LEC 2 PATHO INFLAMMATION Q:

1. **What is the primary role of hydrostatic pressure in blood vessel dynamics during acute inflammation?**
   A) To maintain osmotic equilibrium
   B) To induce fluid movement from the interstitium to the lumen
   C) To facilitate the movement of nutrients to tissues
   D) To induce fluid movement from the lumen to the interstitium
2. **Which type of fluid is characterized by high protein content and many cells?**
   A) Transudate
   B) Exudate
   C) Serum
   D) Plasma
3. **What causes the transition from transudate to exudate during inflammation?**
   A) A decrease in blood flow
   B) Damage to endothelial cells and basement membrane
   C) Decreased hydrostatic pressure
   D) Increased osmotic pressure
4. **Which clinical symptom is commonly associated with exudate formation?**
   A) Low-grade fever
   B) Severe fever
   C) Mild swelling
   D) No pain
5. **What is the main characteristic of pus?**
   A) It is a sterile fluid
   B) It contains high levels of proteins only
   C) It is rich in white blood cells and debris
   D) It is primarily a result of transudate leakage
6. **In the context of lymphatic system inflammation, what does lymphangitis refer to?**
   A) Inflammation of lymph nodes
   B) Inflammation of lymphatic vessels
   C) Swelling due to fluid accumulation
   D) Infection of blood vessels
7. **Which leukocyte type is characterized by a multi-lobed nucleus?**
   A) Lymphocytes
   B) Monocytes
   C) Polymorphonuclear neutrophils (PMNs)
   D) Eosinophils
8. **What process describes the movement of leukocytes through the vessel wall into the tissue?**
   A) Margination

B) Rolling
C) Transmigration
D) Chemotaxis

9. **Which of the following proteins is crucial for firm adhesion of leukocytes during the adhesion process?**
   A) Selectins
   B) PECAM-1
   C) Integrins
   D) Collagen
10. **In which condition is fluid accumulation in the lungs, known as pleural effusion, most commonly observed?**
   A) Transudate
   B) Lobar pneumonia
   C) Congestive heart failure
   D) Both B and C

Answers

1. D
2. B
3. B
4. B
5. C
6. B
7. C
8. C
9. C
10. D

11. **What is the main factor that increases vascular permeability during acute inflammation?**
   A) Increased hydrostatic pressure
   B) Histamine release
   C) Low colloid osmotic pressure
   D) Fluid accumulation in the interstitium
12. **Which condition is a classic example of exudate formation?**
   A) Chronic liver disease
   B) Congestive heart failure
   C) Bacterial pneumonia
   D) Mild dehydration
13. **What distinguishes exudate from transudate?**
   A) Presence of pathogens
   B) Higher cell content and protein levels in exudate

C) Transudate has a higher specific gravity
D) Exudate results from dehydration

14. **Which of the following is a major characteristic of polymorphonuclear neutrophils (PMNs)?**
    A) They have a long lifespan of several weeks.
    B) They are primarily responsible for allergic reactions.
    C) They play a key role in the early response to infection.
    D) They originate from lymphoid tissues.
15. **What is the significance of PECAM-1 (CD31) in the leukocyte migration process?**
    A) It mediates the rolling phase.
    B) It facilitates the transmigration of leukocytes through the vessel wall.
    C) It promotes chemotaxis toward infection sites.
    D) It is involved in the adhesion phase.
16. **Which factor is primarily responsible for causing stasis during acute inflammation?**
    A) Increased blood viscosity
    B) Vasodilation
    C) Increased permeability of blood vessels
    D) Decreased blood flow
17. **In the context of lymphadenitis management, what is typically unnecessary for viral infections?**
    A) Antibiotic treatment
    B) Symptomatic treatment
    C) Biopsy
    D) Antiviral drugs
18. **What role do macrophages play once they migrate into tissues?**
    A) They serve as the primary source of histamine.
    B) They become activated and facilitate phagocytosis.
    C) They primarily regulate blood flow.
    D) They only serve as structural support.
19. **What is a potential consequence of prolonged transudate in cases of persistent inflammation?**
    A) Resolution of inflammation
    B) Transition to exudate due to endothelial damage
    C) Increased protein synthesis
    D) Decreased immune response
20. **What are the primary constituents of plasma in the context of blood vessel dynamics?**
    A) Only cells
    B) Only proteins
    C) Fluids and proteins
    D) Lipids and carbohydrates

