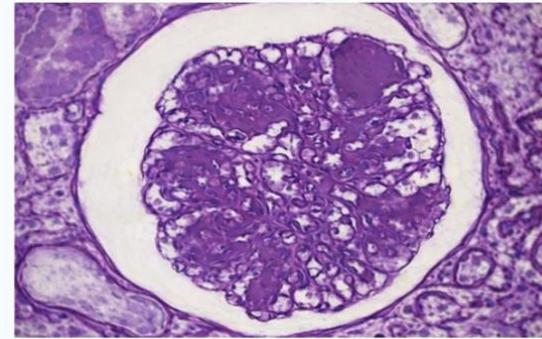
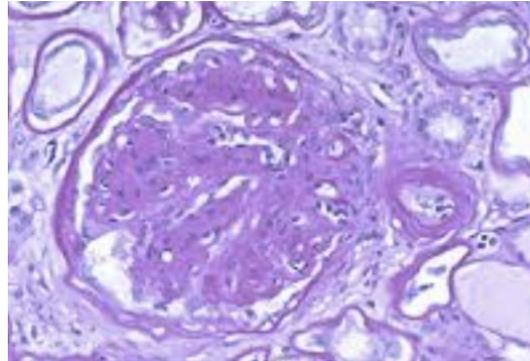


PATHOLOGY

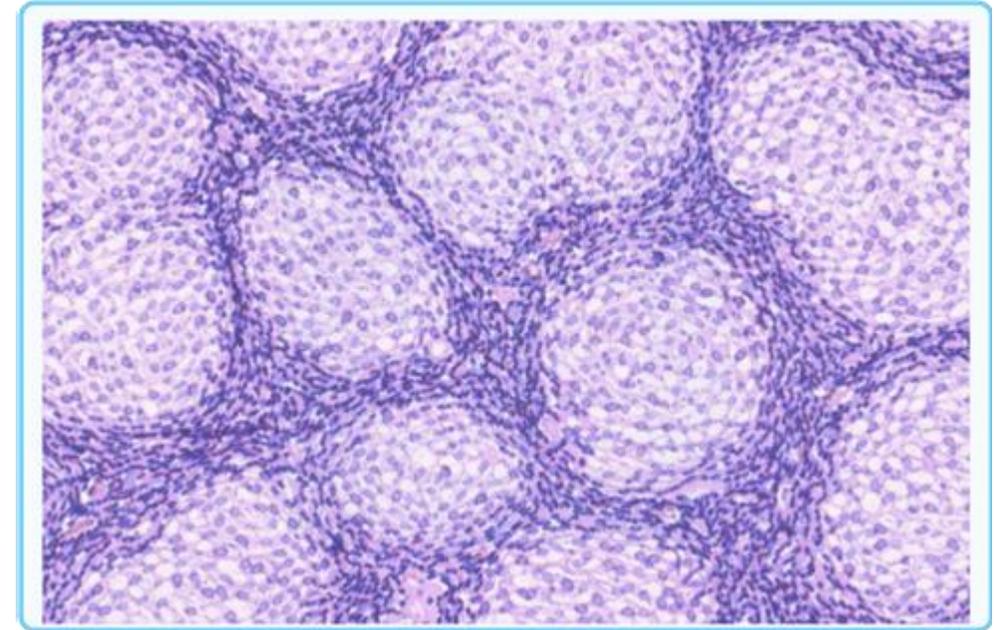
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1. A 35-year-old woman presents with fatigue, low grade fever and shortness of breath on activity with weight loss for last 3 week. CXR shows enlarged lymph nodes in chest and CT guided lymph node biopsy is shown below. She has 2 pet cats. Which of the following is correct about this condition?

- a. Stellate granulomas
- b. Lymphocytic alveolitis
- c. Epithelioid macrophages with central suppuration
- d. Necrotising lymphadenitis

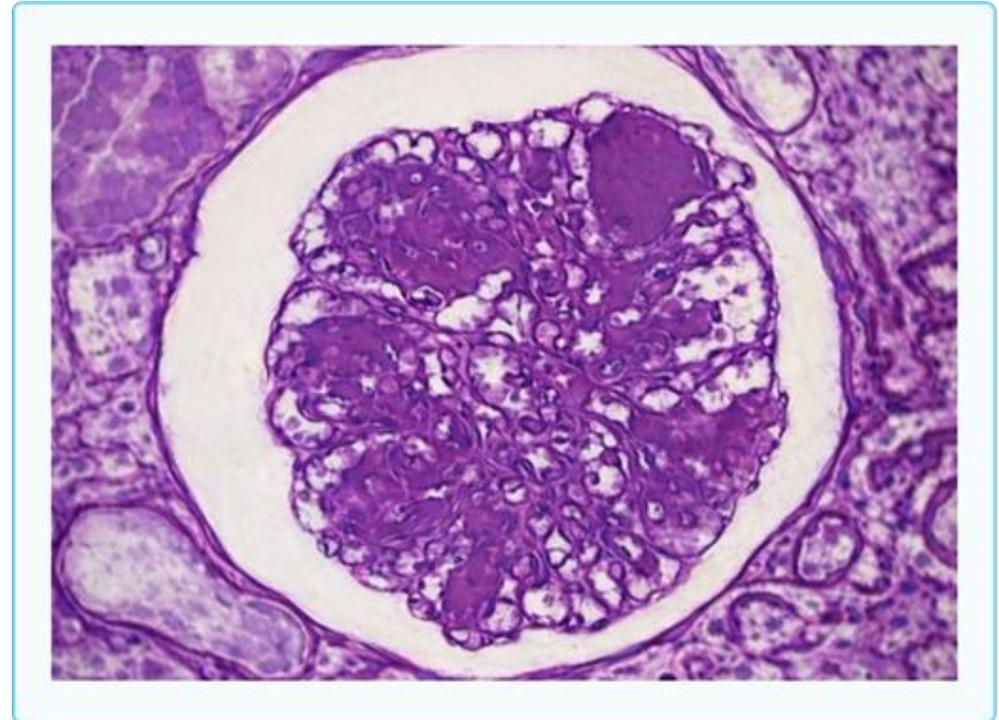


2. Defective phago-lysosomal action of macrophages leading to targetoid appearance and basophilic inclusions in biopsy specimen taken from urinary bladder is seen in which of the following conditions?

- a. Chediak Higashi syndrome
- b. Job syndrome
- c. Malakoplakia
- d. Schistosomiasis

3. A 30-year-old woman with recurrent episodes of rash in intertriginous area is having massive proteinuria with oedema and hypoalbuminemia. Rash has been managed with topical antimycotics. Due to deranged KFT and fructoasmine levels , Kidney biopsy was done and light microscopy is shown below. Which of the following is correct description of aetiology of this presentation?

