

MICROBIOLOGY

1. A 3-year-old unvaccinated child presents with fever, cough, and stridor. A throat swab Gram stain shows small pleomorphic Gram-negative coccobacilli. The organism grows on chocolate agar but not on blood agar unless near *Staphylococcus aureus* colonies. What explains this growth pattern?

- a. The organism requires bile salts for growth
- b. It utilizes catalase and urease for satellitism
- c. It requires X (hemin) and V (NAD) factors provided by *S. aureus*
- d. It is a facultative anaerobe and grows in anaerobic conditions only

2. A 30-year-old farmer comes with complaints of fever that waxes and wanes daily with night sweats. On examination, hepatosplenomegaly is present. Personal history shows daily consumption of unpasteurized milk. Which of the following investigations should be done for confirmation of diagnosis?

- a. Castaneda method of Blood culture
- b. Gastric aspirate for AFB
- c. Peritoneal aspirate for AFB
- d. Bordet Gengou culture

3. Which of the following is a true black fungi?

- a. Cladophialophora
- b. Candida
- c. Mucorale
- d. Sporothrix schenckii

4. Which of the following bacteria causes gamma hemolysis?

- a. Group A streptococcus
- b. Group B streptococcus
- c. Group C streptococcus
- d. Group D streptococcus

5. Darting motility is seen in all of the following except?

- a. *Vibrio cholerae*
- b. *Campylobacter*
- c. *Gardenella*
- d. *Proteus mirabilis*

6. A 26-year-old man presents to the emergency department with profuse vomiting that began 2 hours after eating fried rice at a restaurant. His friends who ate the same dish developed similar symptoms. He has no fever or abdominal cramps. Which of the following is culture media used for isolation of the incriminating organism?

- a. BYCE
- b. Castanada
- c. Mannitol-yolk-polymyxin
- d. Deoxycholate citrate agar

7. A 55-year-old man on mechanical ventilation for 10 days develops fever and purulent tracheal secretions. Gram stain of the aspirate shows Gram-negative bacilli. Culture reveals mucoid, non-lactose-fermenting colonies with a fruity odor. Which of the following culture media is most appropriate for isolation of the causative organism?

- a. Ludlam media
- b. Ceftrimide agar
- c. Eaton agar
- d. MacConkey media

8. A 20-year-old college student presents with fever, neck stiffness, and altered sensorium. He reports having similar episodes of meningitis twice in the past three years, each time recovering completely after antibiotics. CSF Gram stain from the current episode shows Gram-negative, kidney-shaped diplococci lying intracellularly within neutrophils. Culture on chocolate agar reveals small, gray, moist colonies that are oxidase positive. Which of the following is the most likely underlying cause for his recurrent infections?

- a. Deficiency of Ig A
- b. Deficiency of C3 complement component
- c. Deficiency of membrane attack complex
- d. Absence of properdin

9. A 38-year-old HIV-positive truck driver presents with headache, fever, and neck stiffness for 5 days. CSF analysis reveals elevated opening pressure, lymphocytic pleocytosis, and low glucose. A special stain of the CSF specimen shows yeast cells surrounded by a capsule that stains bright red against a blue background. Which of the following stains was used?

- a. India ink stain
- b. Mucicarmine stain
- c. Gram stain
- d. Silver methenamine stain

10. *Vibrio cholera* causes rice water stool by which of the following mechanisms?

- a. Activation of adenylate cyclase in enterocytes
- b. Inhibition of adenylate cyclase in enterocytes
- c. Activation of guanylate cyclase in enterocytes
- d. Inhibition of guanylate cyclase in enterocytes

11. Tyndallisation is used for which of the following purposes

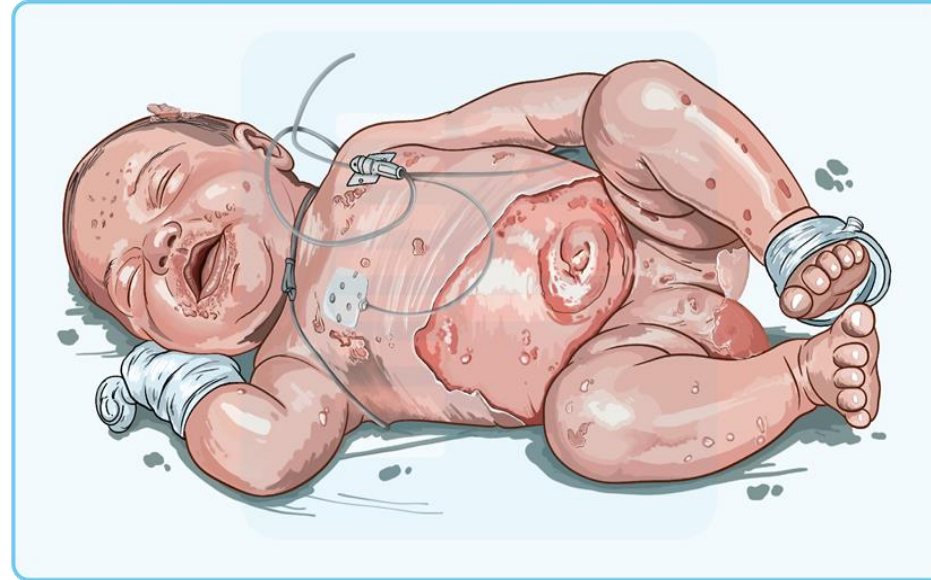
- a. Sterilizing dressings and bedsheets
- b. Sterilizing Culture plates
- c. Sterilising glass pipettes
- d. Sterilizing culture media