Answers

11. B
12. C
13. B
14. C
15. B
16. A
17. D
18. B
19. B
20. C

21. **What mechanism primarily explains the net movement of fluids from the intravascular to the extravascular compartment during acute inflammation?**
    A) Increased osmotic pressure
    B) Decreased hydrostatic pressure
    C) Disruption of the equilibrium between hydrostatic and colloid osmotic pressures
    D) Enhanced lymphatic drainage
22. **In cases of chronic renal failure leading to transudate formation, which of the following mechanisms is responsible for low osmotic pressure?**
    A) Increased albumin synthesis
    B) Protein leakage into the urine
    C) Decreased hydrostatic pressure
    D) Enhanced vascular permeability
23. **Which of the following conditions is likely to result in a shift from transudate to exudate due to persistent endothelial damage?**
    A) Acute pancreatitis
    B) Congestive heart failure
    C) Lobar pneumonia
    D) Pulmonary edema due to heart failure
24. **During the early stages of inflammation, what role does vasodilation play in the acute inflammatory response?**
    A) It decreases blood flow to the affected area.
    B) It increases the delivery of leukocytes and nutrients to the site of injury.
    C) It causes the release of cytokines that inhibit leukocyte migration.
    D) It prevents fluid leakage from the vasculature.
25. **Which of the following statements accurately describes the role of integrins in leukocyte adhesion?**
    A) Integrins mediate rolling of leukocytes along the endothelium.
    B) Integrins facilitate weak adhesion before transmigration occurs.
    C) Integrins are involved in the firm adhesion of leukocytes to endothelial

cells.
D) Integrins are primarily responsible for the chemotactic movement of leukocytes.

26. **What is the primary consequence of stasis during acute inflammation?**
    A) Increased leukocyte apoptosis
    B) Impaired delivery of oxygen to tissues
    C) Enhanced fluid absorption by lymphatic vessels
    D) Decreased viscosity of blood
27. **In the context of edema assessment, what critical question must clinicians address?**
    A) Is the edema localized or generalized?
    B) Is the edema due to cardiac failure or renal failure?
    C) Is the edema caused by transudate or exudate leakage?
    D) Is the edema a result of an allergic reaction?
28. **How do leukocytes utilize the diapedesis process?**
    A) By increasing blood flow to the site of infection
    B) By passing through the basement membrane and entering tissues
    C) By activating the complement system
    D) By promoting vasodilation in nearby vessels
29. **Which of the following best describes the composition of exudate in acute inflammation?**
    A) Primarily consists of lymph and few cellular components
    B) High in protein and cellular debris, indicative of an inflammatory response
    C) Low in protein and cellular components, similar to serum
    D) Sterile and free from any pathogens or cellular debris
30. **What is the role of histamine in the vascular changes associated with inflammation?**
    A) It decreases vascular permeability to prevent fluid loss.
    B) It causes vasoconstriction to reduce blood flow.
    C) It induces vasodilation and increases vascular permeability.
    D) It acts as a chemotactic factor for leukocytes.

