

3RD YR MBBS Paper-I (CVS AND RESPIRATORY SYSTEM 42 MCQS) PATHOLOGY SECTION ON 10 OCT 2023

1. A 41-year-old female presents with recurrent severe headaches and increasing visual problems. Physical examination reveals her blood pressure to be 220/150. Her symptoms are most likely to be associated with:

- a. Medial calcific sclerosis
- b. Arteriosclerosis obliterans
- c. Hyperplastic arteriolosclerosis**
- d. Hyaline arteriolosclerosis
- e. Thromboangiitis obliterans

2. A 30-year-old male smoker presents with gangrene of his extremities. Which one of the following histologic findings from a biopsy of the blood vessels supplying this area would be most suggestive of the diagnosis of Buerger's disease?

- a. Granulomatous inflammation with giant cells
- b. Fibrinoid necrosis with overlying thrombosis
- c. Focal aneurysmal dilation
- d. Fragmentation of neutrophils
- e. Thrombosis with microabscesses**

3. A factor that stimulates the proliferation of smooth-muscle cells and also relates to the pathogenesis of atherosclerosis is

- a. Platelet-derived growth factor**
- b. Transforming growth factor β
- c. Interleukin 1
- d. Interferon α
- e. Tumor necrosis factor

4. A 73-year-old healthy woman who exercises regularly falls down the stairs and injures her right hip. There is no fracture but the radiograph reveals calcification of the small muscular arteries lateral to her uterus. What is the probable vascular lesion which accounts for this calcification?

- a. Ulcerative atherosclerosis
- b. Monckeberg medial calcific sclerosis**
- c. Lymphatic obstruction
- d. Arteriolosclerosis
- e. Dystrophic calcification

5. A 48-year-old man with diabetes presents with a history of progressive pain in both legs for several years. The pain is severe after walking two blocks or climbing one flight of stairs. Blood pressure is 145/90 mm Hg. Laboratory studies show a serum cholesterol of 320 mg/dl. He neither smokes nor drinks. Bruits are evident upon auscultation of both femoral arteries. The pathogenesis of intermittent claudication in this patient is most closely associated with which of the following risk factors?

- a. Hyperglycemia
- b. Hyperlipidemia**
- c. Obesity
- d. Sedentary lifestyle
- e. Systemic hypertension

6. Which of the following is not a cardinal features of Tetralogy of Fallot ?

- a. VSD
- b. Subpulmonic stenosis
- c. Patent foramen ovale**
- d. Overriding of aorta
- e. RV hypertrophy

7. A 67-year-old man presents with sudden left leg pain, absence of pulses, and a cold limb. His past medical history is significant for coronary artery disease and a small aortic aneurysm. Which of the following is most likely responsible for development of a cold limb in this patient?

- a. Acute myocardial infarction
- b. Arterial thromboembolism**
- c. Cardiogenic shock
- d. Deep venous thrombosis
- e. Ruptured aortic aneurysm

8. The most suitable diagnostic marker of Wegeners Granulomatosis is:

- a. RA factor
- b. c-ANCA**
- c. p-ANCA
- d. ANA
- e. MPO-ANCA

9. A 20 years old athlete complaint of gradually increasing shortness of breath . His X- ray revealed large globular heart and echocardiogram revealed markedly decreased ejection fraction of 30% and dilatation of all four chambers of heart. His coronary angiogram did not revealed any obstruction. He is most likely suffering from:

- a. **Dilated cardiomyopathy**
- b. Restrictive cardiomyopathy
- c. Hypertrophic cardiomyopathy
- d. X-linked cardiomyopathy
- e. Arrhythmogenic cardiomyopathy

10. Major Risk factor for Aortic dissection is:

- a. Atherosclerosis
- b. **Hypertension**
- c. Marfan syndrome
- d. Ehlers Danlos syndrome
- e. Vit C deficiency

11. A 10 yrs old girl develops sub cutaneous nodules over skin of her arms and torso 3 weeks after acute pharyngitis. She manifests choreiform movements and complains of pain in hip and knee joints. On auscultation, a friction rub is detected. Which of the following tests will be helpful in diagnosis of disease?

