LEC 1 PATHOLOGY – INFLAMMATIONS Q:

1. **What is the primary purpose of inflammation in vascularized tissue?**
   A) To promote tissue necrosis
   B) To eliminate the offending agent
   C) To induce apoptosis
   D) To stimulate muscle growth
2. **In the example of viral tonsillitis, what is the primary response of the tonsils?**
   A) Dehydration
   B) Swelling and congestion
   C) Atrophy
   D) Complete necrosis
3. **Which of the following is NOT a cardinal sign of inflammation?**
   A) Heat (Calor)
   B) Swelling (Tumor)
   C) Hypertension
   D) Pain (Dolor)
4. **Acute inflammation is characterized by which type of cellular infiltrate?**
   A) Plasma cells
   B) Neutrophils
   C) Lymphocytes
   D) Eosinophils
5. **What initiates the reparative process during inflammation?**
   A) Recruitment of neutrophils
   B) Release of cytokines
   C) Recruitment of fibroblasts
   D) Vasodilation
6. **Which type of inflammation has a slower onset and involves different immune cells?**
   A) Acute inflammation
   B) Chronic inflammation
   C) Immediate hypersensitivity
   D) Septic shock
7. **Which mechanism is primarily involved in acute respiratory distress syndrome (ARDS)?**
   A) IgE antibodies
   B) Eosinophils
   C) Neutrophils
   D) Cytokines
8. **What can excessive inflammation lead to?**
   A) Enhanced wound healing
   B) Tissue damage
   C) Increased immunity
   D) Rapid recovery
9. **The five Rs of the inflammatory response include all EXCEPT:**
   A) Recognition
   B) Regeneration
   C) Recruitment
   D) Resolution

10. **What is a common cause of inflammation related to foreign materials?**
    A) Viral infection
    B) Allergies
    C) Splinters
    D) Physical trauma

Answers

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

11. **What happens during the chemical mediator release phase of inflammation?**
    A) Vasoconstriction occurs
    B) Macrophages are activated
    C) Cytokines are secreted
    D) Tissue becomes necrotic
12. **Which type of white blood cells predominantly infiltrate during acute inflammation?**
    A) Lymphocytes
    B) Eosinophils
    C) Neutrophils
    D) Plasma cells
13. **In chronic inflammation, which immune cells are primarily involved?**
    A) Neutrophils
    B) Plasma cells and lymphocytes
    C) Macrophages only
    D) Eosinophils
14. **Which process describes the elimination of an offending agent during inflammation?**
    A) Phagocytosis
    B) Apoptosis
    C) Necrosis
    D) Regeneration
15. **What is a potential consequence of misdirected inflammation?**
    A) Enhanced recovery
    B) Autoimmune diseases
    C) Immediate healing
    D) Decreased immunity
16. **Which chemical mediator is predominantly associated with vasodilation?**
    A) Histamine
    B) Cytokines

C) Complement proteins
D) Antibodies

17. **What characterizes the tissue injury and fibrosis associated with chronic inflammation?**
    A) Rapid healing
    B) Noticeable symptoms
    C) Ongoing tissue damage and scarring
    D) Complete recovery
18. **Which of the following conditions is classified as a chronic syndrome?**
    A) Acute bronchial asthma
    B) Septic shock
    C) Pulmonary fibrosis
    D) Acute glomerulonephritis
19. **What is a common trigger for inflammation related to immune reactions?**
    A) Bacterial infection
    B) Physical trauma
    C) Allergens
    D) Chemical exposure
20. **What do Toll-like receptors (TLRs) primarily recognize?**
    A) Damage-associated molecular patterns (DAMPs)
    B) Pathogen-associated molecular patterns (PAMPs)
    C) Cytokines
    D) Growth factors

Answers

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

21. **What is the first step in the inflammatory process?**
    A) Cellular recognition
    B) Stimulus recognition
    C) Recruitment of inflammatory cells
    D) Chemical mediator release
22. **During the recruitment phase of inflammation, what do monocytes transform into?**
    A) Neutrophils
    B) Activated macrophages
    C) Eosinophils
    D) Lymphocytes
23. **Which feature distinguishes acute inflammation from chronic inflammation?**

A) Predominance of lymphocytes
B) Duration of symptoms
C) Presence of pain
D) Type of injury

24. **What is a potential outcome of persistent injury due to inflammation?**
A) Immediate recovery
B) Resolution without complications
C) Chronic inflammation
D) Complete necrosis

25. **Which of the following is a local sign of inflammation?**
A) Fever
B) Pain
C) Fatigue
D) Weight loss

26. **In which condition is the immune response mediated primarily by eosinophils?**
A) Septic shock
B) Bronchial asthma
C) Acute glomerulonephritis
D) Acute tonsillitis

27. **What is the significance of the complement system in inflammation?**
A) It mediates allergic reactions.
B) It helps recognize microbes and damaged cells.
C) It causes vasodilation.
D) It prevents tissue repair.

