Test Bank - Plasma proteins

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Q1. In serum protein electrophoresis, which protein band is typically the most prominent and migrates the furthest toward the positive electrode?

A. *a*1

B. *B*

C. *y*

D. Albumin

Q2. A new plasma protein shares characteristics with haptoglobin and ceruloplasmin. During serum protein electrophoresis, where would it likely appear?

a) In the α1 region.

b) In the α2 region

c) In the β region.

d) In the albumin band.

Q3. A protein synthesized in the liver and lacking an N or O linkage is most likely:

A. A glycoprotein

B. Albumin

C. An immunoglobulin.

D. ß-globulin

Q4. In patients with Crohn's disease, how might the half-life of albumin be affected?

A. It would remain unchanged.

B. It would increase significantly.

C. It would decrease to approximately one day.

D. It would be extended to several months.

Q5. In patients with a genetic disorder affecting the half-life of haptoglobin, which aspect of its metabolism is most likely disrupted?
A. Synthesis rate in the liver
B. Post-translational modifications in the Golgi apparatus
C. Clearance rate from the bloodstream
D. Signal peptide cleavage during ER processing

Q6. The interaction between phenytoin and dicoumarol is clinically significant because it can:
A. Increase the risk of kernicterus
B. Reduce the effectiveness of anti-coagulants
C. Mental retardation
D. Enhance bilirubin toxicity in the liver

Q7. A patient presents with generalized edema and has an albumin level of 1.8 g/dL. Which of the following conditions is most likely contributing to the hypoalbuminemia?
A. Chronic dehydration
B. Gastrointestinal loss of proteins
C. Systematic inflammation
D. Diabetes mellitus

Q8. A decrease in prealbumin levels is most commonly associated with:
A. Hyperthyroidism
B. Improved renal function
C. Malnutrition
D. Dehydration

Q9. The role of C-reactive protein (CRP) in defense against bacteria involves:
A. neutralizing bacterial toxins
B. Binding to bacterial polysaccharides
C. Preventing the replication of bacterial DNA
D. Inhibiting bacterial growth through enzymatic activity

Q10. In which clinical scenario would you expect to see an elevated level of α1-antitrypsin?
A. Chronic liver disease
B. Acute-phase response to inflammation or tissue damage
C. Hypoalbuminia
D. vitamin D deficiency

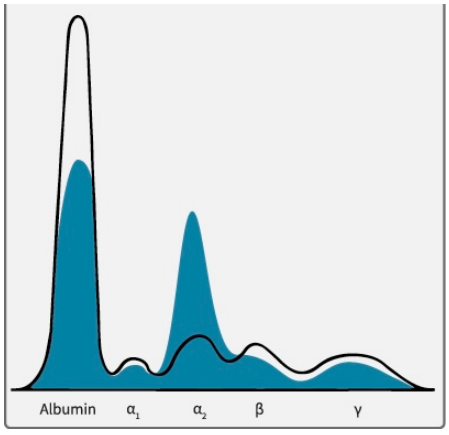
Q11. Which genotype of α1-antitrypsin deficiency is most likely to experience severe exacerbation of lung damage due to smoking?
A. MM genotype
B. MS genotype
C. SZ genotype
D. ZZ genotype

Q12. In which condition is the level of haptoglobin most likely to decrease?
A. Hemolytic anemia
B. Acute phase response
C. Chronic inflammation
D. Iron deficiency anemia

Q13. Which protein is more important for transporting copper in the serum?
A. Ceruloplasmin
B. Albumin
C. Both proteins are equally important
D. Neither protein is important for copper transport

Q14. Wilson's disease is associated with a defect in which of the following?
A. Ferrooxidase enzyme activity
B. Copper-binding P-type ATPase (ATP7B protein)
C. Dietary copper absorption
D. Iron-binding proteins

Q15. Which of the following is represented by the following graph
A. Nephrotic syndrome
B. Chronic liver failure
C. Plasma cell myeloma
D. Polyclonal gammopathy



Answers key

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