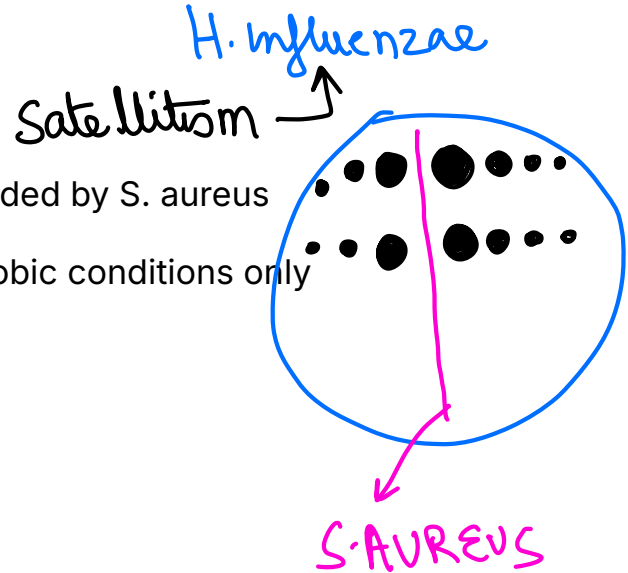


# MICROBIOLOGY

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



| Feature           | <i>Neisseria meningitidis</i> | <i>Haemophilus influenzae</i>   | <i>Streptococcus pyogenes</i>   |
|-------------------|-------------------------------|---------------------------------|---|
| Gram stain        | G+ diplococci                 | G+ coccobacilli                 | G+ cocci in chains  |
| Media             | Chocolate, Thayer-Martin      | Chocolate (needs X & V factors) | Blood agar  |
| Hemolysis         | None                          | None                            | Beta- hemolytic   |
| Special feature   | Ferments glucose & maltose    | Satellitism                     | Bacitracin sensitive → "Pyogenes = painful throat, Positive bacitracin" |
| Deficiency assoc. | C5-C9 complement deficiency   | -                               | -   |

↓

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

undulant fever  
Brucellosis

FEVER ±  
Ileocaecal lump  
? GIT TB : M. bovis



LS media

Melanin in cell wall

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

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

→ CHROMOBLAGIOMYCOSIS :

MUCORMYCOSIS : angioinvasive

Tamil Nadu  
Cauliflower  
growths on  
feet/soles

Black fungus" refers to dematiaceous fungi, which are characterized by melanin pigment in their cell wall giving them a brown to black appearance both in culture and in tissue. These fungi cause:

- Phaeohyphomycosis
- Chromoblastomycosis
- Eumycetoma

### **Common Genera of True Black Fungi**

| Clinical condition            | Common causative genera              |
|-------------------------------|--------------------------------------|
| Chromoblastomycosis           | Fonsecaea, Cladosporium, Phialophora |
| Phaeohyphomycosis             | Exophiala, Curvularia, Alternaria    |
| Eumycetoma (black grain type) | Madurella mycetomatis                |

4. Which of the following bacteria causes gamma hemolysis?

a. Group A streptococcus  $\beta$  hemolysis      No hemolysis

b. Group B streptococcus

c. Group C streptococcus

d. Group D streptococcus

ENTEROCOCCI : IE : TAVR  
Trans - Cath  
Aortic Valve  
replacement

# SHOOTING STAR



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

a. Vibrio cholerae ✓

b. Campylobacter ✓ CBS

c. Gardenella ✓ Bact. vaginosis

d. Proteus mirabilis

↳ swarming motility

Hanging drop method

TUMBLING: LISTERIA MONOCYTOGENES

|                         |   |
|-------------------------|---|
| Darting/ Shooting -star | Vibrio cholera, campylobacter jejuni, Gardnerella vaginalis |
| Swarming                | Proteus mirabilis, Proteus vulgaris                         |
| Tumbling                | Listeria monocytogenes                                      |
| Corkscrew / Spiral      | Treponema, Borrelia, Leptospira                             |
| Gliding                 | Mycoplasma, Cytophaga                                       |
| Twitching               | Pseudomonas aeruginosa, Neisseria gonorrhoeae               |
| Umbrella motility       | Listeria monocytogenes (at room temp)                       |
| Falling leaf motility   | Giardia lamblia   |