- a. **Antistreptolysin O antibody titer**
- b. Creatinine level
- c. Troponin I
- d. Antinuclear antibody titer
- e. RA factor

12. Vegetations on heart valves can be formed in all of these conditions except:

- a. Rheumatic heart disease
- b. Infective endocarditis
- c. Systemic lupus erythematosus
- d. **Crohn disease**
- e. Nonbacterial thrombotic endocarditis

13. A 72-year-old man presents with a sudden onset of left flank pain. In the emergency room, the patient is hypotensive. A pulsatile mass is palpated in the abdomen. Which of the following is MOST responsible

for the pathogenesis of this patient's condition?

- a. **Atherosclerosis**
- b. A defect in fibrillin
- c. A defect in collagen
- d. Long-standing hypertension
- e. Immune destruction of elastic tissue

14. A 65-year-old man on the 5th day of hospitalization for an acute anterior myocardial infarction has recurrence of chest pain and an increase in both CK-MB and troponin-I. The patient MOST LIKELY has:

- a. Papillary muscle dysfunction
- b. A right ventricular infarct
- c. A ventricular aneurysm
- d. A myocardial rupture
- e. **Reinfarction**

15. Which one of the listed disorders is the best example of an abnormality that produces systolic dysfunction primarily because of increased afterload?

- a. Anemia
- b. Aortic regurgitation
- c. Mitral regurgitation
- d. Mitral stenosis
- e. **Systemic hypertension**

16. A 23-year-old woman develops the sudden onset of congestive heart failure. Her condition rapidly deteriorates and she dies in heart failure. At autopsy, patchy interstitial infiltrates composed mainly of lymphocytes are found, some of which surround individual myocytes. What is the most likely cause of this patient's heart failure?

- a. Autoimmune reaction (to group A β -hemolytic streptococci)
- b. Bacterial myocarditis (due to *S. aureus* infection)
- c. Hypersensitivity myocarditis (due to an allergic reaction)
- d. Nutritional deficiency (due to thiamine deficiency)
- e. **Viral myocarditis (due to coxsackievirus infection)**

17. Which one of the following is the most common congenital heart defect to cause an initial left-to-right shunt?

- a. Tetralogy of Fallot

- b. Coarctation of the aorta
- c. Ventricular septal defect**
- d. Atrial septal defect
- e. Patent ductus arteriosus

18. A 30 year old man with a viral myocarditis who develops hypotension, neck vein distention, a drop in blood pressure on inspiration, and muffled heart sounds most likely has:

- a. Hypertrophic cardiomyopathy
- b. Constrictive pericarditis
- c. Hypovolemic shock
- d. A pericardial effusion**
- e. A dissecting aortic aneurysm

19. A 70 year old man with diminished pulses and a history of angina and syncope with exercise has an ejection type murmur radiating into the carotid arteries. Likely cause is:

- a. Aortic regurgitation
- b. Aortic stenosis**
- c. Mitral stenosis
- d. Mitral regurgitation
- e. Tricuspid regurgitation

20. A 7 year old boy presents with a low-grade fever, arthralgias, colicky abdominal pain, and a palpable purpuric rash limited to the lower extremities. Laboratory studies reveal a guaiac-positive stool, a urinalysis with red blood cell (RBC) casts, hematuria, and mild proteinuria, and a CBC with a normal Hb, Hct, and platelet count. Which of the following is the most likely diagnosis?

- a. Systemic lupus erythematosus (SLE)
- b. Poststreptococcal glomerulonephritis
- c. Rocky Mountain spotted fever
- d. Henoch-Schonlein vasculitis**
- e. Idiopathic thrombocytopenia purpura (TTP)

21. After a hemicolectomy to remove a colon carcinoma, a 53-year-old man develops respiratory distress. He is intubated and receives mechanical ventilation with 100% oxygen. Three days later, his arterial oxygen saturation decreases. A chest radiograph shows increasing

opacification in all lung fields. A transbronchial lung biopsy specimen shows hyaline membranes lining distended alveolar ducts and sacs. Which of the following most likely represents the fundamental mechanism underlying these morphologic changes?

- a. Reduced production of surfactant by type II alveolar cells
- b. Disseminated intravascular coagulation
- c. Aspiration of oropharyngeal contents with bacteria
- d. Leukocyte-mediated injury to alveolar capillary endothelium**
- e. Release of fibrogenic cytokines by macrophages

22. One day after moving into a new apartment, a 25-year-old man experiences acute onset of fever, cough, dyspnea, headache, and malaise. The symptoms subside over several days when he visits a friend in another city. On the day of his return he visits the physician. There are no remarkable findings on physical examination. A chest radio graph also is unremarkable. Which of the following is most likely to produce these findings?

