



مقدم من فريق أفق الطبي



Q1- Circle the most correct answer.

(20marks)

1-Which of the following statements is true about abscess:

- A. It is most commonly caused by streptococcal infection.
- B. Wall of abscess is characterized by numerous lymphocytes, plasma cells and giant cells.
- ☒ C. Lung abscess may lead to gangrene.
- D. Brain abscess is precancerous.
- E. All of above.

2-While in a home improvement center warehouse buying paint, a 35-year-old man hears 'Look out below!' and is then struck on the leg by a falling pallet rack, which strikes him on his left leg in the region of his thigh. The skin is not broken. Within 2 days there is a 5 x 7 cm purple colour to the site of injury. Which of the following substances has most likely accumulated at the site of injury to produce a yellow-brown colour at the site of injury 16 days later?

- A. Lipofuscin
- B. Bilirubin
- C. Melanin
- ☒ D. Hemosiderin
- E. Glycogen

3-A 54-year-old man with a chronic cough has a squamous cell carcinoma diagnosed in his right lung. While performing a pneumonectomy, the thoracic surgeon notes that the hilar lymph nodes are small, 0.5 to 1.0 cm in size, and jet black in colour throughout. Which of the following is the most likely cause for this appearance to the hilar nodes?

- ☒ A. Anthracotic pigment
- B. Lipochrome deposits
- C. Melanin accumulation
- D. Hemosiderosis
- E. Metastatic carcinoma

9-A 71-year-old woman had the loss of consciousness that persisted for over an hour. When she becomes arousable, she cannot speak nor move her right arm. A cerebral angiogram revealed an occlusion to her left middle cerebral artery. Months later, a computed tomographic (CT) scan shows a large 5 cm cystic area in her left parietal lobe cortex. This CT finding is most likely the consequence of resolution from which of the following cellular events?

- A. Liquefactive necrosis
- B. Atrophy
- C. Coagulative necrosis
- D. Caseous necrosis
- E. Apoptosis

10-A 19-year-old woman gives birth to her first child. She begins breast feeding the infant. She continues breast feeding for almost a year with no difficulties and no complications. Which of the following cellular processes that began in the breast during pregnancy allowed her to nurse the infant for this period of time?

- A. Stromal hypertrophy
- B. Epithelial dysplasia
- C. Steatocyte atrophy
- D. Ductal epithelial metaplasia
- E. Lobular hyperplasia

11-An 84-year-old man dies from complications of Alzheimer disease. At autopsy, his heart is small (250 gm) and dark brown on sectioning. Microscopically, there is light brown perinuclear pigment with H&E staining of the cardiac muscle fibers. Which of the following substances is most likely increased in the myocardial fibers to produce this appearance of his heart?

- A. Hemosiderin from iron overload
- B. Lipochrome from 'wear and tear'
- C. Glycogen from a storage disease
- D. Cholesterol from atherosclerosis
- E. Calcium deposition following necrosis

12-A 40-year-old woman had laparoscopic surgery 3 months ago. Now she has a small 0.5 cm nodule beneath the skin at the incision site that was sutured. Which of the following cell types is most likely to be most characteristic of the inflammatory response in this situation?

- A. Mast cell
- B. Eosinophil
- C. Giant cell
- D. Neutrophil
- E. Plasma cell

13-A 6-year-old child has a history of recurrent infections with pyogenic bacteria, including *Staphylococcus aureus* and *Streptococcus pneumoniae*. The infections are accompanied by a neutrophilic leukocytosis. Microscopic examination of a biopsy specimen obtained from an area of soft tissue necrosis shows microbial organisms, but very few neutrophils. An analysis of neutrophil function shows a defect in rolling. This child's increased susceptibility to infection is most likely caused by a defect in which of the following molecules?

- A. Selectins
- B. Integrins
- C. Leukotriene B
- D. Complement C3b
- E. NADPH oxidase

14-A 70-year-old woman has had worsening shortness of breath for the past week. On physical examination, her temperature is 38.3°C. On percussion, there is dullness over the left lung fields. Thoracentesis yields 800 mL of cloudy yellow fluid from the left pleural cavity. Analysis of the fluid reveals a WBC count of 2500/mm³ with 98% neutrophils and 2% lymphocytes. A Gram stain of the fluid shows gram-positive cocci in clusters. Which of the following terms best describes the process occurring in the left pleural cavity?

- A. Abscess
- B. Chronic inflammation
- C. Fibrinous inflammation
- D. Purulent inflammatory exudate
- E. Serous effusion

15-An experiment involves factors controlling wound healing. Skin ulcerations are observed, and the factors involved in the healing process are analyzed. Which of the following factors is most likely to be effective in promoting angiogenesis?

- A. Platelet-derived growth factor
- B. Epidermal growth factor
- C. Basic fibroblast and macrophages growth factor
- D. Endostatin
- E. Interleukin-1

16-Which of the following granulomatous lesions may be associated with marked necrosis:

- A. Silicosis.
- B. Foreign body granuloma
- C. Sarcoidosis.
- D. Tuberculosis.
- E. Crohn's disease.

17-A 15-year-old girl has had episodes of sneezing with watery eyes and runny nose for the past 2 weeks. On physical examination she has red, swollen nasal mucosal surfaces. She has had similar episodes each Spring and Summer when the amount of pollen in the air is high. Her symptoms are most likely to be mediated by the release of which of the following chemical mediators?

- A. Complement C3b
- B. Platelet activating factor (PAF)
- C. Tumor necrosis factor (TNF)
- ☒ D. Histamine
- E. Immunoglobulin G

18-Hyperplasia is characterized by all of the following except:

- A. It is always accompanied by dysplasia.
- B. It may be caused by hormonal abnormalities.
- C. It is sometimes precancerous.
- D. Growth factors may be involved in the mechanism of hyperplasia.
- E. It may affect the bone marrow following hemorrhage.

19-The following are features of apoptosis except:

- A. It is always caused by irritants such as anoxia, bacterial infection and alcohol.
- B. It is characterized by fragmentation of nuclear DNA.
- C. It is characterized by formation of cell membrane blebs.
- D. It is characterized by transformation of the affected cells into apoptotic bodies.
- E. Phagocytosis of the apoptotic bodies is common.

20-Which of the following is true about fibrin:

- A. Deposition of fibrin in inflammatory conditions is known as fibrosis.
- B. Fibrin plays important functions in inflammation and repair.
- C. Cellulitis is characterized by excess fibrin deposition.
- D. All of the above.
- E. None of the above.

QII-Put true or false in front of each statement and Give the reasons:(5marks)

- 1-Multiple myeloma can lead to systemic amyloidosis ()
- 2-Hydropid degeneration is characterized by cell dehydration ()
- 3-Fibrin is a protein formed by fibroblasts during the process of fibrosis ()
- 4-Granulomas formed of epithelioid cells and giant cells are diagnostic of T.B ()
- 5-Dystrophic calcification affect healthy tissues ()

QIII-Complete the following sentences: (5marks)

- 1- Four examples of bacterial granuloma.....
.....&.....
- 2- Amyloid can be stained by *congo red* which when examined under polarized light gives.....*apple green*
- 3- The major cytokines in acute inflammation
- 4- In intrinsic pathway of apoptosis, the leakage protein called
- 5- Four examples of adaptive types of hypertrophy