Chapter 10: Alterations in Immune Function

TRUE/FALSE

1. Type I, II, and III hypersensitivity reactions are mediated by antibodies.

   ANS: T

2. Asthma is caused by a type II hypersensitivity reaction.

   ANS: F

3. Type I hypersensitivity reactions are also called anaphylactic reactions.

   ANS: T

4. Type II hypersensitivity reactions are also called immune complex reactions.

   ANS: F

5. Delayed-type hypersensitivity reactions require participation by T lymphocytes.

   ANS: T

6. Type I hypersensitivity occurs when mast cells release excessive inflammatory granules in response to antigen.

   ANS: T

7. Mast cells bind to the Fc portion of IgE antibodies.

   ANS: T

8. Only persons with allergies produce IgE antibodies.

   ANS: F

9. A type II hypersensitivity reaction occurs when red blood cells are lysed after an incompatible blood transfusion.

   ANS: T

10. Contact dermatitis is a delayed-type hypersensitivity reaction.

    ANS: T

MULTIPLE CHOICE

1. Dramatic hypotension sometimes accompanies type I hypersensitivity reactions because
   a. massive histamine release from mast cells leads to vasodilation.
   b. toxins released into the blood interfere with cardiac function.
   c. anaphylaxis results in large volume losses secondary to sweating.
   d. hypoxia due to bronchoconstriction impairs cardiac function.

   ANS: A

2. Autoimmune diseases
   a. are due to increased T suppressor cell activity associated with aging.
   b. occur only when lymphocytes are in close contact with body cells during embryogenesis.
   c. result from failure of the immune system to differentiate self and nonself molecules.
   d. are often communicable to others by direct contact.

   ANS: C

3. J.B. developed an opportunistic infection that is to be managed with an antibiotic. J.B. has received this antibiotic once previously with no adverse reactions. Which of the following statements should guide administration of the drug this time?
   a. No chance of anaphylaxis since no reaction the first time the antibiotic was given.
   b. Anaphylaxis is antibody mediated and may occur on second exposure.
   c. Anaphylaxis is T-cell mediated and slow to develop.
   d. Antibiotics are rarely associated with anaphylactic reactions.

   ANS: B

4. Which of the following disorders is associated with a type III hypersensitivity mechanism of injury?
   a. Systemic lupus erythematosus
   b. Type I diabetes mellitus
   c. Erythroblastosis fetalis
   d. Addison disease

   ANS: A

5. Excessive production of which T-helper cytokine has been implicated in the development of type I hypersensitivity?
   a. IL-2
   b. IL-4
   c. IL-6
   d. Interferon γ

   ANS: B

6. A patient is given an intradermal injection of antigen and develops redness and induration at the site 72 hours later. This is an example of type _____ hypersensitivity.
   a. I
   b. II
   c. III

d. IV

ANS: D

7. A child with a history of recent strep throat infection develops glomerulonephritis. This is most likely to be a type _____ hypersensitivity reaction.
   a. I
   b. II
   c. III
   d. IV

   ANS: C

8. Plasmapheresis to remove inciting antibodies would *not* be a therapeutic option for
   a. Wegener granulomatosus.
   b. Goodpasture disease.
   c. myasthenia gravis.
   d. transplant rejection.

   ANS: D

9. Certain autoimmune diseases are associated with the presence of specific proteins on a person's cells. These proteins are called _____ proteins.
   a. complement
   b. antibody receptor
   c. HLA or MHC
   d. TCR or BCR

   ANS: C

10. Which of the following disorders is *not* a type IV hypersensitivity disorder?
    a. Blood transfusion reaction
    b. Graft-versus-host disease
    c. Transplant rejection
    d. Contact dermatitis

    ANS: A

11. In which of the following patients would administration of RhoGAM (an Rh antibody) be appropriate?
    a. Rh-negative woman with positive Rh antibody titer carrying Rh-positive fetus
    b. Rh-positive woman with negative Rh antibody titer carrying Rh-negative fetus
    c. Rh-negative woman with negative Rh antibody titer carrying Rh-positive fetus
    d. Rh-negative woman with negative Rh antibody titer carrying Rh-negative fetus

    ANS: C

12. Which of the following disorders is considered a primary immunodeficiency disease?
    a. HIV/AIDS
    b. Malnutrition immunodeficiency
    c. Cancer immunodeficiency
    d. Radiation immunodeficiency

ANS: A

13. Which of the following immunodeficiency diseases is attributed to a genetic defect in enzyme function?
    a. Selective IgA deficiency
    b. DiGeorge syndrome
    c. Severe combined immunodeficiency (SCID)
    d. Cushing syndrome

    ANS: C

14. Which of the following endocrine disorders would contribute most significantly to immunodeficiency?
    a. Hypersecretion of thyroid hormone
    b. Hypersecretion of glucocorticoid hormone
    c. Hyposecretion of adrenocorticotropic hormone
    d. Hypersecretion of prolactin hormone

    ANS: B

15. Patients with immunodeficiency disorders are usually identified because they develop infections
    a. unresponsive to therapy.
    b. from exotic organisms.
    c. of the brain.
    d. from opportunistic organisms.

    ANS: D

MATCHING

Match the following mechanisms of hypersensitivity injury with the autoimmune disorders below (letters may be used more than once).

a. Cytotoxic
b. Immune complex

1. Grave disease
2. Addison disease
3. Systemic lupus erythematosus
4. Type 1 diabetes mellitus
5. Myasthenia gravis

1. ANS: A
2. ANS: A
3. ANS: B
4. ANS: A
5. ANS: A