28. **Which of the following statements about chronic inflammation is true?**
A) It is always symptomatic.
B) It can lead to significant organ damage over time.
C) It resolves quickly without treatment.
D) It is characterized solely by neutrophil infiltration.

29. **What role do fibroblasts play in the reparative process?**
A) They initiate the inflammatory response.
B) They contribute to tissue scarring and repair.
C) They eliminate pathogens.
D) They release cytokines.

30. **Which type of inflammation may occur without noticeable symptoms until significant organ damage occurs?**
A) Acute inflammation
B) Chronic inflammation
C) Immediate hypersensitivity
D) Systemic inflammation

Answers

21. B
22. B
23. B
24. C
25. B
26. B

27. B
28. B
29. B
30. B

31. **Which phase of inflammation is characterized by increased vascular permeability, allowing plasma proteins to escape into the tissue?**
    A) Vascular phase
    B) Cellular phase
    C) Reparative phase
    D) Recognition phase
32. **What specific role do neutrophils play during the acute inflammatory response?**
    A) They initiate the reparative process by recruiting fibroblasts.
    B) They secrete antibodies to neutralize pathogens.
    C) They phagocytize pathogens and release cytokines to attract other immune cells.
    D) They act as memory cells for future immune responses.
33. **The activation of inflammasomes in response to tissue damage is primarily associated with which of the following?**
    A) Recognition of PAMPs
    B) Recognition of DAMPs
    C) Cytokine production
    D) Phagocytosis
34. **Which of the following conditions is most directly associated with an exaggerated immune response leading to tissue damage?**
    A) Chronic glomerulonephritis
    B) Acute appendicitis
    C) Pulmonary fibrosis
    D) Gouty arthritis
35. **What is the significance of cytokines in the inflammatory process?**
    A) They primarily cause tissue damage.
    B) They regulate the recruitment and activity of immune cells.
    C) They promote tissue necrosis.
    D) They are solely responsible for pain sensation.
36. **In the context of inflammation, what does the term "resolution" refer to?**
    A) The complete healing of tissues without any scar formation
    B) The process of controlling and terminating the inflammatory response
    C) The initial recognition of the offending agent
    D) The recruitment of immune cells to the injury site
37. **Which of the following accurately describes the differences between acute and chronic inflammation regarding tissue injury?**
    A) Acute inflammation is always symptomatic, while chronic inflammation is not.
    B) Chronic inflammation often leads to fibrosis and irreversible tissue damage, while acute inflammation does not.
    C) Acute inflammation is characterized by gradual tissue damage over time, while chronic inflammation resolves quickly.
    D) Both acute and chronic inflammation cause immediate tissue necrosis.

38. **What type of cells are primarily responsible for the long-term effects seen in chronic inflammation?**
    A) Neutrophils
    B) Eosinophils
    C) Macrophages and lymphocytes
    D) Fibroblasts
39. **Which of the following mechanisms is a key difference between acute and chronic inflammation?**
    A) Presence of vascular changes
    B) Speed of onset
    C) Types of cytokines released
    D) Type of cellular infiltrate
40. **What is the role of mannose-binding lectins in the inflammatory response?**
    A) They enhance phagocytosis of bacteria.
    B) They are involved in the recognition of pathogens.
    C) They release inflammatory mediators.
    D) They act as a barrier to infection.

