



LIVER-FUNCTION TESTING

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Objectives from the author were approved by the Dean, and CE questions prepared by Masih Shokrani, PhD, MT(ASCP), both from Clinical Laboratory Sciences Program, College of Health and Human Sciences, Northern Illinois University, DeKalb, IL.

CE QUESTIONS

1. Liver-related common diseases associated with abnormalities of liver test results are

- a. Hepatitis
- b. Hemochromatosis
- c. Alpha-1- antitrypsin deficiency
- d. All of the above.

2. Any perturbation to the liver can induce enzyme leakage from the hepatocyte.

- a. TRUE
- b. FALSE

3. The two most commonly requested liver-function tests are

- a. test for ALT.
- b. test for AST.
- c. Both a & b.
- d. Neither a nor b.

4. Liver-function tests are indirect measures of liver integrity or biliary excretory ability.

- a. TRUE
- b. FALSE

5. Degree of liver enzymes can be mild, moderate, or marked elevation.

- a. TRUE
- b. FALSE

6. Severe liver injury with the accompanying marked elevation in liver enzymes can occur in the following:

- a. toxin-induced hepatitis.
- b. ischemic liver injury.
- c. acute viral hepatitis.
- d. All of the above.

7. Elevated liver enzymes without liver disease is seen in

- a. celiac disease.
- b. adrenal insufficiency.
- c. thyroid dysfunction.
- d. All of the above.

8. Elevation of which of the following analytes can indicate a biliary-obstructive process?

- a. Bilirubin
- b. Alkaline phosphatase
- c. Gamma glutamyl transpeptidase
- d. All of the above.

9. Liver diseases without elevated liver enzymes are seen in

- a. hemochromatosis.
- b. post-jejuno-ileal bypass.
- c. chronic hepatitis C virus infection.
- d. All of the above.

10. An AST/ALT ratio greater than 2.0 occurs in response to the following

- a. malnourished alcoholics lacking vitamin B6.
- b. alcohol-induced expression of mitochondrial AST.
- c. Both a and b.
- d. Neither a nor b.

11. Elevated serum-bilirubin levels persist in patients with obstructive or intrahepatic jaundice after the obstruction or hepatitis has resolved.

- a. TRUE
- b. FALSE

12. The following enzymes belong to liver enzymes:

- a. LD (lactate dehydrogenase).
- b. GGT (Gamma glutamyl transpeptidase).
- c. AP (Alkaline phosphatase).
- d. All of the above.

13. Which of the following statements about end-stage liver disease is correct?

- a. It is possible for liver serum enzymes to have normal levels.
- b. A pattern of lab results with normal ALT and AST is possible.
- c. Abnormal markers of protein synthesis exist.
- d. All of the above.

14. Examination of AST to ALT ratio helps for the etiology of the liver disease because

- a. in the majority of cases of hepatic injury, the normal ratio remains the same or decreases (the normal ration ranges from 0.8 to 1.0).
- b. in alcoholic liver disease, the ratio is 2.0 or greater.
- c. Both a and b are correct.
- d. Neither a nor b is correct.

15. Functional liver failure does not occur until 20% of the liver's capacity has been damaged beyond repair.

- a. TRUE
- b. FALSE

16. Which of the following statements about ammonia is correct?

- a. Serum-ammonia level is a measure of liver function.
- b. Measurement of serum ammonia is very subject to preanalytic interferences.
- c. Hepatic encephalopathy is a condition associated with hyperammonemia.
- d. All of the above.

17. If GGT enzyme is elevated along with an elevated AP enzyme, it is consistent with biliary disease.

- a. TRUE
- b. FALSE

18. Additional markers of liver disease include

- a. ceruloplasmin.
- b. antismooth muscle antibody.
- c. alpha fetoprotein.
- d. All of the above.

19. Derangement of liver function can be associated with

- a. decrease in albumin concentration.
- b. prolongation of prothrombin time.
- c. Both a and b are correct.
- d. Neither a nor b is correct.

20. Which of the following statements about the GGT enzyme is correct?

- a. GGT is a sensitive but non-specific indication of liver disease.
- b. The majority of GGT in serum originates from the hepatobiliary system.
- c. Its primary use is to differentiate elevated alkaline phosphatase enzyme from either bone or liver sources.
- d. All of the above statements.

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