- a. Diabetes mellitus
- b. Systemic Lupus erythematosus
- c. FSGS
- d. Amyloidosis

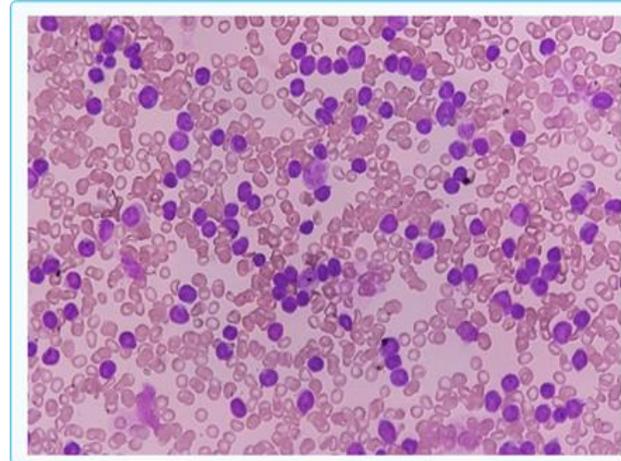


4. 52-year-old man presents with progressive weakness of both lower limbs followed by involvement of the upper limbs over last eight months. There is no sensory loss and no bowel or bladder involvement. On examination muscle wasting and fasciculations are present in the hands. Brisk deep tendon reflexes in lower limbs. Plantar responses are extensor. Cranial nerve examination reveals tongue fasciculations. CSF analysis is normal. Which of the following pathological findings is most likely seen in this condition?

- a. Albumino-cytologic dissociation
- b. Destruction viral mediated of anterior horn cells
- c. Eosinophilic intracytoplasmic inclusions in alpha motor neurons
- d. Segmental demyelination of motor roots

5. A 19-year-old male presents with continuous gum bleeds and fever with progressive fatigue for 3 weeks. Examination shows pallor and mild splenomegaly. CBC shows: Hb: 7.8 g/dL, TLC: 68,000/mm³, Platelets: 42,000/mm³. Bone marrow aspirate shows >25% blasts. Which of the following is correct about this condition?

- a. MPO positivity on cytochemistry
- b. t(15;17) translocation
- c. CD10 and TdT positivity
- d. Presence of Auer rods



6. What is the normal B to T cell ratio in peripheral blood immune system?

- a. 1: 4
- b. 1:2
- c. 2:1
- d. 4:1

7. A 2 year old child is admitted with recurrent pneumonia episodes and steatorrhea. You are suspecting mucoviscidosis in this patient. Which is correct about the pathophysiology of this disease?

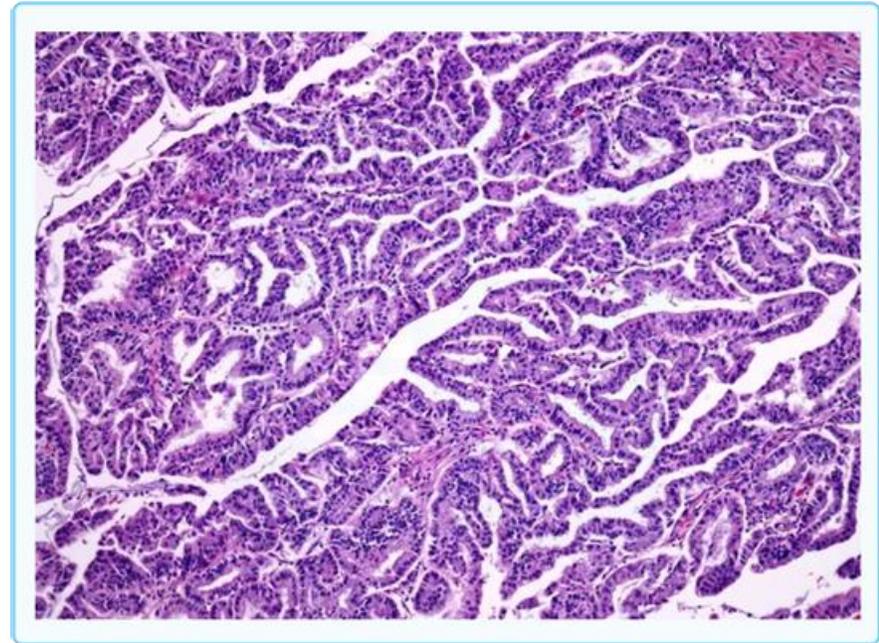
- a. Low sweat chloride levels
- b. Dehydrated periciliary fluid
- c. Gain of function of CFTR protein
- d. Impaired ciliary function

8. A farmer presents with recurrent episodes of fever, dry cough, chest tightness, and breathlessness occurring 4–6 hours after working in his grain storage area. Symptoms partially subside when he stays away from work. On examination, fine inspiratory crackles are heard bilaterally. HRCT chest reveals ground-glass opacities with centrilobular nodules. Bronchoalveolar lavage shows lymphocytosis. Which of the following immunological mechanisms best explains this condition?

- a. IgE-mediated mast cell degranulation
- b. Antibody-dependent cell-mediated cytotoxicity
- c. Immune complex-mediated and T-cell-mediated hypersensitivity
- d. Ig-M mediated antibody dependant cell cytotoxicity

9. A 60-year-old man with recurrent vomiting episodes is found to have cauliflower growth in stomach. Punch biopsy report of the same is shown. Which of the following is not seen with this condition?

- a. Linitis plastica
- b. Virchow's node enlargement
- c. Iron deficiency anemia
- d. Umbilical bruising

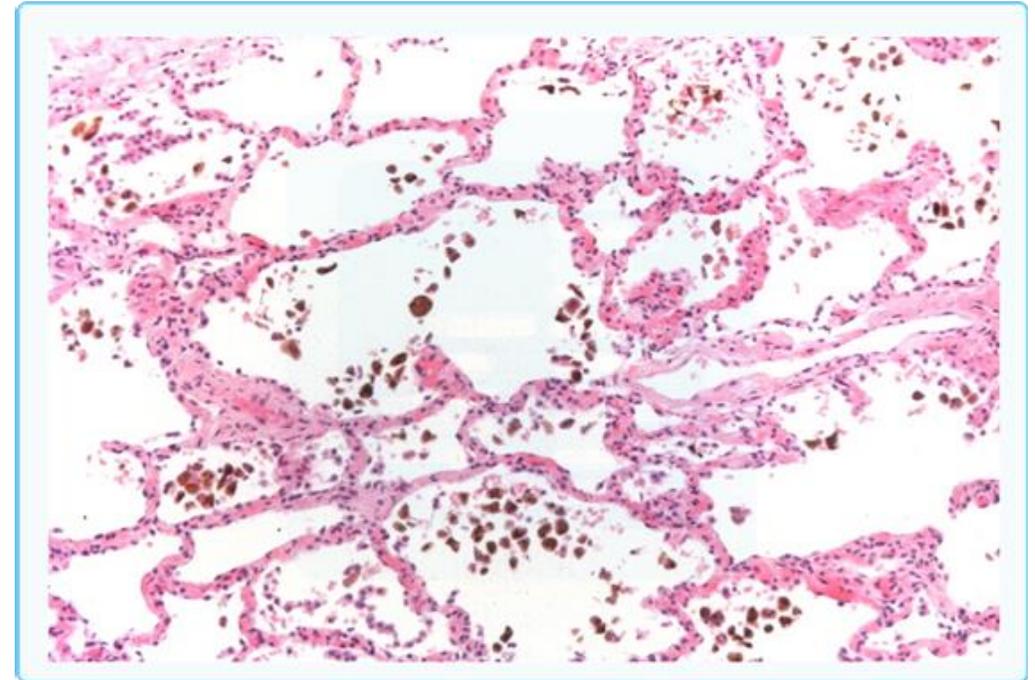


10. A farmer develops extensive rash, fever and arthralgia at all the large joints in the body five days after receiving anti snake venom for neurotoxin envenomation. Which type of hypersensitivity reaction is seen here?