12. Antibiotic susceptibility via disk diffusion method is tested using which of the following culture media?

- a. Muller Hinton
- b. PLET
- c. PALCAM
- d. BYCE

13. Which of the following is not correct about the following presentation in an infant

- a. Caused by enterotoxin F
- b. Nikolsky sign is present
- c. Scarring is absent
- d. Caused by Staph aureus



14. Which of the following is not correct about the organism responsible for this presentation?

- a. Oil paint appearance
- b. Grape like clusters of gram positive cocci
- c. Beta haemolysis on blood agar
- d. Quellung reaction

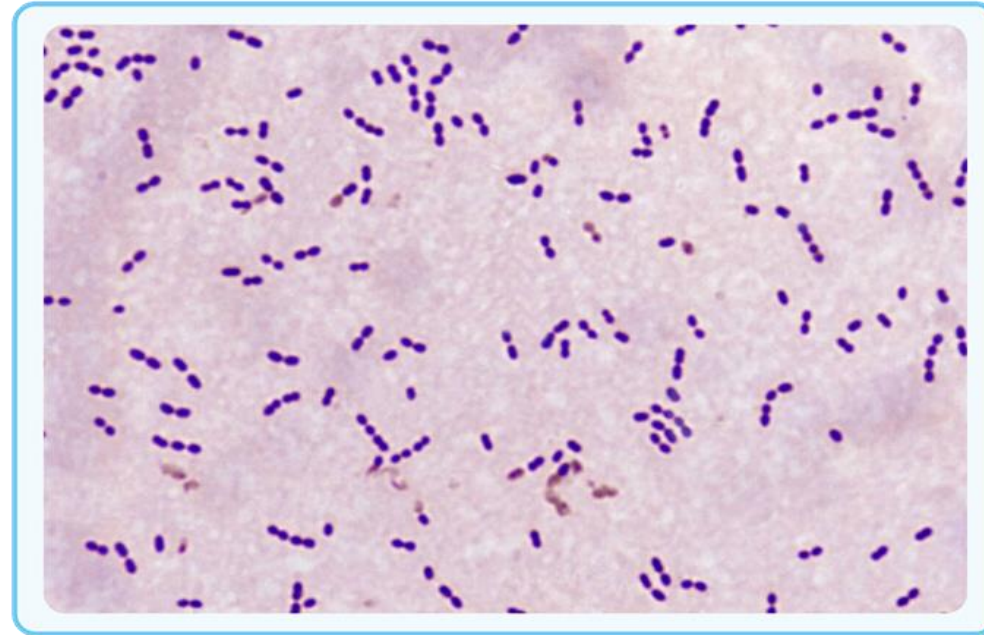


15. Which of the following bacteria causes gamma hemolysis?

- a. Streptococcus pneumoniae
- b. Streptococcus Viridans
- c. Staphylococcus aureus
- d. Enterococcus

16. Which of the following is not correct about these bacteria shown in gram stain of CSF of 40-year-old man with headache, fever and meningeal signs. CSF shows Polymorphonuclear pleocytosis with low sugar and elevated protein?

- a. Bile soluble
- b. Insulin fermenter
- c. Optochin sensitive
- d. Grow in 6.5% NaCl



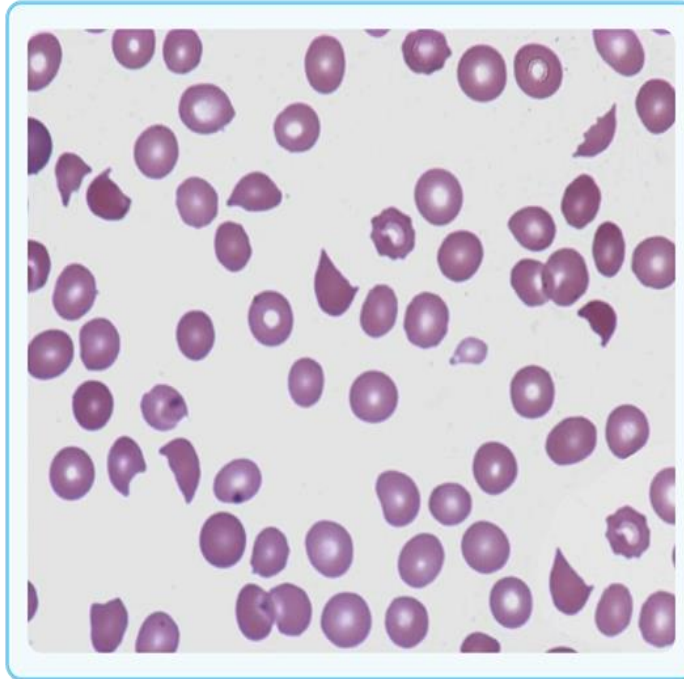
17. A 7-year-old boy is brought with complaints of fever for the past 3 days and drooling of saliva. On examination he has a bull neck with grey white membrane over the tonsils. Which is correct about management of this condition