Answers

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

41. **Which of the following best describes the role of macrophages in chronic inflammation?**
    A) They are the primary cells responsible for immediate tissue repair.
    B) They can produce inflammatory mediators and contribute to ongoing tissue damage.
    C) They only function as antigen-presenting cells.
    D) They are exclusively involved in phagocytosis without further signaling.
42. **What is the primary function of Toll-like receptors (TLRs) during inflammation?**
    A) To directly kill pathogens
    B) To recognize damage-associated molecular patterns (DAMPs)
    C) To recognize pathogen-associated molecular patterns (PAMPs)
    D) To mediate cytokine release
43. **Which characteristic is most indicative of chronic inflammation compared to acute inflammation?**
    A) Rapid onset
    B) Predominance of neutrophils

C) Presence of fibrosis
D) Short duration of symptoms

44. **What condition is primarily associated with a persistent overactive immune response targeting the body's own tissues?**
    A) Acute bronchial asthma
    B) Systemic lupus erythematosus
    C) Acute glomerulonephritis
    D) Atherosclerosis
45. **In the inflammatory response, what is the significance of leukocyte recruitment?**
    A) It initiates the repair process immediately.
    B) It helps in recognizing and eliminating pathogens effectively.
    C) It is unnecessary for the resolution of inflammation.
    D) It solely contributes to the pain experienced during inflammation.
46. **What physiological changes occur during the vascular phase of inflammation?**
    A) Increased blood flow due to vasodilation
    B) Decreased permeability of blood vessels
    C) Increased formation of antibodies
    D) Complete cessation of blood flow to the area
47. **What type of inflammatory response is likely to occur following tissue necrosis due to ischemia?**
    A) Localized immune response
    B) Autoimmune response
    C) Acute inflammatory response
    D) Chronic inflammatory response
48. **What is the potential outcome of chronic inflammation on organ systems?**
    A) Complete recovery of function without scarring
    B) Development of fibrosis and irreversible damage
    C) Immediate resolution of all symptoms
    D) Enhanced immune function
49. **In the context of inflammation, what does "collateral damage" refer to?**
    A) Damage to the offending pathogen
    B) Unintentional injury to healthy tissues caused by the inflammatory response
    C) Healing of tissues adjacent to the inflamed area
    D) Enhanced blood flow to the site of injury
50. **Which of the following best summarizes the role of chemical mediators in inflammation?**
    A) They are responsible for direct tissue repair.
    B) They primarily function to eliminate pathogens without side effects.
    C) They orchestrate the inflammatory response by regulating vascular and cellular events.
    D) They are exclusively produced by macrophages.

Answers

41. B
42. C
43. C

44. B
45. B
46. A
47. C
48. B
49. B
50. C

51. **What is the primary mechanism by which neutrophils eliminate pathogens during acute inflammation?**
    A) Cytokine release
    B) Phagocytosis and intracellular killing
    C) Apoptosis
    D) Antibody production
52. **Which of the following correctly describes the role of cytokines in the inflammatory response?**
    A) They solely induce pain.
    B) They act as signaling molecules to recruit and activate immune cells.
    C) They only function during the reparative phase.
    D) They are not involved in chronic inflammation.
53. **Which cell type is primarily responsible for the transition from acute to chronic inflammation?**
    A) Neutrophils
    B) T lymphocytes
    C) Monocytes/macrophages
    D) Basophils
54. **What is a key factor that differentiates the systemic effects of acute inflammation from local effects?**
    A) Vasodilation
    B) Fever and elevated white blood cell counts
    C) Pain at the site of injury
    D) Swelling
55. **In the context of inflammation, what does the term "resolution" entail?**
    A) Complete elimination of all immune cells from the area
    B) Control and cessation of the inflammatory response, leading to tissue healing
    C) Permanent scarring of the affected tissues
    D) Initiation of an autoimmune response
56. **What pathological change can result from chronic inflammation in the kidneys?**
    A) Hyperplasia
    B) Glomerulosclerosis
    C) Increased filtration rate
    D) Nephrotoxicity
57. **Which type of receptor is primarily responsible for detecting foreign pathogens and initiating the inflammatory response?**
    A) Cytokine receptors
    B) Chemokine receptors
    C) Toll-like receptors (TLRs)
    D) Histamine receptors

58. **What is the significance of the vascular phase in inflammation?**
    A) It prevents blood flow to the affected area.
    B) It allows for increased delivery of immune cells and plasma proteins to the site of injury.
    C) It solely focuses on tissue repair.
    D) It is the final step in the inflammatory response.
59. **Which of the following conditions is an example of an autoimmune disease linked to chronic inflammation?**
    A) Atherosclerosis
    B) Rheumatoid arthritis
    C) Acute bronchitis
    D) Appendicitis
60. **In the context of inflammatory mediators, which of the following plays a role in promoting vascular permeability?**
    A) Interferons
    B) Prostaglandins
    C) Antibodies
    D) Cytokines