Answers

21. C
22. B
23. C
24. B
25. C
26. B
27. C
28. B
29. B
30. C

31. **Which characteristic of exudate indicates a severe inflammatory process?**
    A) Low cell content
    B) Presence of microorganisms
    C) Low protein content
    D) High specific gravity
32. **What physiological change occurs during the process of margination in leukocyte adhesion?**
    A) Leukocytes exit the bloodstream into tissues.
    B) Leukocytes slow down and move closer to the endothelium.
    C) Leukocytes are actively recruited by cytokines.
    D) Endothelial cells undergo apoptosis.
33. **In which situation is the analysis of accumulated fluid most critical for diagnosis?**
    A) Transudate due to liver cirrhosis
    B) Exudate in cases of bacterial infection
    C) Determining the cause of pleural effusion
    D) Evaluating generalized edema
34. **What is the primary consequence of increased permeability in the microvasculature during inflammation?**
    A) Enhanced lymphatic drainage
    B) Leakage of large proteins into the interstitium
    C) Decreased migration of leukocytes
    D) Restoration of osmotic balance
35. **In the context of leukocyte recruitment, what does the term "chemotaxis" refer to?**
    A) The process of leukocyte rolling along the endothelium
    B) The movement of leukocytes in response to chemical signals
    C) The adherence of leukocytes to endothelial cells
    D) The differentiation of leukocytes into macrophages
36. **Which statement about macrophages is correct?**
    A) They have a shorter lifespan than neutrophils.
    B) They primarily respond during the initial phase of inflammation.
    C) They become activated upon entering tissues from the bloodstream.
    D) They do not participate in phagocytosis.
37. **What is the result of a persistent inflammatory response in lymph nodes?**
    A) Complete resolution of infection
    B) Decreased lymphatic drainage
    C) Possible development of bacterial lymphadenitis
    D) Increased production of antiviral drugs
38. **In terms of fluid classification, which factor differentiates transudate from exudate?**
    A) Presence of inflammatory cells
    B) Specific gravity greater than 1.020

C) Total protein concentration
D) Viscosity of the fluid

39. **What is the significance of the basement membrane in the context of inflammation?**
    A) It allows unrestricted fluid movement.
    B) It supports endothelial cells and regulates permeability.
    C) It is a primary site for leukocyte migration.
    D) It prevents leukocyte adhesion to the endothelium.
40. **How do neutrophils primarily eliminate pathogens during inflammation?**
    A) By releasing cytokines
    B) Through phagocytosis
    C) By forming clots
    D) By producing antibodies

Answers

31. D
32. B
33. C
34. B
35. B
36. C
37. C
38. C
39. B
40. B

41. **What physiological mechanism primarily leads to the increased hydrostatic pressure observed in congestive heart failure?**
    A) Increased blood viscosity
    B) Impaired venous return
    C) Elevated colloid osmotic pressure
    D) Decreased lymphatic drainage
42. **In cases of exudate formation, which of the following best reflects the underlying pathophysiological process?**
    A) Increased osmotic pressure causing fluid retention
    B) Damage to endothelial cells resulting in leakage of proteins and cells
    C) Transudate due to high plasma protein levels
    D) Vasoconstriction leading to reduced fluid movement
43. **Which specific change occurs during the rolling phase of leukocyte adhesion to the endothelium?**
    A) Leukocytes become firmly attached to endothelial cells.
    B) Leukocytes move rapidly away from the endothelium.

C) Leukocytes interact transiently with selectins on the endothelium.
D) Leukocytes migrate into the interstitium through the basement membrane.