- a. Rapid detection with Loeffler serum slope and prompt administration of anti toxin
- b. Rapid detection with Tinsdale medium and prompt administration of anti toxin
- c. Rapid detection with Loeffler serum slope and prompt administration of erythromycin
- d. Rapid detection with Tinsdale medium and prompt administration of penicillin G



18. A 30 year old Indian guy went on solo backpacking to Paris. He ate sandwiches from a local restaurant and developed dysentery. This was followed by development of acute kidney injury. Peripheral smear reveals low platelets and schistocytes. Which organism is responsible for this presentation?

- a. EHEC
- b. ETEC
- c. EIEC
- d. EPEC



19. A patient has been diagnosed with disseminated tuberculosis. Which of the following cell wall components of MTB in urine will help in diagnosis?

- a. Mycolic acid
- b. Lipoarabinomannan
- c. Peptidoglycan
- d. Teichoic acid

20. Match the following

a. Pneumonia in alcoholic	1. Klebsiella oxytoca
b. Atrophic rhinitis	2. Klebsiella pneumoniae
c. Donovanosis	3. Klebsiella ozanae
d. Haemorrhagic colitis	4. Klebsiella granulomatis

a. a:2, b: 3, c: 4, d: 1

b. a:1, b: 3, c: 4, d: 4

c. a:2, b: 4, c: 3, d: 1

d. a:2, b: 3, c: 1, d: 4

21. All of the following Enterobacteriaceae are lactose fermenters except?

- a. Citrobacter
- b. Escherichia
- c. Enterobacter
- d. Shigella

22. A-Soldier is evacuated from the battle zone. He has a fractured left tibia and crepitus below the skin of the left thigh, with foul-smelling discharge from an open wound. Which of the following is not correct about the incriminated organism?

- a. Stormy fermentation on litmus milk
- b. Citron bodies
- c. Gram positive rod with terminal spores
- d. Reverse CAMP test

23. A 30-year-old patient was given cefixime and ofloxacin for enteric fever for 2 weeks. The patient has recovered but has come back with explosive watery diarrhea. What screening test will be done on the stool sample of this patient?

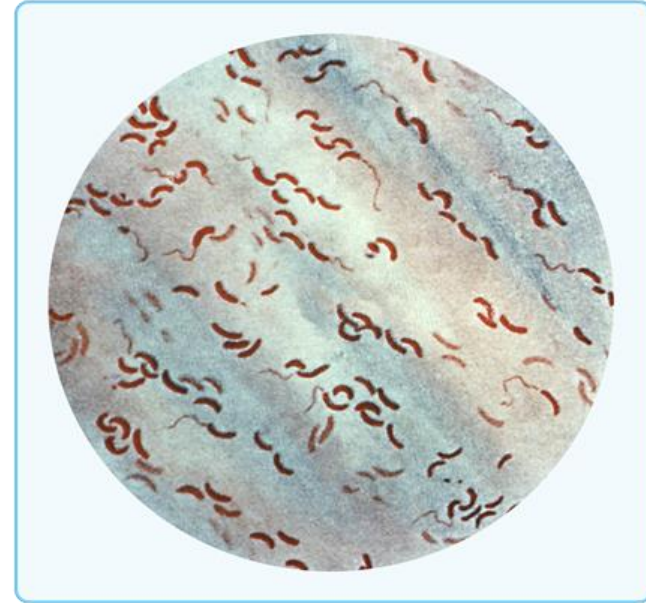
- a. Stool EIA for Glutamate dehydrogenase
- b. Stool ELISA for toxin A and Toxin B
- c. Stool PCR for Toxin A and Toxin B
- d. Stool culture for clostridium difficile

24. A 5-year-old child is diagnosed with whooping cough. Which is not correct about the organism responsible?

- a. Metachromatic staining with toluidine blue
- b. Thumb print appearance of colonies
- c. Bordet gengou culture media
- d. Aerosol transmission from a chronic carrier

25. Comment on the bacteria shown in the slide?

- a. Gram negative aerobe, indole and nitrate positive
- b. Gram negative aerobe, indole and nitrate negative
- c. Gram negative aerobe, indole positive and nitrate negative
- d. Gram negative aerobe, indole negative and nitrate positive



26. A 25 year old patient presents with walking pneumonia. Sputum culture on Eaton agar shows a fried egg appearance of colonies. The organism incriminated is?

