

Pathology F-15-129

Arslan Asghar
BCLM Umeda

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14) A 70-year-old man with hypercalcemia died suddenly. At autopsy, microscopic examination showed noncrystalline amorphous deposits of calcium salts in gastric mucosa, renal interstitium, and alveolar walls of lungs. Which of the following underlying conditions would most likely explain these findings?

- a. Chronic active hepatitis
- b. Diffuse parathyroid hyperplasia
- c. Disseminated tuberculosis
- d. Generalized atherosclerosis
- e. Normal aging process

15) A 45-year-old man developed right lower quadrant abdominal pain over the last one day. Physical examination revealed rebound tenderness over the right lower quadrant. Appendicectomy was performed and the appendix was swollen, erythematous, and partly covered by a yellowish exudate. It was removed, and microscopic section showed infiltration with numerous neutrophils. The pain experienced by this patient was predominantly the result of the formation of which of the following chemical mediators?

- a. Complement C3b and IgG
- b. Histamine and serotonin
- c. Prostaglandin and bradykinin
- d. Interleukin-1 and tumor necrosis factor
- e. Leukotriene and HPETE

17) A 50-year-old man had chronic cough with fever and weight loss for the past 2 months. A chest radiograph reveals multiple nodules from 1 to 4 cm in size, some of which demonstrate cavitation in the upper lobes. A sputum sample reveals the presence of acid fast bacilli. Which of the following cells is the most important in the development of his lung lesions?

- a. Fibroblast
- b. Platelet
- c. Neutrophil
- d. Mast cell
- e. None of the above

18) A 20-year-old man has experienced painful urination for 4 days. Urethritis is suspected. Numerous neutrophils are present in a smear of the exudate from the urethra. The diapedesis of neutrophils is the consequence of which of the following chemical mediators?

- a. Histamine
- b. Prostaglandin
- c. Hageman factor
- d. Bradykinin
- e. Complement C5a

19) An episode of marked chest pain lasting 4 hours brings a 51-year-old man to the emergency room. He is found to have an elevated serum creatine kinase. An angiogram reveals a complete blockage of the left circumflex artery. Which of the following substances is most likely to be elaborated around the region of tissue damage in 3 days as an initial response to promote healing?

- a. Histamine
- b. Immunoglobulin G
- c. Complement C3b
- d. Leukotriene B4
- e. Vascular endothelial growth factor

20) A 29-year-old man had a sharp cut on his hand. Over the next 3 days the area around the wound becomes red, swollen and tender. Neutrophils migrate into the injured tissue. Expression of which of the following substances on endothelial cells is most instrumental in promoting this inflammatory reaction?

- a. Interferon gamma
- b. Hageman factor
- c. Lysozyme
- d. E-selectin
- e. Prostacyclin

21) 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 mucosa. 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. Fibroblast growth factor

22) In an experiment, surgical wound sites are observed following suturing. An ingrowth is observed to occur within the first week. A substance elaborated by macrophages is site to stimulate this capillary proliferation. Which of the following substances is most function?

- a. Platelet-derived growth factor
- b. Phospholipase C-gamma
- c. Fibronectin

d. Fibroblast growth factor
e. Epidermal growth factor

23) A 56-year-old man has had increasing dyspnea for 6 years. He has no cough or fever. He was in dust for many years in his job. A chest x-ray now shows increased interstitial markings and paraseptal nodules. His pulmonary problems are most likely to be caused by which of the following inflammatory processes?

- a. Neutrophilic infiltration with release of leukotrienes
- b. Histamine release by mast cells

c. Foreign body giant cell formation

24) A young man got a lacerated wound on his left arm, which was stitched. A week later the stitches were removed. Healing at the wound site continued, but the site became disfigured by prominent raised nodular scar in the next 2 months. Which of the following best describes the process?

- a. Organization
- b. Dehiscence
- c. Resolution

d. Keloid formation
e. Secondary Union

25) A 40-year-old man incurs a burn injury to his hands and arms while working on a propane furnace. Over the next 3 weeks, the burnt skin heals without the need for skin grafting. Which of the following is the most critical factor in determining whether the skin in the region of the burn will regenerate?

- a. Good cardiac output with tissue perfusion
- b. Persistence of skin appendages

c. Maintenance of underlying connective tissue
d. Diminished edema and erythema
e. Granulation tissue formation

26) A 25 years old female is suffering from chronic bronchial asthma. She is on steroids for her symptom. Which of the following is MOST responsible for the anti-inflammatory activity of corticosteroids?