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

Legionelle pneumophila : pneumonia

b. Castanada : Brucella

c. Mannitol-yolk-polymyxin

d. Deoxycholate citrate agar

L Shigella

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 *S. AUREUS*

b. Ceftrimide agar

c. Eaton agar

d. MacConkey media  
*E. coli*

*V.A.P*  
\* *Pseudomonas AERUGINOSA*

\*  
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

\* N. meningitidis Recurrent  
MAC ↓: C5 - C9

\* C2 - C4 ↓  
SLE

IgA: ↑ : HSP, IgA nephropathy

IgA ↓ : Anaphylaxis

\* C3 ↓ : S. pneumoniae  
H. influenzae

| <b>Complement Deficiency</b> | <b>Clinical Association</b>  |
|------------------------------|--|
| C1,C2, C4 deficiency         | Immune complex diseases (e.g SLE- Like illness)                          |
| C3 deficiency                | Severe recurrent pyogenic infections (esp. S. pneumoniae, H. Influenzae) |
| C5-C9 deficiency             | Recurrent Neisseria infections ( meningitis, gonococemia)                |

The complement system is part of innate immunity and helps in:

1. Opsonization (C3b)
2. Inflammation (C3a, C5a)
3. Direct bacterial lysis (via the membrane attack complex - MAC)

#### Membrane Attack Complex (MAC)

- Formed by terminal complement components C5b, C6, C7, C8, and C9
- Function: creates a pore in the bacterial cell membrane → causes osmotic lysis
- especially effective against Gram negative bacteria, which have thin peptidoglycan walls and an outer membrane.

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?

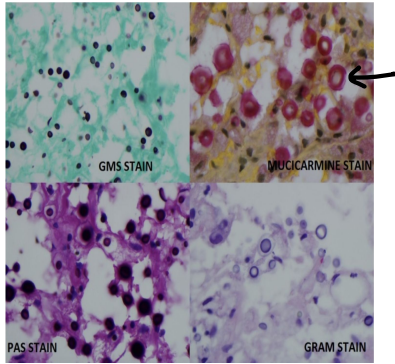
a. India ink ~~stain~~

b. Mucicarmine stain

c. Gram ~~stain~~

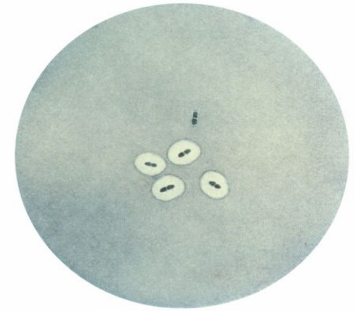
d. Silver methenamine stain

==  
CRYPTOCOCCUS  
NEOFORMANS



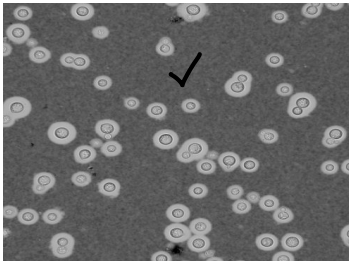
## Methods to detect capsule in microorganisms

1. Serologic- Quellung reaction ✓
2. India ink stain ✓
3. Mucicarmine stain ✓
4. Mcfadyean reaction ✓



HIV positive man presents with headache fever and nuchal rigidity. CSF shows PMN cells with low sugar and elevated protein. India ink stain of CSF is shown. Diagnosis is?