- a. Mycoplasma
- b. Legionella
- c. Chlamydia
- d. Klebsiella

27. The neonate is having vacant stare and refusal to feed. On examination, bulging AF was seen. Guarded LP was done and CSF microscopy shows bacteria with tumbling motility. Diagnosis is:

- a. *Listeria monocytogenes*
- b. *Streptococcus agalactiae*
- c. *Streptococcus pneumoniae*
- d. *Acinetobacter*

28. A 70-year-old man presents with high grade fever and SOB. CXR shows multilobar pneumonia. Sputum culture shows colonies on BYCE media. Diagnosis is?

- a. Legionella
- b. Mycoplasma
- c. Chlamydia
- d. Streptococcus pneumoniae

29. A 30 year old patient with dental caries underwent dental extraction at a quack's clinic. He develops below the angle of mandible with a discharging sinus that shows yellow sulphur granules. Microscopy of granules reveals the following appearance. Diagnosis and treatment is?

- a. Cervicofacial actinomycosis and penicillin G
- b. Cervicofacial cellulitis and amoxicillin clavulanic acid
- c. Cervicofacial actinomycosis and sulphonamides
- d. Cervicofacial cellulitis and clindamycin



30. Which virus is incriminated in causing Acute inflammatory demyelinating polyneuropathy?

- a. Campylobacter jejuni
- b. Zika
- c. Hepatitis B
- d. Burkholderia cepacia

31. The farmer presents with high-grade fever, severe calf pain and intense headache for the past 3 days. On examination, conjunctival suffusion is present. Which organism is the likely cause?

- a. Dengue fever
- b. Leptospirosis
- c. Scrub typhus
- d. HFMD

32. The farmer presents with high grade fever, intense headache for the past 3 days and rash on trunk. On examination, the eschar on the leg is noted. Which organism is likely the cause?

- a. *Francisella tularemis*
- b. *Orientia tsutsugamushi*
- c. *Rickettsia rickettsii*
- d. Leptospirosis

33. Which of the following is not a cause of culture negative endocarditis?

- a. Brucella
- b. Tropheryma whipplei
- c. Coxiella burnetii
- d. Coagulase negative staphylococcus

34. The farmer presents with high grade fever, intense headache for the past 3 days and rash on the trunk. On examination, an eschar on the leg is noted. Which of the following is correct about this case?

- a. Weil felix reaction and doxycycline
- b. Mono-spot test and doxycycline
- c. Widal test and ceftriaxone
- d. Microscopic agglutination test and ceftriaxone

35. Which of the following is double stranded segmented RNA virus?

- a. Rota virus
- b. Norovirus
- c. Hepatitis E virus
- d. Hepatitis B virus

36. Which virus causes aplastic crisis in a child from Odisha diagnosed with sickle cell anemia?

- a. Parvovirus B19
- b. JC virus
- c. BK virus
- d. Pox virus

37. A-Patient underwent kidney transplantation in 2024 for diabetic nephropathy at an eGFR of 10ml/min. He is currently diagnosed with post-transplantation lymphoma. Which organism is responsible for this presentation?

- a. CMV
- b. EBV
- c. Polyoma
- d. HSV

38. Owl eye appearance in urine microscopy of a patient who underwent kidney transplantation in 2024 is caused by which of the following?

- a. BK virus
- b. CMV
- c. HSV
- d. HPV

39. Prophylaxis with palivizumab is done for infection with which of the following infections?

- a. RSV
- b. Parainfluenza
- c. Measles
- d. Mumps

40. A child is born with congenital cataracts, SN hearing loss and congenital heart disease having machinery murmur. Which of the following viruses is responsible?

- a. Retro virus
- b. Filo virus
- c. Bunya virus
- d. Matona virus

41. All of the following are caused by HHV 8/ KHSV except?

- a. Castleman disease
- b. Primary effusion lymphoma
- c. Oral black hairy tongue
- d. Kaposi sarcoma

42. All are correct about EBV except?

- a. Enter into cells via CD21
- b. Most important viral oncogene is Latent membrane protein-1
- c. Can remain latent in dorsal root ganglia
- d. Causes post transplantation lymphoproliferative disorder

43. A 35 year old patient comes with fever, lymphadenopathy, vesicular rash on face, mouth, hands, feet and genitals are unprotected sexual exposure. He has a history of traveling to Congo for business. He has no meningeal signs. Work up shows Hb 11 gm%, elevated lymphocyte count with normal platelet count. Probable Diagnosis is?

- a. Reiter syndrome
- b. Monkey pox
- c. Nipah virus
- d. Ebola virus



44. A 25-year-old Youtuber presents with a maculopapular rash over palms and soles, generalized lymphadenopathy, and mucous patches in the oral cavity. What is the most likely diagnosis?