- a. Type 1
- b. Type 2
- c. Type 3
- d. Type 4

11. All of the following can cause the following lung histology findings except?

- a. Hemochromatosis due to recurrent packed RBC transfusion
- b. Severe anaemia with elevated BNP levels
- c. Dilated cardiomyopathy
- d. Fish mouth mitral heart valve

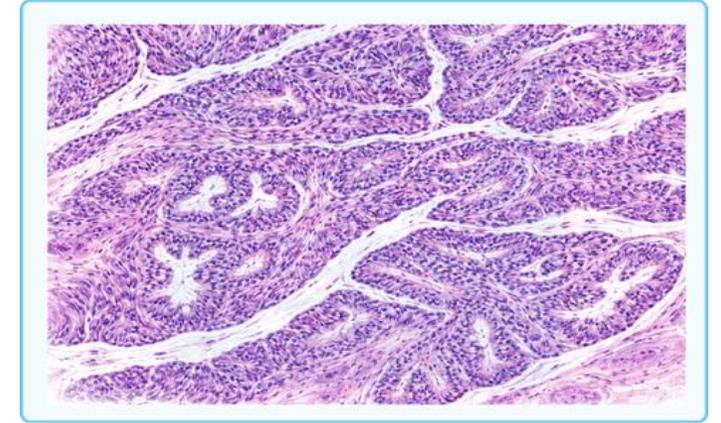


12. 60-year-old patient develops cough and weight loss for the last 3 months. Biopsy of lung mass shows expression of chromogranin and synaptophysin. Blood sugar was elevated with normal electrolytes. Which paraneoplastic syndrome will most likely be present in this patient?

- a. Hypercalcemia
- b. Cushing syndrome
- c. Gynaecomastia
- d. SIADH

13. Post mortem specimen of bowel of 60-year-old man is shown below. He was low grade fever and cachexia. Which of the following is the most likely cause of this presentation?

- a. Colon cancer
- b. Intestinal tuberculosis
- c. Crohn disease
- d. Ulcerative colitis



14. A 2-year-old child is having recurrent pneumonia episodes. Examination shows delayed dentition. Labs show increased Ig E levels and eosinophilia. Which of the following conditions is the cause of this presentation?

- a. LYST gene mutation
- b. STAT3 mutation
- c. 22q11.2 deletion
- d. NADPH oxidase (gp91phox) mutation

15. Splenectomy is performed due to hypersplenism. Histopathological examination of the spleen shows multiple small, brownish nodules composed of fibrous tissue with hemosiderin deposition and focal calcification. This is seen in which of the following conditions?

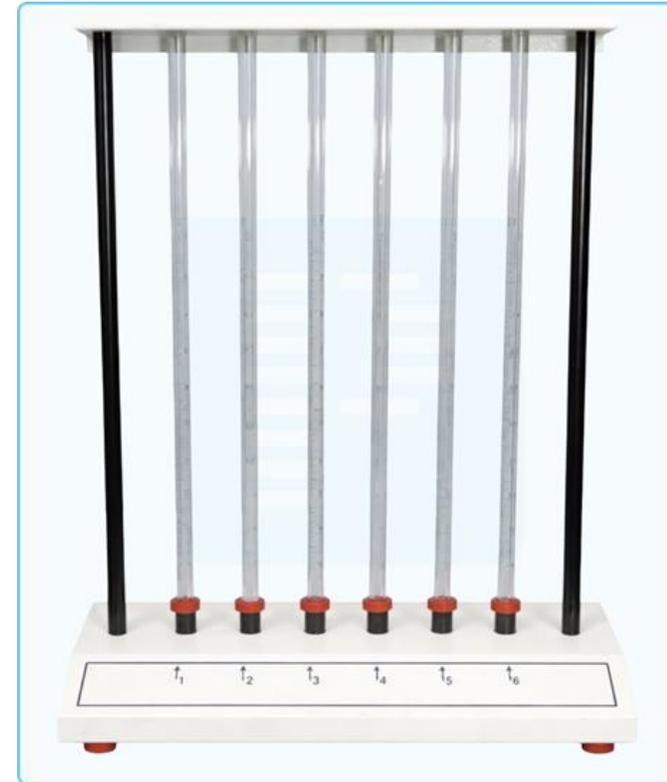
- a. Cirrhosis
- b. Autosplenectomy
- c. Accessory spleens
- d. Pyelonephritis

16. Which of the following is not a function of B cell?

- a. Antibody production
- b. Antigen presentation via MHC II cells
- c. Immune memory
- d. Can proliferate

17. The following instrument is used for which of the following parameters?

- a. Determination of ESR
- b. Determination of osmotic fragility
- c. Determination of serum bilirubin
- d. Determination of urinary Urobilinogen



18. Which of the following cells is primarily responsible for producing circulating antibodies in response to an antigen?

- a. Naive B lymphocyte
- b. Activated B lymphocyte
- c. Plasma cell
- d. Memory B cell

19. A 12-year-old boy with a history of RHD is put on secondary prophylaxis with benzathine penicillin. Within minutes of receiving an intramuscular injection, he suddenly develops intense pruritus, breathlessness with wheezing, and a rapid fall in blood pressure. Which of the following immunological mechanisms is primarily responsible for this reaction?

- a. Eosinophil-mediated complement activation
- b. Eosinophil mediated IL- 4 release
- c. Basophil-mediated IL-4 release
- d. Ig E mediated complement activation

20. Which of the following histopathological findings is seen in liver biopsy of a diabetic patient with HbA1c of 12%?

- a. Councilman bodies
- b. Kimmel stein Wilson change
- c. Mallory Hyaline bodies
- d. Armani Epstein change

21. A 50-year-old man presents to the OPD with heartburn and cough and a 25-year history of smoking 2 packs daily. Which of the following epithelial transformations can occur in the lungs of this patient?

- a. Squamous to intestinal columnar epithelium
- b. Columnar to squamous epithelium
- c. Transitional to squamous epithelium
- d. Cuboidal to columnar epithelium

22. Patient presents with pitting pedal oedema for the past 2 weeks. Labs: LFT = normal, serum albumin= 2 gm/dl, KFT= deranged with massive proteinuria, HbA1c 10% and Echo report is normal. USG abdomen shows bilaterally enlarged kidneys. Kidney biopsy was done. Which of the following histopathological reports is most likely to be seen?

- a. Nodular glomerulosclerosis
- b. A-beta 2 microglobulin deposits
- c. Diffuse glomerulosclerosis
- d. Apple green birefringence for Congo red deposits

23. Which of the following is not correct about T lymphocytes?

- a. Derived from bone marrow
- b. Concentrated in germinal centres of lymph nodes
- c. Constitute 70% of peripheral blood lymphocytes
- d. Responsible for type IV hypersensitivity reaction

24. Liver biopsy of a patient with jaundice and elevated liver enzymes for 6 months was performed. The patient is an IV drug user. Serology shows

HBsAg Positive

HBeAg positive

IgM anti HBc negative

IgG anti HBc positive

Which is the most likely finding to be seen

- a. Councilman bodies
- b. Ground appearance of hepatocytes
- c. Mallory Hyaline bodies
- d. Ballooning of hepatocytes

25. All of the following changes are seen in reversible cell injury except?

- a. Hydropic changes
- b. Pyknosis
- c. Mitochondrial swelling
- d. Myelin figures

26. "Ghost cells" are seen in which of the following conditions?