44. **What role does laminin play in the composition of the basement membrane during inflammation?**
    A) It facilitates leukocyte adhesion to endothelial cells.
    B) It provides structural support for the vascular wall.
    C) It acts as a chemotactic factor for leukocytes.
    D) It enhances vascular permeability.
45. **During the inflammatory response, which of the following factors primarily drives the transition from acute inflammation to chronic inflammation?**
    A) Resolution of edema
    B) Persistent pathogenic stimuli
    C) Enhanced leukocyte apoptosis
    D) Decreased cytokine production
46. **Which laboratory finding is most indicative of an exudate when analyzing pleural fluid?**
    A) Total protein level less than 2.5 g/dL
    B) Lactate dehydrogenase (LDH) level less than 200 IU/L
    C) Specific gravity greater than 1.020
    D) Low cell count with few leukocytes
47. **What is the main purpose of diapedesis in the context of inflammation?**
    A) To enhance blood flow to the affected area
    B) To allow leukocytes to exit the bloodstream and enter tissues
    C) To promote the formation of new blood vessels
    D) To facilitate the clearance of dead cells
48. **Which type of leukocyte is primarily responsible for the later stages of the inflammatory response and is crucial for tissue repair?**
    A) Neutrophils
    B) Eosinophils
    C) Macrophages
    D) Lymphocytes
49. **What distinguishes the inflammatory response in cellulitis from that in other forms of inflammation?**
    A) The presence of pus only
    B) The involvement of subcutaneous tissue and skin
    C) A higher incidence of viral pathogens
    D) The absence of leukocyte infiltration
50. **What critical role does the lymphatic system play in managing inflammation?**
    A) It provides nutrients to inflamed tissues.
    B) It drains excess fluid and facilitates immune cell transport.
    C) It prevents blood flow to inflamed areas.
    D) It synthesizes antibodies directly in the inflamed area.

Answers

41. B
42. B
43. C
44. B
45. B
46. C
47. B
48. C
49. B
50. B

51. **What is the consequence of increased vascular permeability during acute inflammation?**
    A) Decreased interstitial fluid volume
    B) Enhanced reabsorption of fluids into capillaries
    C) Leakage of proteins and fluids into the interstitium
    D) Reduced leukocyte migration to tissues
52. **Which of the following mechanisms contributes to the characteristic redness (erythema) observed during inflammation?**
    A) Increased blood flow due to vasodilation
    B) Decreased blood volume in capillaries
    C) Enhanced lymphatic drainage
    D) Vasoconstriction of arterioles
53. **In the context of edema, what is the significance of identifying whether the fluid is a transudate or exudate?**
    A) It helps determine the type of treatment required.
    B) It indicates the underlying cause of fluid accumulation.
    C) It predicts the patient's prognosis.
    D) It confirms the presence of infection.
54. **How do selectins function in the leukocyte adhesion process during inflammation?**
    A) They facilitate the transmigration of leukocytes into tissues.
    B) They mediate weak, initial adhesion between leukocytes and the endothelium.
    C) They enhance the phagocytic ability of leukocytes.
    D) They increase the permeability of the endothelium.
55. **What is a hallmark of the transition from transudate to exudate during inflammation?**
    A) Decreased protein concentration in the fluid
    B) Formation of fibrin clots in the interstitium
    C) Increased number of leukocytes in the fluid
    D) Higher osmotic pressure in the interstitial fluid

56. **Which cytokine is most closely associated with the recruitment of neutrophils to sites of inflammation?**
    A) Interleukin-1 (IL-1)
    B) Tumor necrosis factor-alpha (TNF-α)
    C) Interleukin-6 (IL-6)
    D) Transforming growth factor-beta (TGF-β)
57. **In the context of chronic inflammation, what is the role of macrophages in tissue repair?**
    A) They initiate the inflammatory response.
    B) They phagocytose pathogens and debris, facilitating healing.
    C) They promote vasodilation to increase blood flow.
    D) They form scar tissue directly.
58. **What diagnostic procedure may be necessary to differentiate between transudate and exudate in clinical practice?**
    A) MRI of affected tissues
    B) Biopsy of surrounding tissues
    C) Analysis of pleural or peritoneal fluid
    D) Complete blood count (CBC)
59. **What condition might result in lymphangitis, characterized by inflammation of lymphatic vessels?**
    A) Acute appendicitis
    B) Severe bacterial infections
    C) Viral respiratory infections
    D) Chronic renal failure
60. **Which of the following best describes the role of integrins during the diapedesis process?**
    A) They allow leukocytes to detach from the endothelium.
    B) They facilitate firm adhesion of leukocytes to the endothelium.
    C) They promote the rolling of leukocytes along the vessel wall.
    D) They are involved in the phagocytosis of pathogens.