- a. Secondary syphilis
- b. Hand-foot-mouth disease
- c. Rocky Mountain spotted fever
- d. Measles

45. A 60-year-old diabetic patient presents with nasal congestion and facial pain. KOH mount shows septate hyphae with acute angle branching. Which of the following is the most likely organism?

- a. Mucor
- b. Aspergillus
- c. Blastomyces
- d. Chromoblastomycosis

46. Which of the following is the largest hepatitis virus?

- a. HAV
- b. HBV
- c. HCV
- d. HDV

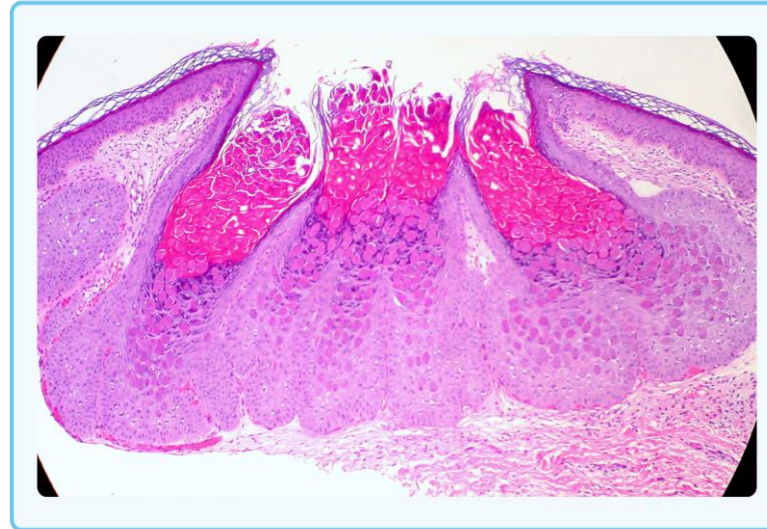
47. Comment on the diagnosis?

- a. Herpes zoster
- b. Molluscum contagiosum
- c. Impetigo
- d. Chicken pox



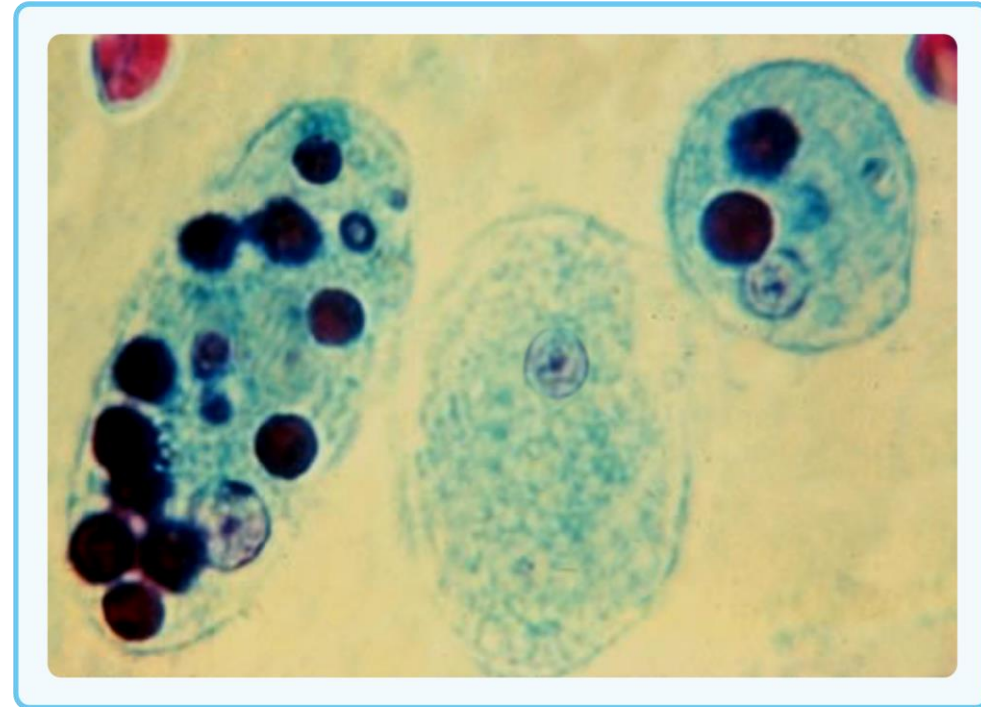
48. A 7-year-old child presents with multiple, small, dome-shaped papules with central umbilication on the trunk. Histopathology reveals large intracytoplasmic eosinophilic inclusions in keratinocytes. Which of the following is the most appropriate treatment?

- a. Oral acyclovir
- b. Trichloroacetic acid
- c. Griseofulvin
- d. Mometasone



49. A 30-year-old lady presents with abdominal pain and blood in the stool. Stool microscopy shows erythro-phagy and charcot leyden crystals. Which of the following is not true about this condition?

