



BIOMARKERS FOR CARDIOVASCULAR RISK ASSESSMENT and CANCER

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The Cover Story, Clinical Issues, and Lab Management published in *MLO* are peer-reviewed.

Cover story objectives and the CE questions were prepared by Jeanne M. Isabel, MEd, CLSpH(NCA), MT(ASCP), program director and associate professor, School of Allied Health and Communicative Disorders, Northern Illinois University, DeKalb, IL.

Note: This CE test includes questions from two articles featured in the cover story section: one on biomarkers for cardiovascular risk assessment and one on cancer biomarkers.

1. All of the following are lipid modifying medications *except*

- a. statins.
- b. omega-3 fish oil.
- c. ezetimibe.
- d. cetuximab.

2. Biomarkers used for cardiac risk assessment include all of the following *except*

- a. hs-CRP.
- b. Lp-PLA₂.
- c. HDL cholesterol.
- d. LD.

3. Which of the following is an acute inflammatory marker?

- a. ESR
- b. hs-CRP
- c. RA
- d. ANA

4. Lp-PLA₂ is produced primarily by

- a. macrophages.
- b. mesothelial cells.
- c. neutrophils.
- d. lymphocytes.

5. Lp-PLA₂ has been shown to be a predictor of

- a. MI.
- b. ischemic stroke.
- c. unstable plaque.
- d. All of the above.

6. Lp-PLA₂ has been found to be associated with risk of CHD.

- a. TRUE
- b. FALSE

7. Lp-PLA₂ can be measured by

- a. absorbance.
- b. RIA.
- c. ELISA.
- d. TLC.

8. The risk for patients with elevated Lp-PLA₂ and hs-CRP to have a heart attack is

- a. twofold.
- b. fourfold.
- c. sixfold.
- d. elevenfold.

9. Testing for Lp-PLA₂ uses

- a. monoclonal antibodies.
- b. polyclonal antibodies.
- c. latex agglutination.
- d. hemagglutination.

10. The current automated assay for Lp-PLA₂ can be run on which of the following analyzers?

- a. Hitachi
- b. Roche modular P
- c. Olympus
- d. All of the above.

11. Cardiologists are recommending which treatment for patients with Lp-PLA₂?

- a. lower LDL-C
- b. lower HDL-C
- c. lower TC
- d. lower triglyceride

12. Elevated Lp-PLA₂ is related to atherosclerotic plaque and thrombotic events.

- a. TRUE
- b. FALSE

13. Cancer cells are not able to evolve to their environment.
a. TRUE
b. FALSE
14. The definition of biomarker is anything associated with a drug response that can be measured.
a. TRUE
b. FALSE
15. Use of which of the following can indicate whether a drug is having the expected effect?
a. skin
b. nails
c. hair follicles
d. teeth
16. Changes in normal cells may occur with
a. loss of oncogenes.
b. loss of DNA repair genes.
c. activation of tumor suppressors.
d. None of the above.
17. Which of the following genetic change transforms a normal cell to a tumor cell?
a. activation of oncogenes.
b. suppression of oncogenes.
c. increase of tumor suppressors.
d. None of the above.
18. Somatic gene changes include
a. mutations.
b. methylation changes.
c. gene rearrangements.
d. All of the above.
19. For a biomarker to be successful it must
a. be associated with a drug response.
b. show clinical utility.
c. be circulating.
d. Both a and b.
20. Detection of circulating nucleic acid shed from cancer cells may be the biomarker of the future.
a. TRUE
b. FALSE

TEST ANSWER FORM

CE Test on BIOMARKERS FOR CARDIOVASCULAR

RISK ASSESSMENT and CANCER May 2009

(This form may be photocopied; it is no longer valid for CEUs after November 30, 2010.)

Circles must be filled in, or test will not be graded.

Shade circles like this: Not like this:

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1. To what extent did the article focus on or clarify the objectives?

P ① ② ③ ④ ⑤ E

2. To what extent was the article well-organized and readable?

P ① ② ③ ④ ⑤ E

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