- a. Fungal granuloma
- b. Lipase mediated injury in pancreatitis
- c. Burns
- d. Fibrinoid necrosis

27. Which of the following is not a pro-apoptotic regulator?

- a. BAX
- b. BAK
- c. MCL-1
- d. P53

28. Superoxide dismutase works by

- a. Degenerating hydrogen peroxide
- b. Convert Hydroxyl groups to superoxide
- c. Producing hydrogen peroxide
- d. Convert superoxide to hydroxyl groups

29. A 6-month-old male infant presents with sparse, kinky hair, hypotonia, and developmental delay. Laboratory tests reveal low serum copper and ceruloplasmin levels. Which of the following enzyme activity is normal in this condition

- a. Lysyl oxidase
- b. Tyrosinase
- c. Cytochrome C oxidase
- d. Monoamine oxidase A

30. Which of the following is not correct about diapedesis?

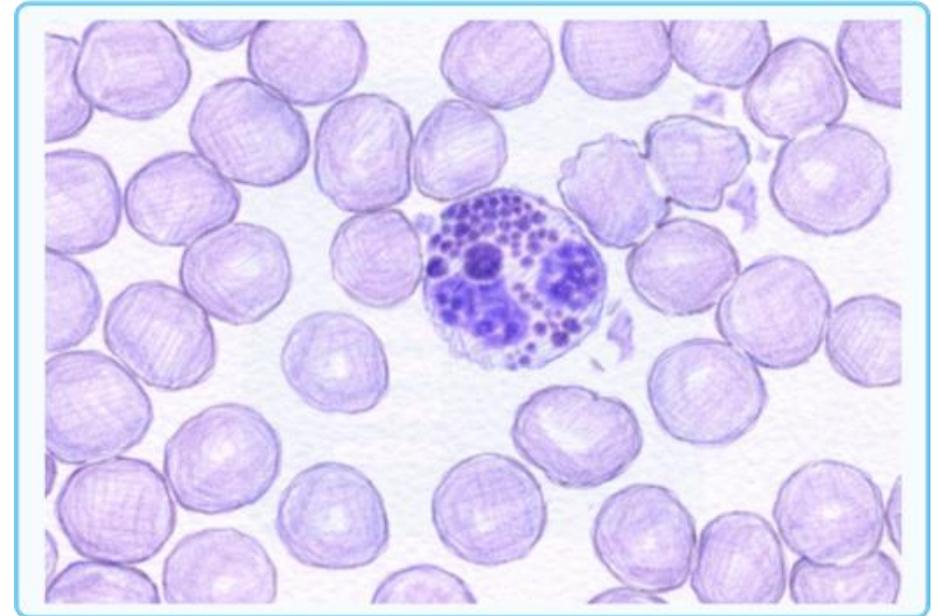
- a. Most important adhesion molecule is CD 31
- b. Occurs in post capillary venules
- c. In lungs it occurs via capillaries
- d. Bi-directional movement of WBC that perform phagocytosis

31. A 3-month-old male infant presents with recurrent skin infections without pus formation, delayed umbilical cord separation, and oral ulcers. Laboratory tests reveal marked leucocytosis with neutrophilia. Which of the following is the most likely defect in this patient?

- a. Deficiency of CD18
- b. Defect in LYST gene
- c. Deficiency of adenosine deaminase
- d. Deficiency of NADPH oxidase

32. A 5-year-old boy presents with recurrent skin and respiratory infections, silvery-gray hair, and light-coloured eyes. On examination, he has mild ataxia. Peripheral blood smear is shown below. Which of the following is the most likely defect in this patient?

- a. Defective NADPH oxidase and impaired respiratory burst
- b. Defective lysosomal trafficking and impaired phagolysosome formation
- c. Defective $\beta 2$ integrin and impaired neutrophil adhesion
- d. STAT3 mutation and impaired Th17 differentiation



33. Which of the following is not correct about chronic granulomatous disease?

- a. Increased infection with *S. Aureus* and *Burkholderia Cepacia*
- b. Abnormal dihydrorhodamine test
- c. Impaired neutrophil chemotaxis
- d. NADPH oxidase defect

34. Which of the following antibodies cannot fix the complement system?

- a. Ig G
- b. Ig M
- c. Ig E
- d. Ig A

35. A 35-year-old young female presents with arm weakness and ptosis that resolves as the day progresses. CT chest shows a peripheral lung mass. Which receptor is affected in this patient?

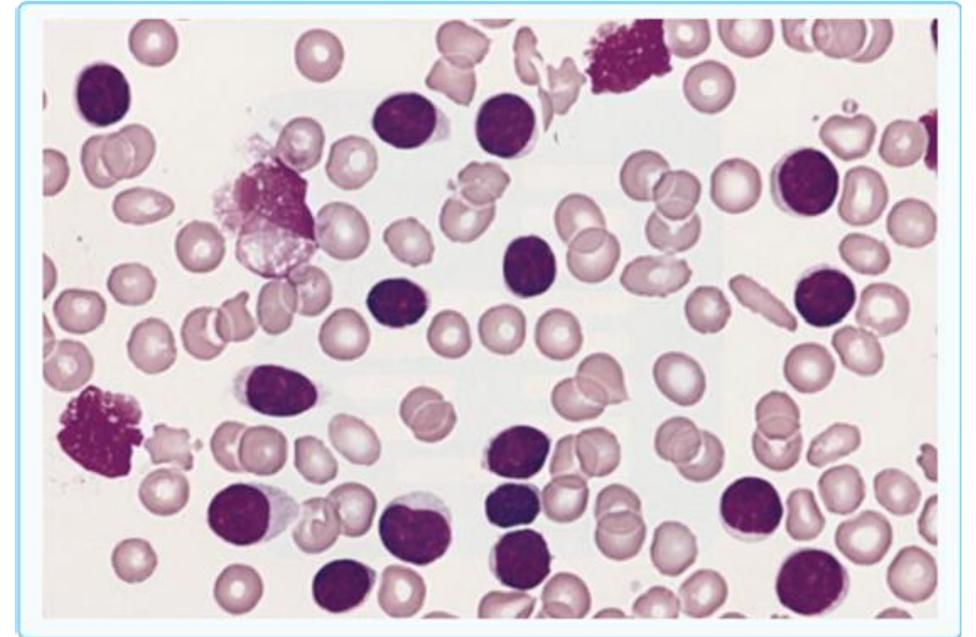
- a. Antibody against nicotinic receptors at the motor end plate
- b. Antibody against muscarinic receptor at motor end plate
- c. Antibody against voltage gated calcium channels at motor end plate
- d. Antibody against acetylcholinesterase activity

36. A 35-year-old male with lepromatous leprosy presents with fever, painful erythematous nodules on the skin, joint pain, and swelling 3 months after starting multidrug therapy. Which type of hypersensitivity reaction is most likely responsible for his current symptoms?

