Explain the role of insulin in the development of the microvascular and macrovascular complications associated with diabetes. **1 2 3 4 5**
3. Describe treatment options currently available to help patients achieve and maintain recommended blood glucose targets to improve clinical outcomes. **1 2 3 4 5**



4. Assess barriers to optimizing patient utilization of insulin and describe strategies to overcome those barriers. 1 2 3 4 5
5. How do you rate the overall quality of the activity? 1 2 3 4 5
6. How do you rate the educational content of the activity? 1 2 3 4 5
7. Was the presented information fair, objective, balanced, and free of bias in the discussion of any commercial product or service? \_\_\_ Yes \_\_\_ No  
If no, please comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Suggested topics for future activities:  
\_\_\_\_\_  
\_\_\_\_\_
9. Suggested authors for future activities:  
\_\_\_\_\_  
\_\_\_\_\_
10. After reading this publication, have you decided to change one or more aspects in the treatment of your patients? \_\_\_ Yes \_\_\_ No  
If yes, what changes will you make? \_\_\_\_\_  
\_\_\_\_\_  
If no, why not? \_\_\_\_\_  
\_\_\_\_\_
11. Would you be willing to participate in postactivity follow-up surveys? \_\_\_ Yes \_\_\_ No
12. Would you be willing to participate in a phone, e-mail, or in-person discussion exploring ways to improve our CME activities? \_\_\_ Yes \_\_\_ No

*The EOCME thanks you for your participation in this CME activity. All information provided improves the scope and purpose of our programs and your patients' care.*

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*Responses for AMA PRA credit must be submitted by November 30, 2009.*