Answers

51. C
52. A
53. B
54. B
55. C
56. B
57. B
58. C
59. B
60. B

61. **Which factor primarily influences the movement of leukocytes from the bloodstream into the interstitium during inflammation?**
    A) Increased osmotic pressure
    B) Endothelial retraction and pore formation
    C) Decreased hydrostatic pressure
    D) Enhanced blood viscosity
62. **What is the relationship between stasis and inflammation?**
    A) Stasis leads to increased oxygen delivery to tissues.
    B) Stasis contributes to the accumulation of metabolic waste.
    C) Stasis is a result of increased leukocyte migration.
    D) Stasis decreases vascular permeability.
63. **Which clinical condition is most likely to lead to the formation of pus?**
    A) Chronic renal failure
    B) Severe bacterial infection
    C) Heart failure
    D) Allergic reaction
64. **In the context of leukocyte migration, what does the term "margination" refer to?**
    A) The process of leukocytes moving deeper into tissues.
    B) The lateral movement of leukocytes closer to the vessel wall.
    C) The adherence of leukocytes to the extracellular matrix.
    D) The release of leukocytes from the bone marrow.
65. **What is the significance of the high protein content in exudate compared to transudate?**
    A) It indicates the presence of infection or inflammation.
    B) It prevents further leakage of fluids from vessels.
    C) It promotes tissue repair and healing.
    D) It enhances oxygen delivery to tissues.
66. **Which characteristic of lymphadenitis might suggest a bacterial infection rather than a viral one?**
    A) Presence of lymphangitis
    B) Bilateral lymph node enlargement
    C) Swollen, painful lymph nodes that persist despite symptomatic treatment
    D) Rapid resolution of symptoms
67. **What role do neutrophils play in the early stages of inflammation?**
    A) They mediate the repair of damaged tissues.
    B) They provide a primary defense against pathogens through phagocytosis.
    C) They are responsible for the production of antibodies.
    D) They facilitate the clearance of cellular debris.
68. **Which change occurs in the endothelial cells during the inflammatory response?**
    A) They undergo apoptosis.
    B) They become less permeable.

C) They retract to form gaps, allowing fluid and cells to exit.
D) They increase synthesis of collagen.

69. **What is the main mechanism by which exudate formation differs from transudate formation?**
    A) Exudate formation occurs without any endothelial damage.
    B) Exudate formation is associated with inflammatory processes that alter vascular permeability.
    C) Transudate formation results from infections.
    D) Exudate is always sterile, while transudate contains bacteria.
70. **What is the role of CD31 (PECAM-1) during leukocyte transmigration?**
    A) It enhances the rolling phase of leukocyte adhesion.
    B) It promotes the adhesion of leukocytes to the endothelium.
    C) It facilitates the passage of leukocytes through the endothelial junctions.
    D) It regulates the secretion of cytokines by leukocytes.

Answers

61. B
62. B
63. B
64. B
65. A
66. C
67. B
68. C
69. B
70. C

71. **The balance between hydrostatic and colloid osmotic pressures is critical for maintaining fluid equilibrium in the vascular system.**
    A) Correct
    B) Incorrect
72. **Exudate has a low protein content and low specific gravity.**
    A) Correct
    B) Incorrect
73. **Transudate formation is primarily due to increased vascular permeability caused by inflammation.**
    A) Correct
    B) Incorrect
74. **Polymorphonuclear neutrophils (PMNs) play a key role in the early response to infection and inflammation.**
    A) Correct
    B) Incorrect