- a. Type I (Immediate, IgE-mediated)
- b. Type II (Cytotoxic, antibody-mediated)
- c. Type III (Immune complex-mediated)
- d. Type IV (Delayed-type, T cell-mediated)

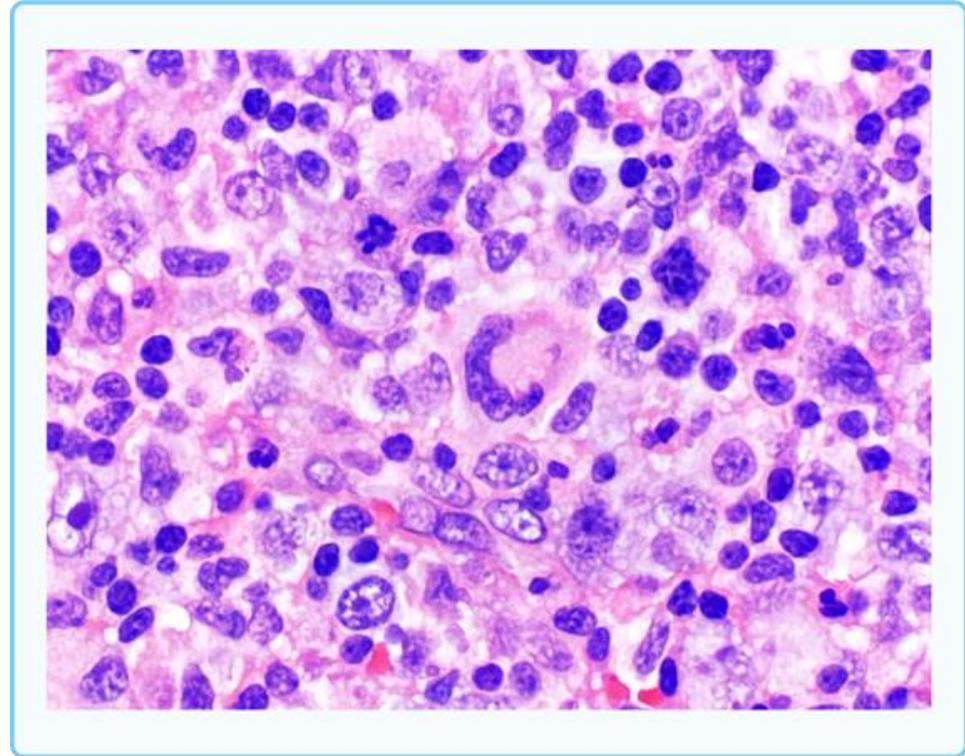
37. A 65-year-old man presents with progressive anaemia and cervical lymphadenopathy. P. Smear is shown below. Which CD markers are seen in this case?

- a. CD3, CD5, CD8
- b. CD10, CD19, CD22
- c. CD19, CD20, CD23, CD5
- d. CD13, CD33, CD117



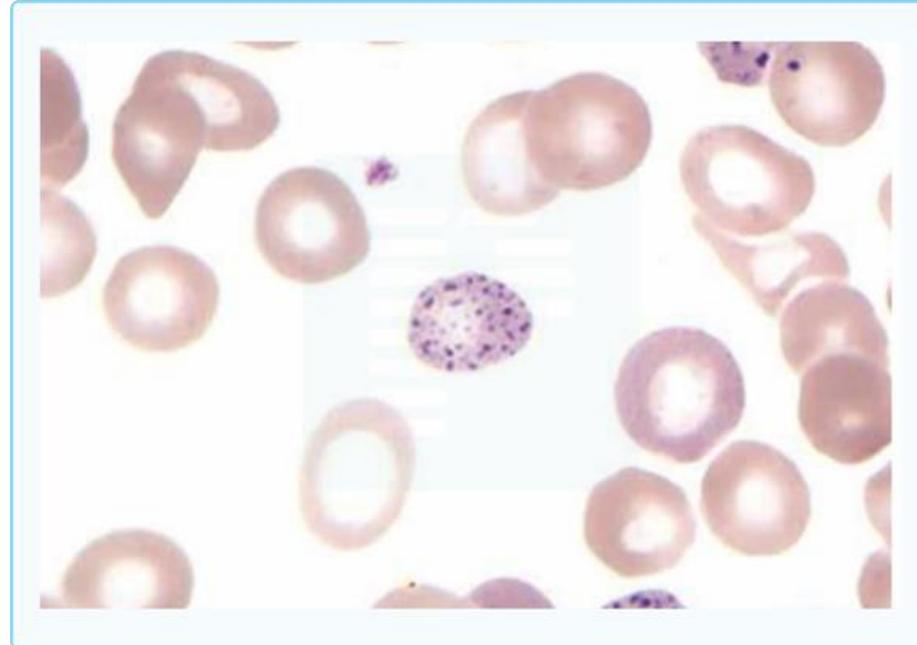
38. 12-year-old presents with fever, weight loss and painless cervical lymphadenopathy. Lymph node biopsy stained with H&E has hallmark cells. The diagnosis of anaplastic large cell lymphoma was made. Most likely translocation?

- a. t(8;14)
- b. t(8;22)
- c. t(2;5)
- d. t(14;18)



39. A young boy presents with a history of ingestion of paint chips, leaves, and soil. A blood examination is conducted. Based on the clinical history and suspected environmental exposure, what is the most likely pathology?

- a. Lead poisoning
- b. Iron deficiency anemia
- c. Thalassemia
- d. Sickle cell anemia



40. Bernard-Soulier syndrome is caused by a defect in which of the following platelet glycoproteins?

- a. Gp IIb/IIIa
- b. Gp Ib/IX complex
- c. Gp Ia/IIa
- d. Gp IV

41. A newborn presents with upward slanting palpebral fissures, flat facial profile and hypotonia, Karyotyping shows a 5p deletion. What is the most likely diagnosis?

- a. Edwards syndrome
- b. Cri du chat syndrome
- c. Down syndrome
- d. Patau syndrome

42. A 25-year-old woman presents with lower abdominal discomfort. There is no vaginal discharge. USG abdomen shows an ovarian mass. Post surgical image of resected tumour is given below. What is correct histopathological findings about this condition

- a. Psammoma bodies
- b. Hob nail cells
- c. Fried egg appearance
- d. Rokitansky protuberances



43. A 16-year-old girl presents to the ER with fever, severe headache, neck stiffness, and purpuric rash. Lumbar puncture is performed, and CSF analysis shows turbid fluid with low glucose, elevated protein, and 1000 neutrophils/mm³. Gram stain demonstrates gram-negative diplococci. On further history, it is noted that the patient has had multiple hospital admissions in the past for similar episodes of severe bacterial meningitis. Which of the following is the most likely underlying reason for his recurrent infections?

- a. Complement C1,2,4 deficiency
- b. Complement C5–C9 deficiency
- c. Bruton's agammaglobulinemia
- d. Chronic granulomatous disease