Answers

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

61. **What is the main cellular characteristic that distinguishes neutrophils from macrophages during an acute inflammatory response?**
    A) Neutrophils have a single nucleus, while macrophages have multiple nuclei.
    B) Neutrophils primarily undergo apoptosis, while macrophages do not.
    C) Neutrophils are characterized by three-lobed nuclei.
    D) Neutrophils do not participate in phagocytosis, while macrophages do.
62. **Which statement about the repair process following inflammation is accurate?**
    A) Fibroblasts are only involved in acute inflammation.
    B) Repair involves regeneration of tissue or scar formation, depending on the extent of injury.
    C) The repair process eliminates the need for inflammatory mediators.
    D) Repair occurs simultaneously with the initial inflammatory response.
63. **What distinguishes chronic inflammation from acute inflammation in terms of symptoms and duration?**
    A) Chronic inflammation has a rapid onset and significant pain.
    B) Chronic inflammation lasts longer and may remain asymptomatic until

advanced tissue damage occurs.
C) Chronic inflammation resolves quickly, while acute inflammation persists indefinitely.
D) Chronic inflammation leads to immediate tissue necrosis.

64. **What is the primary cause of septic shock as outlined in the text?**
A) Direct tissue necrosis
B) Excessive production of cytokines due to severe bacterial infection
C) Immune hypersensitivity
D) Chronic inflammatory response

65. **In the context of inflammatory responses, what are DAMPs primarily recognized by?**
A) Toll-like receptors
B) Chemokine receptors
C) Epithelial cells
D) Circulating antibodies

66. **Which of the following accurately reflects the effects of excessive inflammation on healthy tissue?**
A) It enhances the healing process significantly.
B) It may lead to tissue destruction and complications.
C) It does not affect healthy tissue at all.
D) It only causes temporary pain and swelling.

67. **What is the role of chemokines during inflammation?**
A) They inhibit the migration of leukocytes.
B) They promote the differentiation of B cells into plasma cells.
C) They guide the movement of immune cells to the site of injury.
D) They solely cause pain at the site of inflammation.

68. **Which of the following best describes the interaction between macrophages and the immune response during chronic inflammation?**
A) Macrophages solely act as scavengers without activating other immune cells.
B) Macrophages can produce pro-inflammatory cytokines, perpetuating the inflammatory response.
C) Macrophages have no role in chronic inflammation.
D) Macrophages eliminate all pathogens immediately upon recognition.

69. **What is the consequence of an insufficient inflammatory response to an infection?**
A) Increased risk of autoimmune diseases
B) Higher chances of opportunistic infections
C) Enhanced healing and recovery
D) Immediate tissue repair

70. **In which scenario would you expect to see the predominance of plasma cells in the inflammatory response?**
A) During acute viral infections
B) In chronic inflammation associated with autoimmune disorders
C) In the early stages of acute inflammation
D) Following immediate tissue repair

Answers

61. C

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

71. **What is the main physiological effect of amines released during inflammation?**
    A) Vasoconstriction
    B) Decreased vascular permeability
    C) Vasodilation and increased vascular permeability
    D) Stimulation of pain receptors
72. **Which type of inflammatory response would most likely involve the activation of eosinophils?**
    A) Acute bacterial infection
    B) Viral infections
    C) Allergic reactions and parasitic infections
    D) Autoimmune disorders
73. **Which of the following is a common feature of both acute and chronic inflammation?**
    A) Rapid onset
    B) Presence of neutrophils
    C) Involvement of immune cells
    D) Immediate resolution
74. **What cellular changes occur during the migration phase of the inflammatory response?**
    A) Decreased permeability of endothelial cells
    B) Transmigration of leukocytes through the endothelium
    C) Direct killing of pathogens by plasma cells
    D) Activation of T cells
75. **What is the primary role of fibroblasts in the reparative process following inflammation?**
    A) To eliminate pathogens through phagocytosis
    B) To produce collagen and extracellular matrix components for tissue repair
    C) To secrete cytokines that mediate inflammation
    D) To enhance blood flow to the affected area
76. **Which of the following best describes the relationship between inflammation and wound healing?**
    A) Inflammation is detrimental and hinders the healing process.
    B) Inflammation is essential for initiating the healing process and tissue repair.
    C) Inflammation and wound healing occur independently of each other.
    D) Wound healing is a form of chronic inflammation.
77. **What role do circulating proteins play in the recognition of pathogens during inflammation?**
    A) They directly phagocytize pathogens.
    B) They enhance the inflammatory response by releasing cytokines.