- a. Antigen-antibody complex formation**
- b. Attachment of antibodies to basement membrane
- c. Generation of prostaglandins
- d. Release of histamine
- e. Release of leukotrienes
- f. Toxic injury to type I pneumocytes

23. A 56-year-old male smoker has been coughing up thick yellow green material for about the last three years, on and off, but more frequently for at least half of the year. Physical examination reveals some ronchi, but no crackles. His fingernail beds are slightly blue, and a pulse oximeter reveals an oxygen saturation of 88%. He does not report having difficulty breathing. Of the following, what is the most likely diagnosis?

- a. Emphysema
- b. Chronic bronchitis**
- c. Lobar pneumonia
- d. Granulomatosis with polyangiitis
- e. Chronic eosinophilic pneumonia

24. A 63-year-old female went to his family physician with complaints of increasing difficulty with breathing. He says the symptoms started a few years ago but have progressed to the point where he has difficulty

breathing with even mild physical exertion. Pulmonary function tests reveal a normal FEV1/FVC ratio. Of the following, what is his most likely diagnosis?

- a. Centriacinar emphysema
- b. Panacinar emphysema
- c. Interstitial lung disease**
- d. Asthma
- e. Bronchiectasis

25. Histologic sections (routine H&E stain) of lung reveal the alveoli to be filled with pale, nongranular pink fluid. Neither leukocytes nor erythrocytes are present within this fluid. What is the most likely (i.e., most common) cause of this abnormality?

- a. Bacterial pneumonia
- b. Congestive heart failure**
- c. Lymphatic obstruction by tumor
- d. Pulmonary embolus
- e. Viral pneumonia

26. A 72-year-old retired shipyard worker received a chest x-ray as part of a routine medical work-up. The radiologist reported incidental findings suggestive of an occupational lung disease. Which of the following descriptions is most consistent with this patient's film?

- a. Enlarged hilar lymph nodes
- b. Fibrocalcific parietal pleural plaques on the diaphragm**
- c. Hyperinflated lungs with a loss of lung markings
- d. Nodular calcium lesions in the apex of the lung
- e. No specific radiographic findings

27. A 19-year-old female presents with urticaria that developed after she took aspirin for a headache. She has a history of chronic rhinitis, and physical examination reveals the presence of nasal polyps. This patient is at an increased risk of developing which one of the following pulmonary diseases following the ingestion of aspirin?

- a. Asthma**
- b. Chronic bronchitis
- c. Emphysema
- d. Interstitial fibrosis

e. Pulmonary hypertension

28. While recovering in bed 1 week after hysterectomy, a 42-year-old female develops acute shortness of breath with hemoptysis. Physical examination finds the patient to be afebrile with moderate respiratory distress, calf tenderness, and a widely split S2. What is the correct diagnosis?

- a. Atelectasis
- b. Bacterial pneumonia
- c. Pulmonary embolus**
- d. Pulmonary hypertension
- e. Viral pneumonia

29. A 25-year-old female presents with fever, malaise, headaches, and muscle pain (myalgia). A chest x-ray reveals bilateral infiltrates. The patient's blood test for cold agglutinins came positive. This patient's illness is most likely due to infection with

- a. Influenza A virus
- b. Mycoplasma pneumoniae**
- c. Streptococcus pneumoniae
- d. Pneumocystis pneumoniae
- e. Mycobacterium tuberculosis

30. In which of the following clinical scenarios involving patients with lung disease would you expect pulmonary function studies to exhibit decreased compliance, increased elasticity, and an increased FEV1/FVC ratio?

- a. Cystic fibrosis
- b. Alpha 1- antitrypsin deficiency
- c. COPD
- d. Bronchial asthma
- e. Sarcoidosis**

31. A 45-year old woman 24 hours post-cholecystectomy develops fever and dyspnea. Physical exam reveals decreased percussion, increased tactile fremitus, and decreased breath sounds in the right lower lobe.