44. All of the following act as opsonins to enhance phagocytosis except?

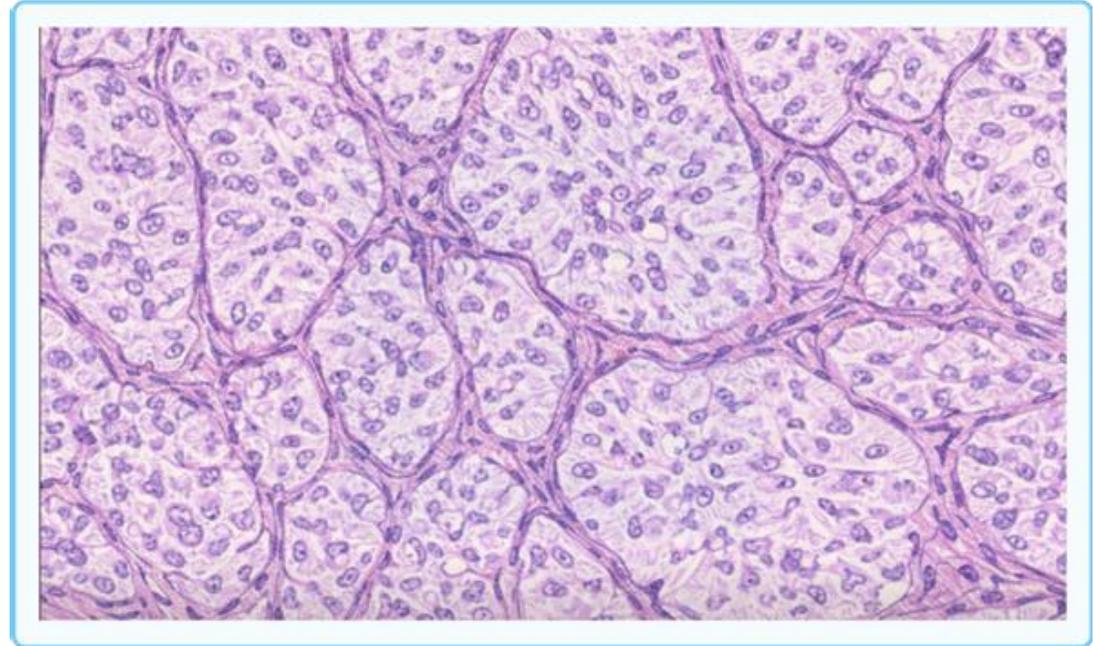
- a. IgG
- b. Complement C3b
- c. Mannose-binding lectin
- d. Complement C5a

45. Koilocytosis is caused by which of the following conditions?

- a. Human papilloma virus
- b. Kaposi Herpes simplex virus
- c. Upper Oesophageal webs
- d. Barrett Oesophagus

46. A 35-year-old patient undergoes a CT guided biopsy of a retroperitoneal mass. Histopathology shows "nests of cells in Zellballen pattern". Which of the following is correct for biochemical determination of this tumour?

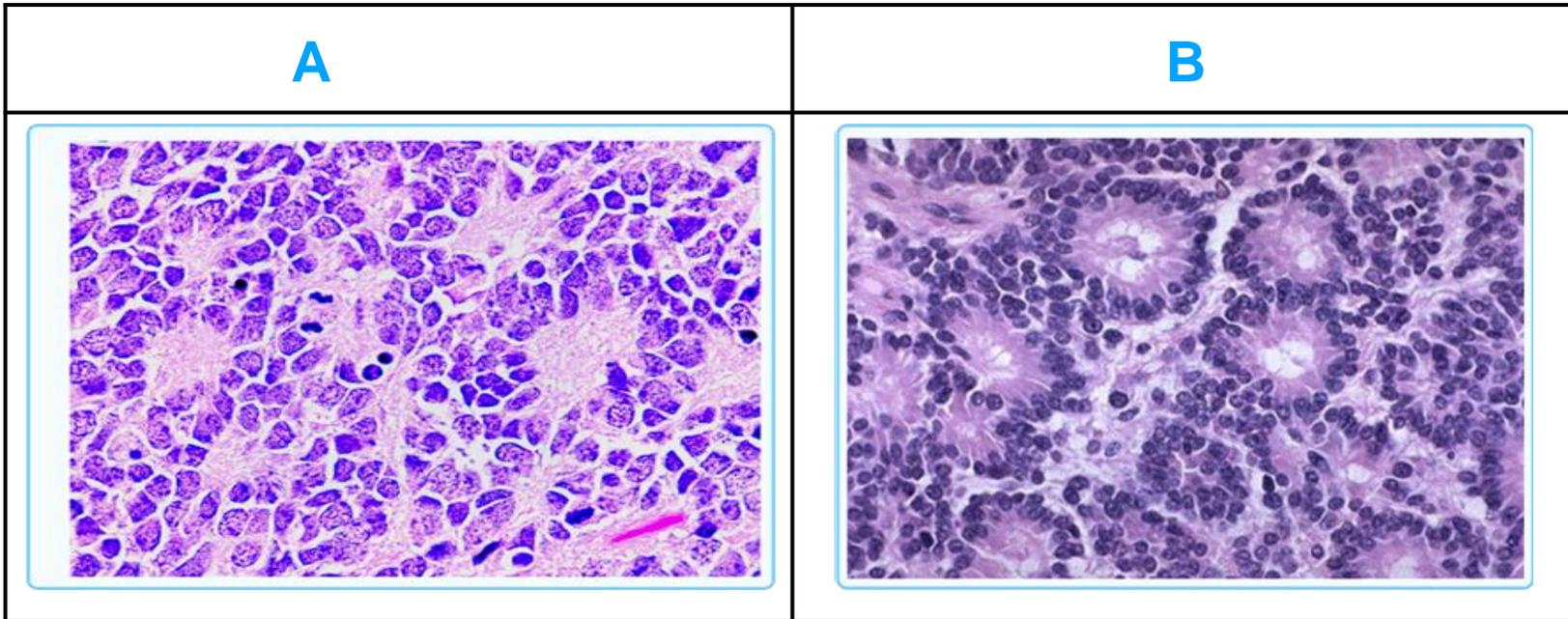
- a. Synaptophysin positivity
- b. Serum chromogranin A
- c. Neuron specific enolase
- d. Metanephrines



47. Histology of the excised mitral valve shows fibrinoid necrosis surrounded by mononuclear cells and palisading histiocytes along with Anitschkow cells in the myocardium. Which of the following is the cause of this presentation?

- a. Infection of myocardium with *Streptococcus pyogenes*
- b. Infection of pericardium with C.O.N.S
- c. Fibrinoid necrosis of coronary vessels
- d. Molecular mimicry between Beta- myosin heavy chains and M proteins

48. Which of the following is correct about the rosettes in the slides shown below



- a. A= Homer Wright, B= Flexner Wintersteiner
- b. A= Flexner Wintersteiner, B= Homer Wright
- c. A= True ependymal, B= Homer wright
- d. A= Homer Wright, B= True ependymal

49. Which of the following is a hallmark feature of malignancy?

- a. Metaplasia
- b. Dysplasia
- c. Anaplasia
- d. Desmoplasia

50. Which of the following is the most common benign lung tumour?

- a. Small cell cancer
- b. Squamous cell cancer
- c. Adenocarcinoma lung
- d. Pulmonary hamartoma

51. A- 60-year-old lady presents with cachexia and gross abdominal distention. On examination, fluid thrill and shifting dullness is noted. Ascitic tap shows malignant cells. Which of the following is the leading cause?

- a. Pseudomyxoma peritonei
- b. Serous cystadenocarcinoma of ovary
- c. Serous cystadenoma of ovary
- d. Mucinous cystadenoma of ovary

52. A 60-year-old man presents with obstructive jaundice. On examination palpable gall bladder is felt in RUQ. MRCP shows an ill-defined 3X 4 cm mass in the head of the pancreas. Which of the following tumour suppressor genes is most likely responsible for this presentation?

- a. APC
- b. DPC
- c. STK11
- d. INK4

53. A 30-year-old construction worker presents with shortness of breath. CXR is shown below. It was taken after pleural tapping that showed bloody pleural effusion. Which of the following is the cause of this presentation?