C) They recognize and bind to specific pathogens, facilitating their clearance.
D) They are responsible for pain sensation.

78. **Which pathological outcome is most likely associated with prolonged chronic inflammation?**
    A) Complete recovery of function
    B) Tissue regeneration
    C) Fibrosis and loss of organ function
    D) Temporary inflammatory responses
79. **How does the immune response contribute to the symptoms of inflammation, such as heat and redness?**
    A) By increasing metabolic activity and blood flow to the affected area
    B) By decreasing local blood flow
    C) By inhibiting cytokine release
    D) By causing vasoconstriction
80. **Which inflammatory mediator is primarily responsible for inducing fever during systemic inflammation?**
    A) Histamine
    B) Prostaglandins
    C) Interleukin-1 (IL-1)
    D) Complement proteins

Answers

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

81. **What is the primary reason for the shift from neutrophils to monocytes/macrophages in chronic inflammation?**
    A) Neutrophils have a shorter lifespan and are replaced by longer-living cells.
    B) Monocytes are more effective at phagocytosis than neutrophils.
    C) Neutrophils are not involved in chronic inflammatory processes.
    D) Monocytes produce more cytokines than neutrophils.
82. **Which of the following processes is most directly inhibited by anti-inflammatory medications?**
    A) Vascular permeability
    B) Cytokine production
    C) Phagocytosis
    D) Tissue repair
83. **What role do chemokines play in the recruitment of leukocytes during inflammation?**
    A) They promote vasodilation at the injury site.
    B) They act as signals that guide leukocytes to areas of injury or infection.

C) They are responsible for the production of antibodies.
D) They initiate the repair process by activating fibroblasts.

84. **Which mechanism is primarily responsible for the resolution of inflammation?**
    A) Increased leukocyte migration
    B) Apoptosis of immune cells and removal of cellular debris
    C) Ongoing release of inflammatory mediators
    D) Sustained vascular permeability
85. **In the context of inflammation, what does the term "pavementing" refer to?**
    A) The formation of a fibrous scar tissue
    B) The adherence of leukocytes to the endothelium of blood vessels
    C) The release of cytokines into circulation
    D) The engulfing of pathogens by macrophages
86. **Which of the following best describes the role of the complement system in inflammation?**
    A) It primarily acts to repair tissue damage.
    B) It enhances phagocytosis and promotes inflammation through various pathways.
    C) It prevents blood flow to the affected area.
    D) It directly destroys pathogens without any immune modulation.
87. **What consequence might arise from an overactive inflammatory response?**
    A) Enhanced immune function and quicker recovery
    B) Damage to host tissues and development of chronic inflammatory diseases
    C) Increased efficiency of tissue repair
    D) Complete resolution of inflammation without complications
88. **Which feature is characteristic of acute inflammation but not of chronic inflammation?**
    A) Presence of neutrophils
    B) Ongoing tissue damage
    C) Fibroblast activity
    D) Insidious onset
89. **How do dendritic cells contribute to the inflammatory response?**
    A) They are the primary effector cells in phagocytosis.
    B) They present antigens to T cells and activate the adaptive immune response.
    C) They produce antibodies directly.
    D) They only function in tissue repair and not in inflammation.
90. **What is a potential consequence of misdirected inflammation in autoimmune diseases?**
    A) Enhanced protection against pathogens
    B) Uncontrolled tissue repair
    C) Damage to healthy tissues, leading to organ dysfunction
    D) Immediate resolution of inflammation