75. **Laminin is a protein that is integral to the structure of the basement membrane.**
    A) Correct
    B) Incorrect
76. **The presence of severe fever and dyspnea are clinical symptoms indicative of transudate.**
    A) Correct
    B) Incorrect
77. **The primary function of histamine during inflammation is to promote vasoconstriction.**
    A) Correct
    B) Incorrect
78. **Leukocytes migrate into tissues through a process known as diapedesis, which involves interaction with PECAM-1 (CD31).**
    A) Correct
    B) Incorrect
79. **Chronic liver disease can lead to transudate formation due to decreased protein synthesis.**
    A) Correct
    B) Incorrect
80. **Fluid analysis of pleural effusion is typically unnecessary for determining the cause of fluid accumulation.**
    A) Correct
    B) Incorrect

Answers

71. A
72. B
73. B
74. A
75. A
76. B
77. B
78. A
79. A
80. B

81. **Which of the following statements is NOT correct regarding acute inflammation?**
    A) Hydrostatic pressure is induced by intravascular fluids.
    B) Colloid osmotic pressure is primarily due to proteins like albumin.
    C) Exudate has a low protein content and low specific gravity.

D) Increased vascular permeability allows fluid movement into the interstitium.

82. **Which of the following statements about transudate and exudate is NOT correct?**
    A) Transudate typically has a low protein content.
    B) Exudate is associated with inflammation and has high cell content.
    C) Transudate formation usually indicates endothelial damage.
    D) Exudate indicates a severe inflammatory reaction.
83. **Which of the following statements about the role of leukocytes in inflammation is NOT correct?**
    A) PMNs are the first responders to sites of infection.
    B) Macrophages originate from circulating monocytes.
    C) Leukocytes do not play a role in phagocytosis.
    D) Chemotaxis guides leukocytes to areas of infection.
84. **Which of the following statements regarding edema is NOT correct?**
    A) Edema refers to excess fluid in interstitial spaces.
    B) Both transudate and exudate can cause edema.
    C) Edema formation is solely due to high hydrostatic pressure.
    D) Fluid composition can help determine the cause of edema.
85. **Which of the following statements about the lymphatic system during inflammation is NOT correct?**
    A) Lymphangitis refers to inflammation of lymphatic vessels.
    B) Lymphadenitis is commonly caused by viral infections.
    C) Enlarged lymph nodes indicate a bacterial infection.
    D) The lymphatic system aids in draining excess interstitial fluid.
86. **Which of the following statements regarding vascular changes in inflammation is NOT correct?**
    A) Vasodilation leads to increased blood flow and redness.
    B) Endothelial cells retract to increase permeability.
    C) Stasis results in rapid leukocyte migration to tissues.
    D) Increased permeability allows for the formation of exudate.
87. **Which of the following statements about fluid analysis in cases of edema is NOT correct?**
    A) Analysis helps differentiate between transudate and exudate.
    B) A biopsy is always necessary for definitive diagnosis.
    C) Fluid composition can indicate underlying conditions.
    D) The analysis can guide treatment decisions.
88. **Which of the following statements about macrophages is NOT correct?**
    A) They are primarily involved in the initial response to infection.
    B) They can persist in tissues for years as resident macrophages.
    C) They play a crucial role in phagocytosis.
    D) They originate from monocytes after migrating from the bloodstream.
89. **Which of the following statements regarding leukocyte adhesion is NOT correct?**

A) Selectins mediate the initial weak adhesion of leukocytes.
B) Integrins facilitate firm adhesion to the endothelium.
C) The rolling phase is characterized by strong attachment.
D) Margination refers to the lateral movement of leukocytes toward the vessel wall.

90. **Which of the following statements about the effects of histamine during inflammation is NOT correct?**
A) Histamine causes vasodilation in blood vessels.
B) Histamine increases the permeability of endothelial cells.
C) Histamine directly promotes leukocyte migration into tissues.
D) Histamine release contributes to the redness and swelling of inflammation.