- a. Silicosis
- b. Asbestosis
- c. CWP
- d. Siderosis



54. Hormone responsive liver tumour?

- a. Haemangioma
- b. Hepatic adenoma
- c. Fibrolamellar variant of hepatocellular carcinoma
- d. Focal nodular hyperplasia

55. Which is correct about the Klatskin tumor?

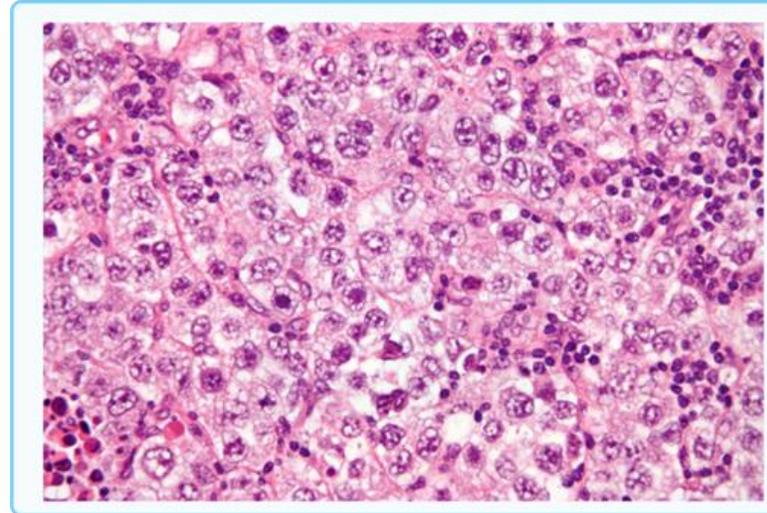
- a. Cholangiocarcinoma at common hepatic duct bifurcation
- b. Hepatoblastoma with high AFP levels
- c. Liver metastasis from descending colon
- d. Angiosarcoma caused by exposure of polyvinyl chloride

56. A Young girl presents with chronic diarrhoea and abdominal pain episodes. On examination she has mucocutaneous pigmentation on lips. Endoscopic ultrasound shows polyps in the jejunum. Which of the following is correct about this condition?

- a. Gluten elimination from diet will improve her pigmentation and diarrhoea
- b. Genetic basis on chromosome 19
- c. APC gene on chromosome 5
- d. Associated with C-KIT/CD 117 mutations

57. A 30-year-old man presents with painless testis enlargement for the last 6 months. Work up was done and high inguinal orchidectomy was done. Resected specimen and histology slide is shown. Which of the following is correct about this tumor?

- a. Germ cell tumor with raised PLAP
- b. Germ cell tumor with raised PAP
- c. Germ cell tumor with raised HCG
- d. Germ cell tumor with raised AFP

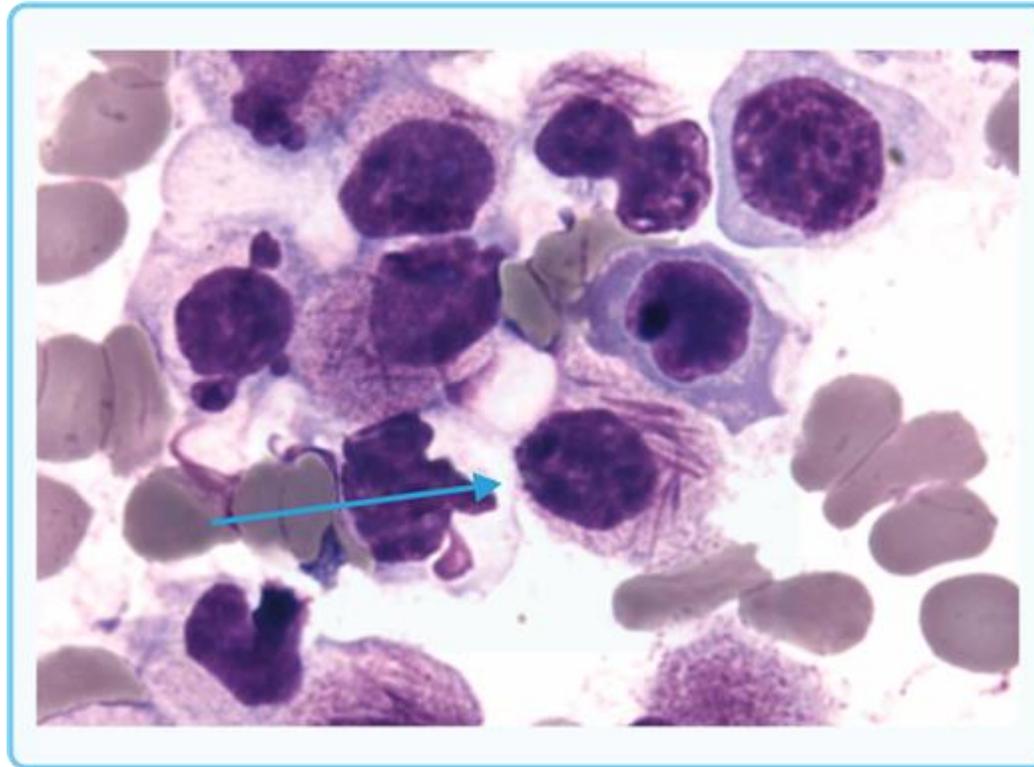


58. Pseudo-gaucher cells on Bone marrow aspiration with low LAP score is seen in which of the following conditions

- a. AML
- b. CML
- c. CLL
- d. ALL

59. 40-year-old man is having recurrent epistaxis, haematuria episodes since last one month. On examination he has petechiae, purpura on lower limbs. Work up shows Hb: 7 gm%, TLC: 3000/cu.mm, Platelet count: 10,000/ cu.mm. P.smear is shown below. Which of the following is the cause of this presentation?

- a. t (15:17)
- b. inv 16
- c. t (8:14)
- d. t (9:22)

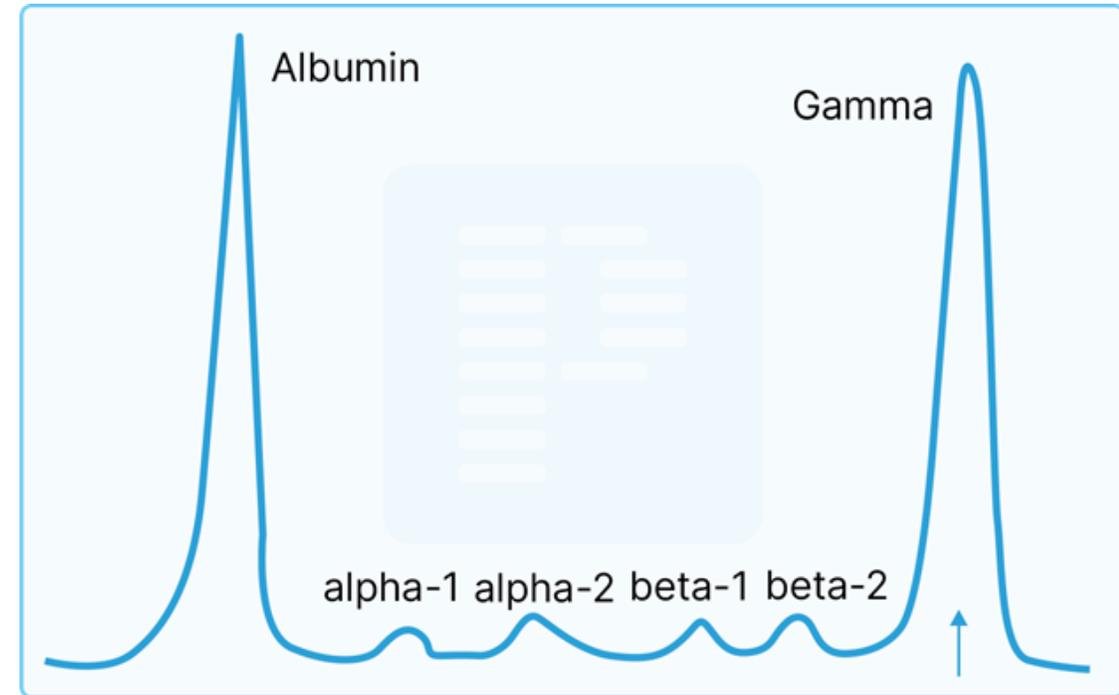


60. Which of the following is the most common type of Non-Hodgkin lymphoma?

- a. Nodular sclerosis
- b. Mixed cellularity
- c. Diffuse large B cell lymphoma
- d. Burkitt lymphoma