- a. Mature cyst is quadrinucleate
- b. Trophozoite is infective form transmitted by feco-oral route
- c. Trophozoite shows gliding motility
- d. Leading extraintestinal site is the liver



50. A 55-year-old immunocompromised patient presents with fever and signs of systemic fungal infection. You order a serum beta-D-glucan test, which returns positive. Which of the following fungal infections is least likely to be diagnosed using the beta-D-glucan assay?

- a. Invasive candidiasis
- b. Pneumocystis Jirovecii pneumonia
- c. Aspergillosis
- d. Cryptococcosis

51. A patient with poorly controlled diabetes presents with necrotizing fasciitis. Which bacteria is most commonly implicated?

- a. *Clostridium perfringens*
- b. *Streptococcus pyogenes*
- c. *Staphylococcus aureus*
- d. *Pseudomonas aeruginosa*

52. 22-year-old patient presents with fever for 2 weeks with abdominal pain. On examination he has coated-tongue with hepatomegaly. Blood work shows leukopenia. He is started on empirical azithromycin and ceftriaxone. Which of the following statements about the bacteria responsible for this presentation is correct?

- a. Selenite F broth is enriched media
- b. O antigen is a heat-labile flagellar antigen
- c. H antigen is the somatic antigen present on the bacterial cell wall
- d. Widal test is tube agglutination test

53. Seroconversion antibody in hepatitis B infection is which of the following?

- a. Ig M Anti Hbc
- b. Ig G Anti Hbc
- c. Total Anti Hbc
- d. Anti Hbs

54. A patient with a central venous catheter develops high fever and chills. Which of the following best describes the causative organism?

- a. Non-lactose fermenting, oxidase positive, blue-green pigment producer
- b. Lactose fermenting, motile, indole positive, pink colonies on MacConkey agar
- c. Lactose fermenting, non-motile, encapsulated, mucoid colonies
- d. Gram-positive cocci in clusters, catalase and coagulase positive

55. Bachman intradermal test is done for diagnosis of which of the following infections?

- a. *Echinococcus granulosus*
- b. *Trichinella spiralis*
- c. *Necator americanus*
- d. *Trichuris Trichura*

56. MC viral hepatitis causing mortality in pregnancy?

- a. HAV
- b. HBV
- c. HEV
- d. HDV

57. While visiting a temple, you notice a beggar with swelling on the foot with multiple draining sinuses discharging seropurulent fluid containing granules which are black in color. MRI foot shows "dot in a circle" sign. Clinical diagnosis is?

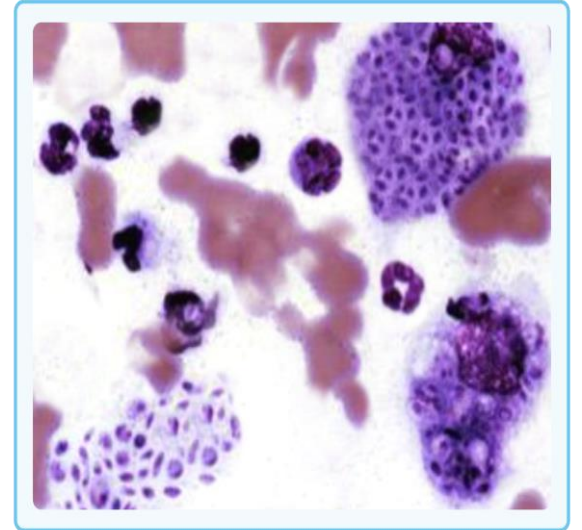
- a. Eumycetoma
- b. Actinomycetoma
- c. Botromycosis
- d. Chromoblastomycosis

58. A- 30-year-old patient presents with warty lesions on lower extremities. Biopsy shows medlar bodies. Diagnosis is?

- a. Blastomycosis
- b. Aspergillus
- c. Sporotrichosis
- d. Chromoblastomycosis

59. Farmer presents with a local pustule on leg that ulcerated. This is followed by development of continuous lesions up to the groin. Biopsy shows cigar shaped budding yeast on histology. Treatment is?

- a. Itraconazole
- b. Itraconazole plus potassium iodide
- c. Itraconazole with cryosurgery
- d. Laser guided Surgical excision



60. A 20 year old patient from a village comes with complaints of high-grade fever and altered sensorium for 1 day. Work up low Hb, elevated LDH and increased unconjugated serum bilirubin. Which blood test must be done in this case for diagnosis?