Answers

81. A
82. B

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

91. **What is the role of mast cells in the inflammatory response?**
    A) They directly kill pathogens through phagocytosis.
    B) They release histamine and other mediators that promote vasodilation and increase permeability.
    C) They produce antibodies against the pathogens.
    D) They assist in the formation of scar tissue.
92. **Which of the following best describes the "five Rs" of the inflammatory response?**
    A) Recognition, regulation, recruitment, resolution, repair
    B) Recognition, removal, repair, regulation, resolution
    C) Recognition, recruitment, removal, regulation, resolution
    D) Response, recruitment, recovery, regulation, removal
93. **In chronic inflammation, which cell types are primarily involved in sustaining the inflammatory process?**
    A) Neutrophils and eosinophils
    B) Lymphocytes, plasma cells, and macrophages
    C) Red blood cells and platelets
    D) Basophils and mast cells
94. **What is the primary mechanism by which macrophages eliminate pathogens?**
    A) Secretion of antibodies
    B) Phagocytosis
    C) Release of histamines
    D) Activation of T lymphocytes
95. **How does the inflammatory response contribute to the cardinal sign of "loss of function"?**
    A) By promoting increased activity in the affected area
    B) By damaging tissues and affecting normal physiological processes
    C) By enhancing blood flow to the region
    D) By encouraging complete tissue repair
96. **What is the potential risk associated with chronic inflammation in the context of diseases such as atherosclerosis?**
    A) Rapid recovery of tissue function
    B) Stabilization of plaque and prevention of heart disease
    C) Progression to severe tissue damage and organ failure
    D) Enhanced immune response to pathogens
97. **Which type of inflammation is characterized by a long-lasting immune response that can lead to tissue fibrosis?**
    A) Acute inflammation
    B) Chronic inflammation

C) Exudative inflammation
D) Localized inflammation

98. **What role do pattern recognition receptors (PRRs) play in the inflammatory response?**
A) They are involved in tissue repair.
B) They recognize pathogen-associated molecular patterns (PAMPs) and damage-associated molecular patterns (DAMPs).
C) They solely initiate the repair process.
D) They inhibit the activity of immune cells.
99. **Which of the following statements is true regarding the repair process after inflammation?**
A) It only involves the regeneration of tissue without any scarring.
B) It may lead to fibrosis if regeneration is not possible.
C) Repair is always quicker than the inflammatory response itself.
D) The repair process does not involve immune cells.
100. **What is the primary cause of the symptoms of redness and heat during inflammation?**
A) Increased production of immune cells
B) Vasodilation and increased blood flow to the affected area
C) The release of cytokines
D) The presence of pathogens in the tissues

Answers

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

101. **What is the significance of Toll-like receptors (TLRs) in the inflammatory response?**
A) They exclusively regulate blood flow during inflammation.
B) They identify pathogens and activate immune responses.
C) They only function in the repair of damaged tissues.
D) They suppress the activity of inflammatory mediators.
102. **In what way does excessive inflammation differ from a normal inflammatory response?**
A) It involves a greater number of neutrophils.
B) It leads to uncontrolled tissue damage and chronic disease.
C) It results in quicker tissue repair.
D) It does not involve the recruitment of immune cells.
103. **Which of the following describes the primary function of cytokines in inflammation?**
A) They directly destroy pathogens.

B) They modulate the inflammatory response and recruit immune cells.
C) They promote vasoconstriction in inflamed tissues.
D) They facilitate the repair of damaged tissues without inflammation.

104. **How does the presence of urate crystals in joints contribute to inflammation?**
A) By stimulating vasodilation and increasing blood flow
B) By triggering a specific immune response and causing pain
C) By directly repairing damaged tissue
D) By inhibiting the activity of macrophages

105. **What defines the "vascular phase" of acute inflammation?**
A) The proliferation of fibroblasts and extracellular matrix production
B) The dilation of blood vessels and increased permeability
C) The infiltration of lymphocytes and plasma cells
D) The removal of cellular debris and pathogens

106. **What is the potential outcome of an unchecked inflammatory response?**
A) Complete healing of the tissue
B) Transition to a chronic inflammatory state
C) Immediate recovery of function
D) Reduced risk of infection

107. **Which process is primarily responsible for the migration of leukocytes from the bloodstream to the site of inflammation?**
A) Diapedesis
B) Phagocytosis
C) Hemostasis
D) Chemotaxis

108. **In chronic inflammation, what role do lymphocytes play compared to neutrophils?**
A) Lymphocytes are more effective at phagocytosis than neutrophils.
B) Lymphocytes primarily facilitate tissue repair, while neutrophils focus on pathogen destruction.
C) Lymphocytes mediate adaptive immune responses, contributing to prolonged inflammation.
D) Lymphocytes do not participate in chronic inflammation.

109. **What impact does inflammation have on metabolic processes within tissues?**
A) It reduces metabolic activity to conserve energy.
B) It increases metabolic activity to support immune functions and repair processes.
C) It has no effect on metabolic processes.
D) It exclusively decreases oxygen consumption in inflamed tissues.

