DIABETES CASES ON THE RISE: CURRENT DIAGNOSIS GUIDELINES AND RESEARCH EFFORTS FOR A CURE

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The CE test does *not* include the article "AHRQ reports number of U.S. adults treated for diabetes doubles between 1996-2007" that appears on page 12.

The Cover Story, Clinical Issues, and Lab Management articles published in this month's *MLO* are peer-reviewed.

CE learning objectives and CE questions prepared by Masih Shokrani, PhD, MT(ASCP), Clinical Laboratory Sciences Program, College of Health and Human Sciences, Northern Illinois University, DeKalb, IL.

CE QUESTIONS

1. According to the CDC, the prevalence of diabetes is projected to increase in the next 40 years because of ___.

a. increased life expectancy in people who have diabetes
b. increase in the number of minority group who are high risk groups for type 2 diabetes
c. an aging population
d. all of the above

2. The American Diabetes Association defines diabetes as a group of metabolic diseases that show hyperglycemia as a result of impairment in insulin secretion or hyperglycemia as a result of insulin action.

a. TRUE b. FALSE

3. Which of the following statements regarding type 1 diabetes is correct?

a. Type 1 diabetes is less prevalent than type 2 diabetes.
b. Type 1 diabetes is generally diagnosed in children and young adults.
c. Both a and b.
d. Neither a nor b.

4. Lack of insulin production in type 1 diabetes is due to autoimmune destruction of insulin-producing cells of the pancreas.

a. TRUE b. FALSE

5. The following autoantibodies are involved in type 1 diabetes:

a. GAD
b. Tyrosine phosphatase IA
c. Autoantibodies to insulin and beta cells of pancreas
d. All of the above

6. The level of plasma C-peptide is unchanged in type 1 diabetes.

a. TRUE b. FALSE

7. Type 2 diabetes is seen more in ___.

a. Asian-Americans b. African-Americans
c. Latinos d. all of the above

8. The risk of developing type 2 diabetes is increased by ___.

a. lack of physical activity b. obesity
c. increased age d. all of the above

9. Which of the following medications is used to treat type 2 diabetes?

a. Inhibitors of alpha-glucosidase
b. Biguanides and Thiazolidinediones
c. Meglitinides and sulfonylureas
d. All of the above

10. In vitro glycolysis occurs for up to four hours, even in the presence of fluoride, because ___.

a. fluoride rapidly blocks enolase, when it is mixed with blood
b. in the glycolytic pathway, enzymes upstream from enolase remain active
c. both a and b
d. neither a nor b is correct

11. In an individual with symptoms of hyperglycemia, a random plasma glucose of ___ is sufficient for the diagnosis of diabetes.

a. equal or greater than 200 mg/dL
b. equal or less than 100 mg/dL
c. less than 100 mg/dL
d. less than 126 mg/dL

12. The use of hemoglobin A1c as a test for the diagnosis of diabetes has the advantage because ___.

a. A1c levels are reflective of longer term glycemia
b. testing of A1c does not require patients to be fasting
c. less frequency of errors, caused by non-glycemic factors, is seen in A1c test
d. all of the above

13. According to the 2010 guidelines of American Diabetes Association, hemoglobin A1c levels equal or greater than 6.5% must be observed and confirmed after repeated testing to establish the diagnosis for diabetes mellitus.

a. TRUE b. FALSE

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14. Blood-glucose levels higher than normal but below the levels of diabetes could be due to ___.

a. impaired secretion of insulin
b. reduced insulin sensitivity
c. both a and b
d. neither a nor b

15. In what year was insulin processing discovered?

a. 1900 b. 1922
c. 1972 d. 1953

16. Transplantation of insulin-producing beta cells of the pancreas has the potential for the prevention of type 1 diabetes.

a. TRUE b. FALSE

17. Which of the following problems are associated with transplanted biological or synthetic material for the prevention of type 1 diabetes?

a. Deleterious effects of immunosuppressant drugs on the transplant recipient.
b. Immunological response to the transplant.
c. Potential effects of the autoimmunity that could also be seen in the new transplant.
d. All of the above.

18. Which of the following effects of Osteocalcin is impaired in type 2 diabetes?

a. Osteocalcin improves the ability of other cells for glucose utilization.
b. Osteocalcin is involved in the production of insulin in the pancreas.
c. Both a and b.
d. Neither a nor b.

19. Prolonged hyperglycemia results in shorter life expectancy than that of age-matched non-diabetics due to ___.

a. macrovascular complications
b. microvascular complications
c. both a and b
d. neither a nor b

20. Which of the following discoveries have benefitted diabetic research?

a. Molecular DNA methods.
b. Novel insulin-controlling systems in the body.
c. Use of stem-cell technology.
d. All of the above.

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February 2011

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20.	○	○	○	○

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