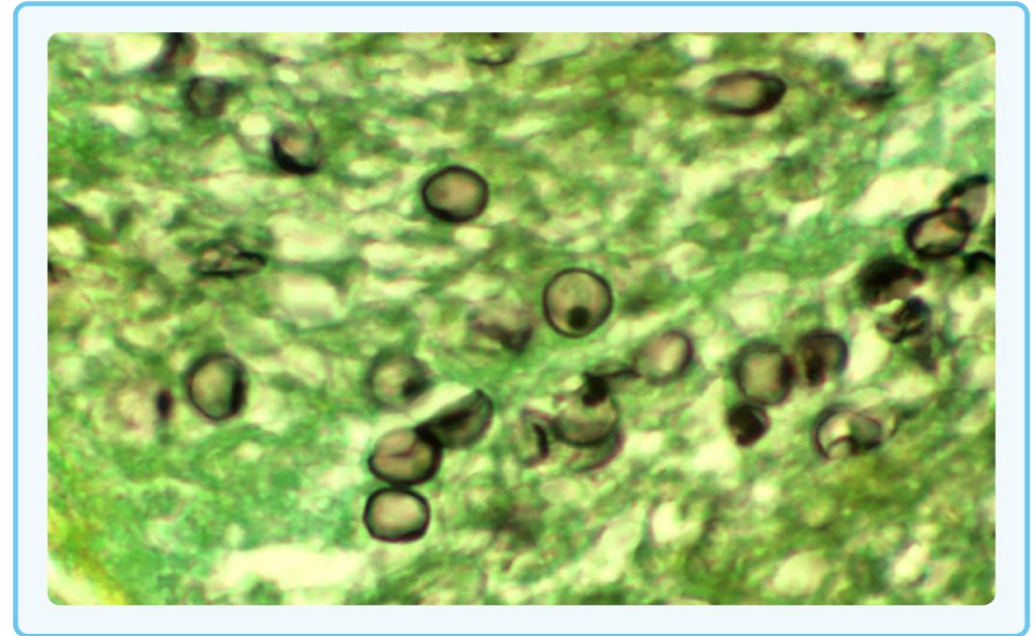
- a. RK 39 antigen
- b. Galactose lectin antigen
- c. HRP-2 antigen
- d. 200KD Ag and OG4C3

61. Parasites found in urine are all except?

- a. Schistosomiasis
- b. *Wucheria bancrofti*
- c. *Trichomonas vaginalis*
- d. *Trichinella*

62. A 30 year old HIV positive patient complains of shortness of breath and dry cough. Sputum examination shows the following infection. Which of the following is not correct about this condition?

- a. Leads to Interstitial pneumonitis
- b. Increased alveolar arteriolar gradient
- c. Treated with Steroids plus TMP-SMX
- d. Most common opportunistic lung infection in HIV positive patients