- a. Inhibition of Phospholipase A2
- b. Destruction of eosinophils
- c. Inhibition of cyclooxygenase

27) Which of the following is the most efficient killing mechanism of neutrophils?

- a. Collagenase
- b. Reactive oxygen species
- c. Protease

d. Myeloperoxidase
e. Defensins

28) A 55 years old man suffered from myocardial infarction and worsening congestive heart failure. There is dyspnoea and orthopnea for the last 2 months. Pleural fluid is aspirated. Which of the following characteristics of this fluid would most likely indicate that it is a transudate?

- a. Cloudy appearance
- b. Low protein content
- c. Increased lymphocytes

d. Presence of fibrin
e. Large size of effusion

29) The feature that differentiates primary from secondary healing is:

- a. A Inflammatory reaction
- b. Granulation tissue
- c. Wound contracture

d. Angiogenesis
e. Fibroblast

Abote

F-15-1

man with hypercalcemia died of chronic amorphous deposits of calcium salts which of the following underlying condition?

a. Diffuse active hepatitis
b. Disseminated tuberculosis
c. 77-year-old man developed right lower quadrant abdominal pain and the appendix was swollen, erythematous, and experienced by this patient was predominantly the chemical mediators?
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b. ...

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Bela Ornel

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- b. Histamine release by mast cells
- c. Foreign body giant cell formation

- d. Plasma cell production of immunoglobulin
- e. Release of growth factors by macrophages

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- c. Inhibition of cyclooxygenase

- d. Increased leukocyte adhesion to endothelial cells
- e. Inhibition of lipoxygenase

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Young man had a laceration in a road side tissue formation. How much time is required for tissue formation?
a. 15 days
 b. 3-5 days
c. 24 hours

31) A hypertensive patient had an episode and was put on a drug. Which of the following is inhibited by this drug?
 a. Cyclooxygenase

Fibroblast growth factor
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An ingrowth
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A young man had a laceration in a road side accident. The wound was fleshy pink showing granulation tissue formation. How much time is required for this process:

- a. 15 days
- b. 3-5 days
- c. 24 hours
- d. 1 month
- e. 3 month

31) A hypertensive patient had severe chest pain due to myocardial ischemia. He recovered from the initial episode and was put on Aspirin to inhibit platelet aggregation. Which of the following pathways is inhibited by aspirin?

- a. Cyclo-oxygenase Pathway
- b. Lipo-oxygenase pathway
- c. Classic pathway
- d. Alternate pathway
- e. Lectin pathway

32) A ten year old child accidentally touches a pot of boiling water. Within few hours there is marked erythema of the skin of the fingers and small blisters appear on the finger pads. Which of the following terms best describes the process?

- a. Fibrinous inflammation
- b. Purulent inflammation
- c. Serous inflammation
- d. Ulceration
- e. Granulomatous inflammation

33) Microorganisms are cellular structures. They can grow and reproduce. Which of the following mechanism is mostly used by Bacteria to divide?

- a. mitosis
- b. Meiosis
- c. Both meiosis & mitosis
- d. Binary fission
- e. Binary fission & mitosis

34) In bacterial growth curve, x-axis stands for time and y-axis for logarithmic bacterial count. In this growth curve which phase of growth shows no net increase in bacterial population due to low metabolic activities?

- a. Lag phase
- b. Log phase
- c. Stationary phase
- d. Death phase
- e. Compensatory phase

35) Certain bacterial infectious diseases are diagnosed by detecting antibodies in patient's serum. Which of the following bacterial cell component is highly antigenic in nature?

- a. Capsule
- b. Flagellae
- c. Endospore
- d. Plasmid
- e. Peptidoglycan

36) A gram positive non motile prokaryote isolated from the wound swab of a 5 year old child, which of the following characteristic differentiate it from eukaryotes?

- a. Prokaryotes do not have membrane-bound organelles.
- b. The nucleoid is a region where the circular chromosome (DNA) is located

- c. Size of cell typically 0.2-2.0 μm in diameter
- d. Ribosomes larger size (80s); smaller size (70s) in organelles
- e. Cell division by mitosis.