Answers

81. C
82. C
83. C
84. C
85. C
86. C
87. B
88. A
89. C
90. C

91. **Case 1: A 65-year-old male presents with a fever, dyspnea, and pleuritic chest pain. A pleural fluid analysis shows a high protein content and numerous leukocytes. Which of the following statements is correct regarding his condition?**
A) The fluid is likely a transudate due to congestive heart failure.
B) The presence of high protein content suggests an exudate.
C) The leukocyte count indicates a normal inflammatory response.
D) The condition is unlikely to be bacterial pneumonia.
92. **Case 2: A patient with chronic liver disease presents with ascites. Fluid analysis reveals low protein levels and low specific gravity. Which of the following is most likely correct?**
A) This indicates an exudative process.
B) The ascitic fluid is classified as transudate.
C) High cell content in the fluid suggests infection.
D) The low protein levels indicate an inflammatory reaction.
93. **Case 3: A 40-year-old female presents with swollen lymph nodes in the neck. A biopsy shows reactive lymphadenitis with a predominance of lymphocytes. Which of the following statements is correct?**
A) This is likely due to a bacterial infection.

B) Viral infections can cause reactive lymphadenitis.
C) Swelling indicates that there is no underlying inflammation.
D) The presence of neutrophils suggests chronic inflammation.

94. **Case 4: A patient with cellulitis exhibits redness, warmth, and swelling in the affected limb. Which of the following mechanisms primarily causes the observed erythema?**
A) Decreased blood flow to the area
B) Vasodilation due to histamine release
C) Increased lymphatic drainage
D) High hydrostatic pressure in the lymphatic system

95. **Case 5: An elderly patient presents with signs of infection and has an elevated white blood cell count, primarily neutrophils. Which of the following processes is most critical for neutrophil migration to the site of infection?**
A) Diapedesis through the basement membrane
B) Margination and rolling along the endothelium
C) Phagocytosis of pathogens
D) Chemotaxis toward inflammatory mediators

96. **Case 6: A patient diagnosed with bacterial pneumonia shows signs of pus formation in the pleural space. Which of the following statements about the fluid is most accurate?**
A) It is likely a transudate due to low protein levels.
B) It indicates a severe inflammatory reaction with high cell debris.
C) It is typically sterile and free of bacteria.
D) The fluid formation is a normal response to injury.

97. **Case 7: A 30-year-old male presents with lymphangitis following a skin infection. Which of the following statements is correct regarding his condition?**
A) Lymphangitis is characterized by inflammation of blood vessels.
B) Lymphangitis can result from both viral and bacterial infections.
C) This condition indicates a lack of immune response.
D) Lymphadenitis and lymphangitis are synonymous terms.

98. **Case 8: A patient is diagnosed with chronic renal failure and presents with edema. The fluid analysis shows low protein content. Which of the following statements about the fluid is most appropriate?**
A) The fluid is classified as exudate due to high cell content.
B) This fluid likely represents transudate due to low oncotic pressure.
C) The high specific gravity indicates severe inflammation.
D) The presence of pus suggests bacterial infection.

99. **Case 9: A 50-year-old woman has persistent swelling in her left leg with painful lymph nodes. What is the most likely diagnosis?**
A) Viral lymphadenitis requiring antiviral therapy
B) Bacterial lymphadenitis necessitating antibiotic treatment

C) Transudate formation due to heart failure
D) Edema resulting from chronic liver disease

100. **Case 10: A 55-year-old male with a history of diabetes presents with foot cellulitis. What is the primary leukocyte involved in the initial inflammatory response?**
A) Lymphocytes
B) Monocytes
C) Eosinophils
D) Neutrophils

Answers

91. B
92. B
93. B
94. B
95. B
96. B
97. B
98. B
99. B
100. D

101. **Case 1: A 70-year-old woman with a history of congestive heart failure presents with pulmonary edema. A fluid analysis shows low protein content and low specific gravity. Which of the following statements is NOT correct regarding her condition?**
A) The fluid is likely classified as transudate.
B) The edema is primarily due to increased hydrostatic pressure.
C) The fluid analysis indicates significant endothelial damage.
D) This condition is commonly associated with heart failure.