110. **What is the primary risk associated with autoimmune diseases in the context of inflammation?**
A) Decreased sensitivity to infections
B) Misguided immune responses targeting healthy tissues
C) Accelerated wound healing
D) Complete elimination of inflammation

Answers

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

111. **All of the following are true regarding the inflammatory response except:**
A) It is essential for tissue repair.
B) It can lead to chronic diseases if uncontrolled.
C) It only occurs in response to infections.
D) It involves the recruitment of immune cells to the site of injury.

112. **All of the following are characteristics of acute inflammation except:**
A) Rapid onset of symptoms.
B) Predominance of neutrophils.
C) Slow and insidious development.
D) Clear local signs such as redness and swelling.

113. **All of the following describe the role of cytokines in inflammation except:**
A) They act as signaling molecules to recruit immune cells.
B) They can cause systemic effects such as fever.
C) They directly kill pathogens.
D) They modulate the intensity of the inflammatory response.

114. **All of the following statements about chronic inflammation are true except:**
A) It often involves lymphocytes and macrophages.
B) It is characterized by a prolonged inflammatory response.
C) It is typically associated with immediate tissue repair.
D) It can result in fibrosis and tissue damage.

115. **All of the following contribute to the cardinal signs of inflammation except:**
A) Increased blood flow leading to heat.
B) Accumulation of fluid causing swelling.
C) Vasodilation resulting in redness.
D) Decreased metabolic activity in the affected tissues.

116. **All of the following are mechanisms by which leukocytes eliminate pathogens except:**
A) Phagocytosis.
B) Antibody production.
C) Cytokine release to recruit more immune cells.
D) Increased vascular permeability.

117. **All of the following factors can trigger inflammation except:**
A) Infections by bacteria or viruses.
B) Physical injuries like cuts and burns.

C) Aged or damaged tissues.
D) Immune reactions such as allergies.

118. **All of the following are features of the reparative process in inflammation except:**
A) Recruitment of fibroblasts.
B) Formation of granulation tissue.
C) Replacement of lost tissue with scar tissue if regeneration is not possible.
D) Permanent destruction of the affected area without recovery.

119. **All of the following statements about the complement system are correct except:**
A) It enhances the ability of antibodies to clear pathogens.
B) It plays a role in both the innate and adaptive immune responses.
C) It is exclusively involved in tissue repair processes.
D) It promotes inflammation and helps recruit immune cells.

120. **All of the following effects can result from excessive inflammation except:**
A) Tissue damage to healthy organs.
B) Enhanced pathogen clearance.
C) Development of chronic inflammatory diseases.
D) Autoimmune reactions against the body's own tissues.

Answers

111. C
112. C
113. C
114. C
115. D
116. D
117. C
118. D
119. C
120. B

121. **All of the following are components of the acute inflammatory response except:**
A) Increased blood flow to the injury site.
B) Activation of immune cells such as macrophages.
C) Development of scar tissue before the resolution of inflammation.
D) Release of chemical mediators like histamines.

122. **All of the following describe chronic inflammation except:**
A) It typically occurs after an acute inflammatory response.
B) It is associated with a persistent immune response.
C) It features a rapid onset with immediate symptoms.
D) It can lead to tissue remodeling and fibrosis.

123. **All of the following are effects of cytokines during inflammation except:**
A) They enhance the permeability of blood vessels.
B) They recruit additional immune cells to the site of injury.

C) They solely promote the proliferation of fibroblasts.
D) They can induce systemic responses like fever.

124. **All of the following statements about neutrophils are true except:**
A) They are the first responders to sites of acute inflammation.
B) They have a longer lifespan compared to macrophages.
C) They primarily engage in phagocytosis of pathogens.
D) They release enzymes and reactive oxygen species to eliminate microbes.

125. **All of the following describe the role of macrophages in inflammation except:**
A) They present antigens to T cells to initiate adaptive immunity.
B) They produce cytokines that modulate the inflammatory response.
C) They primarily cause tissue damage without contributing to repair.
D) They participate in phagocytosis of debris and pathogens.

126. **All of the following can lead to misdirected inflammation except:**
A) Allergic reactions to environmental allergens.
B) Autoimmune diseases targeting the body's own tissues.
C) Viral infections that are effectively cleared.
D) Chronic inflammatory conditions like rheumatoid arthritis.