37) Alcohol is denaturant that rapidly kills bacteria when applied in aqueous solution in

- a. 10-30%
- b. 30-50%
- c. 50-60%
- d. 70-75%
- e. 95-100%

38) In the fall of 2001, Gram positive anthrax bacillus survived even disinfection of the wards, possible due to the formation of:

- a. Keratin coat of endospore
- b. Disulfide bonds
- c. Lipid A
- d. Capsule
- e. Peptidoglycan

39) A staff nurse collects all contaminated sheets, gloves, masks and caps from operation theater appendectomy. She sterilizes all objects to reuse them. Which technique is most appropriate to get rid bacteria and spores:

- a. Boiling them at 100 degrees C
- b. Tyndalization
- c. Inspissation
- d. Autoclaving
- e. Pasteurization

40) Pathogenesis is a process of disease production which includes the mechanisms depending upon certain sequence of events i.e. source of infection, transmission of microorganisms, survival and multiplication ability to avoid host defense mechanisms and damage to the host. Which of the following options is most appropriate to enhance the virulence of microorganism?

- a. Absence of capsule & surface proteins
- b. Damage Fimbria or pili
- c. Enhanced phagocytosis
- d. Toxin production
- e. Release of lysogenic enzymes
- a. Plasmid and chromosomal resistance
- b. Increase in probiotics

41) Sterilization by moist heat destroys the microbes by:

- a. Dehydration of cells
- b. Coagulation of cellular proteins
- c. Denaturation of cellular DNA
- d. Inactivation of cell membranes
- e. Modification of golgi complex.

42) A young over enthusiastic science student took a culture of his healthy skin from the dorsum of his hand. He was informed after 24 hours that it has growth of Staphylococcus epidermidis, and diphtheroids. He was worried and went to his physician and was told not to worry, because the growth was:

- a. Normal human skin flora
- b. Transient skin flora
- c. Pathogenic skin flora
- d. Normal flora of the colon
- e. Saprophyte

43) A 34-year-old woman who works in a bird farm presents with a history of fever, cough and on X-ray chest has consolidation in right lower lobe. Her sputum is sent for laboratory analysis. The likely means by which the patient acquired her infection is:

- a. Sexual activity
- b. Ingesting the microorganisms via food
- c. Breathing aerosolized droplets containing the microorganism

d. Vertical transmission
 A healthy person rarely has
 contact with thousands of bacter
 NOT correct regarding normal flora?
 a. Staphylococci are the m
 b. Escherichia coli is the m
 c. Bacteroides fragilis is main
 d. Lactobacilli are the m
 e. Viridans streptococ
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in organelles
in aqueous solution in
70-75%
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d. Vertical transmission

e. Through skin contact

A healthy person rarely suffers from bacterial infection in spite of daily inhaling, ingesting and coming in contact with thousands of bacteria. He is protected by normal flora. Which of the following statements is NOT correct regarding normal flora?

- a. Staphylococci are the most common organisms of skin.
- b. Escherichia coli is the permanent resident of respiratory tract.
- c. Bacteroides fragilis is mainly found in colon.
- d. Lactobacilli are most common organisms of female genital tract.
- e. Viridans streptococci are found in upper respiratory tract.

45) Bacteria can be cultivated on artificial media which provide nutritive ingredients to them. In addition oxygen tension and pH help for better growth of bacterial colonies. Which of the following media is having anaerobic characteristics?

- a. Blood agar
- b. MacConkey's agar
- c. Chocolate agar
- d. Nutrient agar
- e. Cooked meat medium

46) For sterilization of heat sensitive surgical instruments and sutures, which of the following sterilization method is most appropriate?

- a) Biphenol
- b) Formalin
- c) Ethylene oxide
- d) Acriflavin
- e) Gentian violet

47- The structure that is found in gram negative bacteria but not in gram positive bacteria is a

- a. Capsule
- b. Cell wall
- c. Cytoplasmic membrane
- d. Endospore
- e. Outer membrane

48- A diptheroid gram-positive rod may develop into a pathogenic C. diphtheriae by means of a bacteriophage infection. Transfer of a donor chromosome fragment by a temperate bacterial virus is defined as which one of the following?

- a. Competence
- b. Conjugation
- c. Recombination
- d. Transduction
- e. Transformation

49) Virulence of bacteria is related to

- a. Toxin and enzyme production
- b. Resistance of the patient
- c. Number of bacteria
- d. Age of the patient
- e. Portal of entry

50- One of the bacteria isolated from the foul-smelling exudates taken from an abscess is missing superoxide dismutase, catalase, and a peroxidase. Which of the following statements best describes this microorganism?

- a. Aminoglycoside antibiotics will be effective against this bacterium
- b. This bacterium is a facultative aerobe
- c. Bacterium is an anaerobe *anaerobic*
- d. This bacterium is more virulent than one containing the three enzymes
- e. This bacterium will survive in an O₂ environment