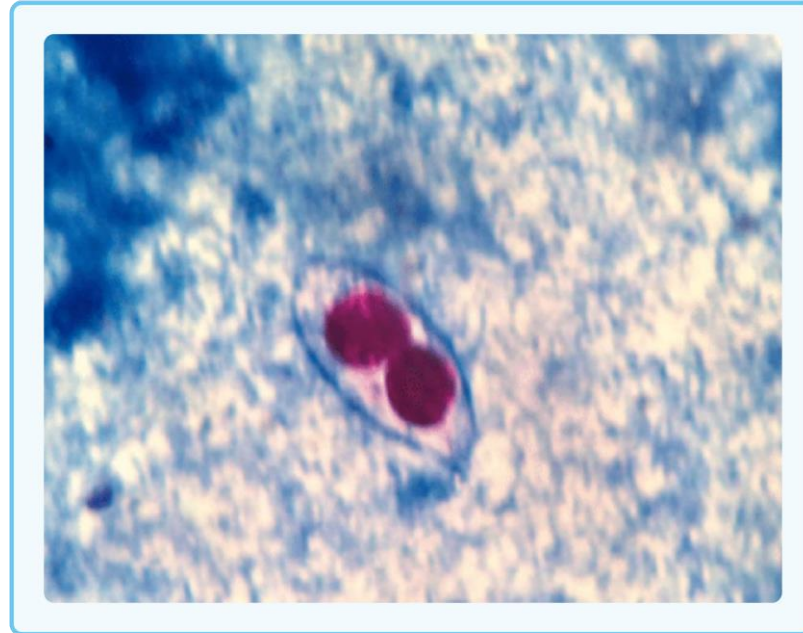


63. Parasites that are transmitted vertically are all except?

- a. Toxoplasma
- b. Trypanosoma
- c. Plasmodium
- d. Isospora

64. Which of the following is a cause of diarrhoea in AIDS patients? The stool Kinyoun staining report is shown below.

- a. Cystoisospora
- b. Cryptosporidium
- c. Isospora
- d. Microspora



65. Urine microscopy showing eggs with lateral spine is a feature of?

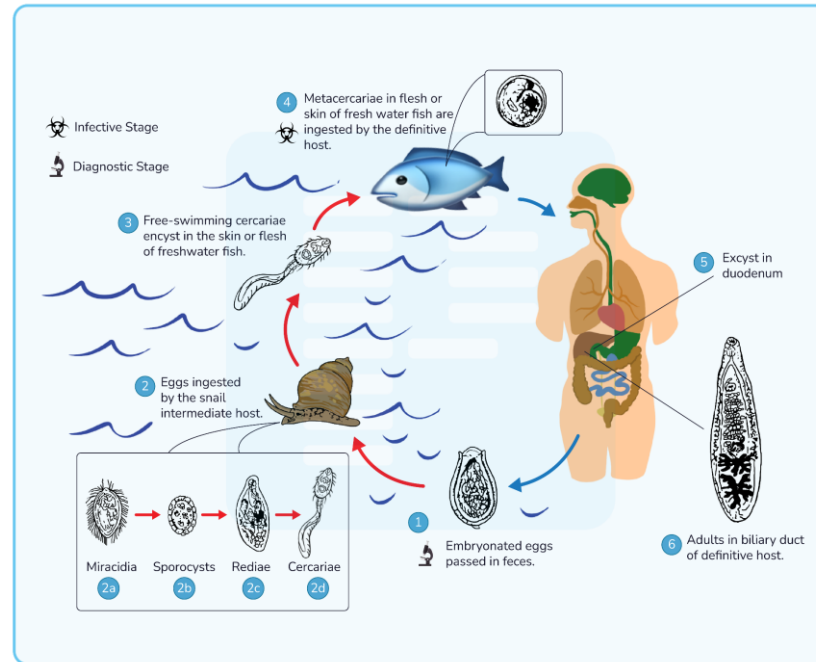
- a. *S. Hematobium*
- b. *S. Mansoni*
- c. *S. Japonicum*
- d. *E. Nana*

66. All of the following parasites have non-bile stained eggs except?

- a. *Ancylostoma duodenale*
- b. *Enterobius vermicularis*
- c. *H. Nana*
- d. *Clonorchis sinensis*

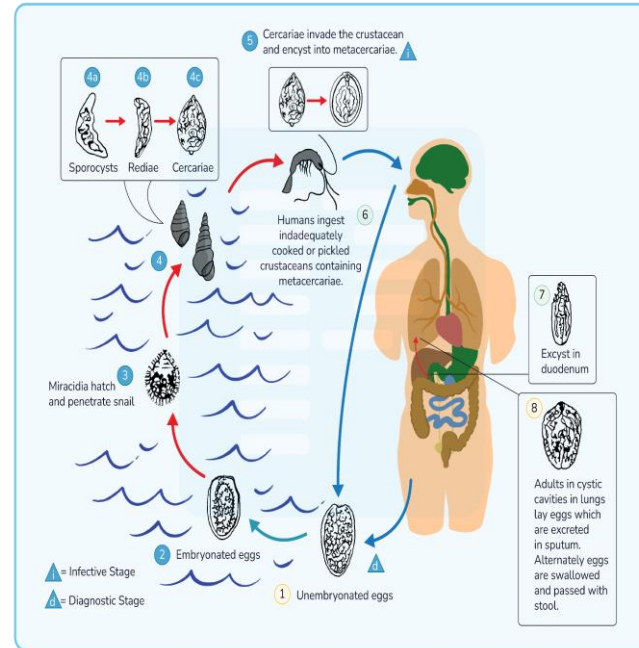
67. The following life cycle is for which of the following

- a. *Clonorchis sinensis*
- b. *Fasciola hepatica*
- c. *Fasciola buski*
- d. *Paragonimus westermani*



68. The following life cycle is for which of the following?

- a. Clonorchis sinensis
- b. Paragonimus westermani
- c. Fasciola hepatica
- d. Fasciola buski



69. The most common site of infection with echinococcus granulosus is?

- a. Brain
- b. Lungs
- c. Liver
- d. Muscles

70. Heaviest helminthic egg is which of the following?

- a. *Strongyloides stercoralis*
- b. *Ascaris lumbricoides*
- c. *Taenia saginata*
- d. *Taenia solium*

71. Which of the following is not correct about taenia solium

- a. Adults tapeworms are asymptomatic
- b. Autoinfection is seen
- c. Praziquantal plus albendazole used for multiple-ring enhancing lesions on NCCT head
- d. Eggs are not infective to man

72. Bile duct cancer can occur with which of the following?

- a. S. Mansoni
- b. Opisthorchis
- c. S. Japonicum
- d. Fasciola buski

73. Which is not correct about *Enterobius vermicularis*?

- a. Adult worm lives in caecum
- b. Eggs are planoconvex
- c. Pigs is natural host
- d. Egg detection by NIH swab test

74. The following eggs are detected in stool microscopy of a 30-year-old man from an urban slum. Which is the correct presentation of this patient?

- a. Recurrent episodes of GTCS
- b. Recurrent episodes of mucus diarrhea with iron deficiency anemia
- c. Recurrent episodes of terminal hematuria
- d. Recurrent episodes of acute cholangitis



75. Longest tapeworm in man?

- a. *Tenia solium*
- b. *Tenia saginata*
- c. *Diphyllobothrium Latum*
- d. *Echinococcus granulosus*

THANK YOU