102. **Case 2: A 45-year-old man is hospitalized with lobar pneumonia. He has a high fever and pleuritic chest pain. A pleural fluid sample shows a high white blood cell count with a predominance of neutrophils. Which of the following statements is most accurate?**
A) The fluid is classified as transudate due to the low protein content.
B) The presence of neutrophils indicates a bacterial infection.
C) The fluid analysis is unnecessary if the symptoms are consistent with pneumonia.
D) The leukocyte profile suggests a viral infection.

103. **Case 3: A patient presents with chronic swelling in the abdomen and has a history of chronic liver disease. Fluid analysis reveals high protein content with a predominance of inflammatory cells. Which statement about this patient's condition is NOT correct?**

A) The fluid is classified as exudate.
B) High protein levels suggest a significant inflammatory response.
C) The swelling is likely due to hepatic congestion.
D) This condition may indicate a bacterial infection.

104. **Case 4: A 35-year-old male presents with fever and a painful swollen lymph node in the groin. A biopsy shows granulomatous inflammation. Which of the following is NOT a likely cause of his condition?**
A) Tuberculosis lymphadenitis
B) Reactive hyperplasia due to a viral infection
C) Bacterial lymphadenitis from a skin infection
D) Chronic inflammatory response to an autoimmune disorder

105. **Case 5: A 60-year-old diabetic patient develops cellulitis on his foot. Blood tests reveal elevated levels of inflammatory markers. Which statement regarding the leukocyte response is most accurate?**
A) The initial response will primarily involve macrophages.
B) Neutrophils are likely to dominate the early inflammatory response.
C) Eosinophils play a major role in the response to bacterial infections.
D) Lymphocytes are the first cells to migrate to the site of infection.

106. **Case 6: An elderly man presents with significant lymphadenopathy. A fluid aspiration shows a low leukocyte count and low protein content. Which of the following statements about his condition is most appropriate?**
A) The low protein level suggests an exudate.
B) This presentation is consistent with a viral infection.
C) The lymphadenopathy is likely due to a malignant process.
D) The fluid is likely classified as transudate.

107. **Case 7: A 50-year-old woman is diagnosed with systemic lupus erythematosus and presents with pleuritis. Fluid analysis indicates a high white blood cell count and elevated protein levels. Which statement about her pleural effusion is most likely correct?**
A) The fluid is likely a transudate due to the autoimmune nature of her condition.
B) The presence of elevated protein levels suggests an exudative process.
C) The leukocyte profile indicates a clear viral infection.
D) Pleuritis is unrelated to her underlying condition.

108. **Case 8: A patient with chronic renal failure develops significant edema and has a low serum albumin level. Which of the following statements is NOT correct regarding this patient's fluid status?**
A) The edema is likely due to decreased oncotic pressure.
B) The fluid may be classified as transudate.
C) There is likely significant endothelial damage leading to exudate formation.
D) High hydrostatic pressure can contribute to fluid retention.

109. **Case 9: A 40-year-old woman presents with an abscess on her leg. The abscess is filled with pus and contains numerous PMNs. Which of the following statements is NOT correct regarding the pus formation?**
A) Pus indicates a significant inflammatory response.
B) The presence of PMNs suggests a bacterial infection.
C) Pus can form from the accumulation of dead cells and tissue debris.
D) Pus is typically sterile and free of pathogens.

110. **Case 10: A patient develops signs of a severe bacterial infection and presents with a high leukocyte count. Which process is primarily responsible for the recruitment of leukocytes to the site of infection?**
A) Phagocytosis by resident macrophages
B) Chemotaxis in response to inflammatory mediators
C) Direct migration through the lymphatic vessels
D) Formation of new blood vessels in the affected area

Answers

101. C
102. B
103. C
104. D
105. B
106. D
107. B
108. C
109. D
110. B

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