61. A 60-year-old female presents with low backache, weakness, back pain and repeated infections. Work up shows deranged KFT with anaemia and hypercalcemia. Her serum electrophoresis report is shown below. The prognosis of this condition is determined by which of the following?

- a. Ig G and albumin
- b. Hb and urinary Bence jones proteins
- c. Albumin and Urinary Bence jones proteins
- d. Albumin and beta 2 Micro-globulin



62. A 8-month-old boy is having bilateral knee hemarthrosis. Mother tells of easy bruisability in a child. Work up shows BT normal, PT normal and aPTT is deranged. Gene sequencing shows F8 gene mutation. What is the best treatment for this patient to prevent recurrence of these bleeds?

- a. Cryoprecipitate
- b. Fresh frozen plasma
- c. DDAVP
- d. Factor 8 concentrate

63. A 50-year-old man is admitted with a history of recurrent falls. assessment shows dementia with chorea. Family history shows that his father had a similar neurological illness at 60 years of age. Which of the following is correct about this disease?

- a. CAG trinucleotide repeats
- b. CGG trinucleotide repeats
- c. CTG trinucleotide repeats
- d. GAA trinucleotide repeats

64. In your OPD you have a tall person with long thin face, large ears, large testis and hyperextensible joints. He has an intellectual disability. Defect of which of the following chromosomes is responsible for this presentation?

- a. Chromosome 15
- b. Chromosome 17
- c. Chromosome 19
- d. X chromosome

65. Which of the following is the smallest human chromosome?

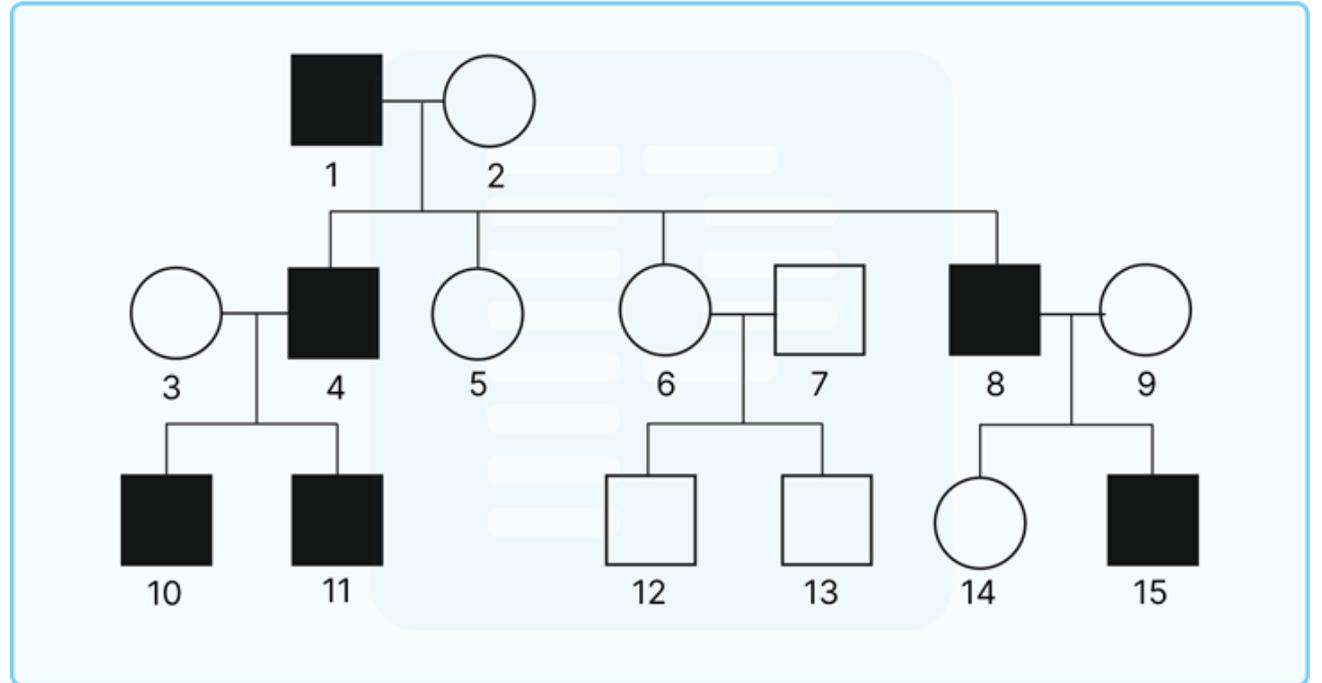
- a. 1
- b. 19
- c. 21
- d. 22

66. Which of the following is not an X linked dominant rickets?

- a. Vitamin D resistant rickets
- b. Alport syndrome
- c. Charcot marie tooth disease
- d. Fabry disease

67. Which of the following is correct about pedigree analysis

- a. X linked recessive
- b. X linked dominant
- c. Mitochondrial inheritance
- d. Y linked inheritance



68. For a diabetic patient on a follow up visit, you intend to check his KFT and electrolytes for evaluation of diabetic nephropathy. The sample will be drawn in which color vacutainer?

- a. Green
- b. Lavender
- c. Blue
- d. Yellow

69. Oval fat bodies on urine microscopy are seen in which of the following?

- a. Fat embolism syndrome
- b. Minimal change disease
- c. Abetalipoproteinemia
- d. Renal artery stenosis

70. Turbid synovial fluid with 100,000 WBC/uL, 90% PMN and 10% lymphocytes with positively birefringent crystals are seen in which of the following conditions?

- a. Calcium pyrophosphate deposition
- b. Monosodium urate deposition
- c. Calcium hydroxyapatite deposition
- d. Glutamate deposition

71. G banding in karyotyping is done for staining?

- a. Centrosome
- b. Telomere
- c. Euchromatin and Heterochromatin
- d. Fragile sites

72. Which of the following renal cell cancer has the worst prognosis?

- a. Clear cell cancer
- b. Papillary cancer
- c. Bellini duct cancer
- d. Chromophobe cancer

73. Leading benign brain tumor of childhood?

- a. Medulloblastoma
- b. Craniopharyngioma
- c. Pilocytic astrocytoma
- d. Meningioma

74. Which of the following tumors has the highest propensity to cause tumor lysis syndrome?

- a. CLL
- b. CML
- c. Hairy cell leukemia
- d. Burkitt lymphoma

75. The most common extranodal location of lymphoma is?

- a. Ileum
- b. Jejunum
- c. Ovary
- d. Stomach

THANK YOU