The diaphragm is elevated and there is inspiratory lag on the right side. The patient MOST LIKELY has:

- a. **Atelectasis**
- b. A lung abscess
- c. Bronchopneumonia
- d. A pulmonary infarction
- e. A spontaneous pneumothorax

32. An afebrile 23-year-old man develops a sudden onset of left-sided, stabbing chest pain with dyspnea. Physical exam of the left chest reveals hyperresonance to percussion, deviation of the trachea to the left, elevation of the diaphragm, decreased tactile fremitus, and decreased breath sounds. The MOST LIKELY diagnosis is...

- a. Pleural effusion
- b. Bronchopneumonia
- c. **Spontaneous pneumothorax**
- d. Tension pneumothorax
- e. A pulmonary infarction

33. A newborn child develops dyspnea, tachypnea, intercostal muscle retractions, and cyanosis 4 hours after birth. The mother developed gestational diabetes mellitus and was in poor glycemic control throughout the pregnancy. A chest x-ray reveals a "ground glass" appearance in both lungs. The primary mechanism for this patient's respiratory problem is...

- a. Aspiration of amniotic fluid
- b. Group B streptococcus pneumonia
- c. Heart failure from congenital heart disease
- d. **Decreased production of surfactant**
- e. Chlamydia trachomatis pneumonia

34. Which of the following describes a pneumonia due to *Mycoplasma pneumoniae* rather than *Streptococcus pneumoniae*?

- a. High fever
- b. **Insidious onset**
- c. Productive cough
- d. Increased tactile fremitus

e. Neutrophilic leukocytosis

35. A 58-year-old smoker presents with weight loss and cough. Physical exam reveals a mild lid lag on the left and a pinpoint pupil, scattered rhonchi throughout all lung fields that clear with coughing, and an increased anteroposterior diameter. Based on these findings, you suspect the patient has:

- a. **A Pancoast tumor**
- b. A thoracic outlet syndrome
- c. The superior vena caval syndrome
- d. Obstructive lung disease without primary cancer
- e. Obstructive lung disease with metastatic cancer from another primary site

36. A 65 year old man with urinary retention secondary to prostatic hyperplasia, develops spiking fever, and tachypnea. Physical exam reveals intercostal muscle retractions and bilateral inspiratory crackles. A chest x-ray exhibits bilateral interstitial and alveolar infiltrates. ABGs demonstrate severe hypoxemia. You expect the blood culture reveals...

- a. Gram positive diplococci
- b. Gram negative diplococci
- c. Gram positive cocci
- d. **Gram negative rods**
- e. Gram positive rods

37. Chlamydia trachomatis and the respiratory syncytial virus are BOTH commonly associated with:

- a. **An interstitial type of pneumonia**
- b. Laryngotracheobronchitis (croup)
- c. The respiratory distress syndrome
- d. Typical community-acquired pneumonia
- e. Hospital-acquired (nosocomial) pneumonia

38. A 55-year-old non-smoking coal worker has arthritis and nodular lesions in the lungs. His PPD skin test is negative. You suspect the patient has:

- a. Systemic lupus erythematosus

- b. **Caplan's syndrome**
- c. Metastatic lung disease
- d. Primary lung cancer
- e. Miliary tuberculosis

39. In a 62 year old man who has been a roofer for 25 years and a smoker for 10 years, which of the following cancers would he be most likely prone to developing?

- a. Pleural mesothelioma
- b. **Primary lung cancer**
- c. Laryngeal carcinoma
- d. Oral cancer
- e. Pancreatic cancer

40. Which of the following is a hypersensitivity pneumonitis that primarily occurs in textile workers?

- a. Silo filler's disease
- b. Bagassosis
- c. Farmer's lung
- d. **Byssinosis**
- e. Sarcoidosis

41. A patient with alpha 1-antitrypsin deficiency is warned by his physician that his increasing dyspnea may be worsened by his continued cigarette smoking. Which of the following factors, released by both neutrophils and alveolar macrophages, is responsible for the patient's condition?

- a. Major Basic Protein
- b. Antibodies against alpha-3 segment of collagen IV
- c. Mucus
- d. Surfactant
- e. **Elastase**

42. A lung mass of a 50 pack-year smoker is biopsied. If ADH levels were grossly increased, what would most likely be the histologic appearance of this mass?

- a. Tall columnar cells bordering the alveolar septum

- b. Sheets of small round cells with hyperchromatic nuclei**
- c. Layered squamous cells with keratin pearls
- d. Hyperplasia of mucin producing glandular tissue
- e. Pleomorphic giant cells with leukocyte fragments in cytoplasm