127. **All of the following mechanisms are involved in tissue repair after inflammation except:**
A) Formation of granulation tissue.
B) Recruitment of fibroblasts to synthesize collagen.
C) Increased apoptosis of all immune cells present.
D) Angiogenesis to supply nutrients to the healing tissue.

128. **All of the following represent cardinal signs of inflammation except:**
A) Heat.
B) Loss of function.
C) Increased heart rate.
D) Redness.

129. **All of the following effects can result from an inadequate inflammatory response except:**
A) Increased susceptibility to infections.
B) Enhanced tissue regeneration.
C) Poor wound healing.
D) Development of opportunistic infections.

130. **All of the following statements about inflammatory mediators are correct except:**
A) They include both cellular and plasma-derived components.
B) They are only produced by immune cells during infection.
C) They regulate various aspects of the inflammatory process.
D) They can act locally or systemically in the body.

Answers

121. C
122. C
123. C
124. B
125. C

126. C
127. C
128. C
129. B
130. B

Case Questions

131. **A 45-year-old patient presents with acute pain and swelling in the right knee, along with redness and warmth. Blood tests reveal elevated white blood cell count and the presence of urate crystals.**
What is the most likely cause of the inflammation in this patient?
A) Bacterial infection
B) Autoimmune reaction
C) Gout due to urate crystal deposition
D) Chronic inflammatory disease

132. **A 30-year-old woman experiences prolonged respiratory symptoms, including wheezing and shortness of breath. A biopsy reveals the presence of lymphocytes and eosinophils in the bronchial tissue.**
Which type of inflammation is most likely occurring in this patient?
A) Acute inflammation
B) Chronic inflammation
C) Localized inflammation
D) Systemic inflammation

133. **A patient recovering from surgery shows signs of inflammation at the incision site, including swelling, heat, and pain. Despite treatment, the symptoms persist for several weeks, leading to concern about tissue healing.**
What is the most likely explanation for the prolonged inflammation?
A) Acute inflammatory response
B) Infection at the surgical site
C) Normal healing process
D) Chronic inflammation due to persistent irritation

134. **A 60-year-old male patient presents with persistent joint pain and stiffness. Laboratory tests reveal high levels of rheumatoid factor and synovial fluid analysis shows lymphocytes.**

Which of the following best describes the underlying mechanism of his condition?

A) Excessive neutrophil activity
B) Autoimmune response targeting joint tissues
C) Acute bacterial infection
D) Allergic reaction to environmental factors

135. **An athlete suffers from a sprained ankle and notices swelling and discoloration around the joint. Despite rest and ice application, the swelling persists for several days.**
What is the primary mechanism contributing to the swelling in this case?

A) Accumulation of red blood cells
B) Increased vascular permeability and fluid leakage
C) Decreased blood flow to the area
D) Activation of fibroblasts

136. **A 50-year-old woman with chronic fatigue and joint pain undergoes further evaluation. Her doctor suspects a chronic inflammatory condition.**
Which of the following tests would most likely support this diagnosis?

A) Complete blood count with a focus on neutrophils
B) Rheumatoid factor and inflammatory markers (e.g., ESR, CRP)
C) Cultures for bacterial infections
D) Skin allergy tests

137. **A child is diagnosed with acute viral tonsillitis, presenting with sore throat, fever, and swollen tonsils.**
What is the primary purpose of the inflammatory response in this case?

A) To eliminate the viral infection and promote healing
B) To cause permanent tissue damage
C) To recruit additional pathogens to the site
D) To suppress the immune response

138. **A patient develops septic shock after a severe bacterial infection.**
Which of the following mechanisms is primarily responsible for the inflammation observed in septic shock?

A) Excessive cytokine release leading to systemic effects
B) Neutrophil apoptosis
C) Direct tissue damage from bacterial toxins
D) Lack of immune response

139. **A 35-year-old man with a history of allergies presents with acute bronchial asthma exacerbation.**
Which immune cells are most likely predominant in his airways during an acute attack?
A) Neutrophils
B) Eosinophils and mast cells
C) T lymphocytes
D) Macrophages

140. **A patient with chronic hepatitis exhibits symptoms of liver damage and fibrosis.**
What is the role of chronic inflammation in the progression of his condition?
A) It promotes tissue regeneration.
B) It leads to continuous damage and scarring of liver tissue.
C) It resolves without long-term effects.
D) It enhances the body's defense against infections.

Answers

131. C
132. B
133. D
134. B
135. B
136. B
137. A
138. A
139. B
140. B

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