Cryptococcus b. Pneumococcus c. staphylococcus d. MTB



⇒ FISH IN STREAM : gram stain  
CAMP ↑ : SECRETORY DIARRHEA

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

School of fish  
\* *H. ducreyi*

## 11. Tyndallization 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

121°C x 15 min : BMA needle  
Reuse

160°C : HOT AIR OVEN

|   |   |  |                                      |                                      |
|---|---|--|--------------------------------------|--------------------------------------|
| Autoclave (moist heat)                      | Steam under pressure                              | 121°C 15 psi, 15-20 min                  | All microbes + spores                | Media, linens, instruments           |
| Hot Air Oven (dry heat)                     | Oxidative killing                                 | 160° C 2 hr or 170° C 1 hr               | Spores, metals, powders              | Glassware, metal instruments, oils   |
| Tyndallization (Fractional sterilization) * | Repeated boiling cycles allow spores to germinate | <u>100° C</u> for 30 min x 3 days        | Vegetative cells + germinated spores | Heat sensitive sugars, gelatin media |
| Pasteurization                              | Sublethal heating                                 | Holder 63° C 30 min or HTST 72° C 15 sec | Pathogens ( not spores)              | Milk, beverages                      |
| Inspissation *                              | Coagulation of proteins by low heat               | <u>80-85° C</u> for 30 min x 3 days      | Kills nonsporing bacteria            | Serum media, Loeffler serum slope    |

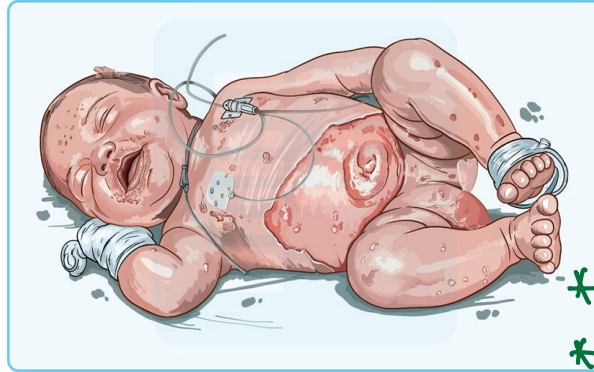
12. Antibiotic susceptibility via disk diffusion method is tested using which of the following culture media?

- a. Muller Hinton
- b. PLET
- c. PALCAM *LISTERIA*
- d. BYCE *LEGIONELLA*



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 ✓



SSSS  
(RITTER)  
S. AUREUS  
E-T-A

Exfoliative

↓  
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

↳ Capsule: Pneumococci

S. AUREUS



15. Which of the following bacteria causes gamma hemolysis?

a. Streptococcus pneumoniae

b. Streptococcus Viridans

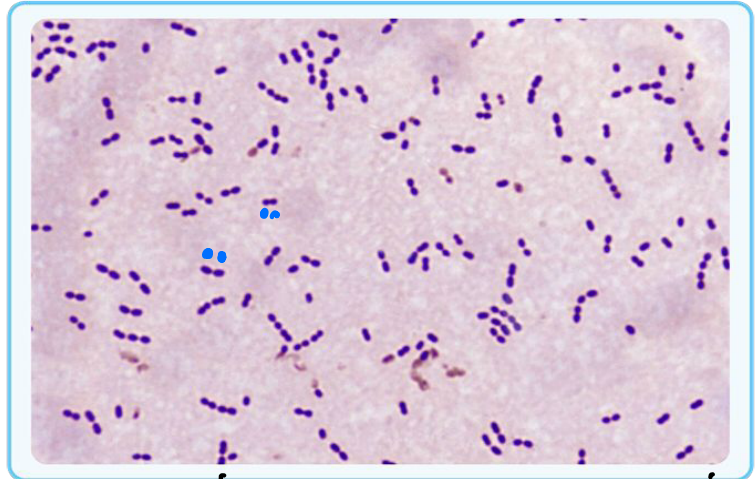
c. Staphylococcus aureus

d. Enterococcus | gpD STREPTOCOCCI

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. Inulin fermenter
- c. Optochin sensitive
- d. Grow in 6.5% NaCl

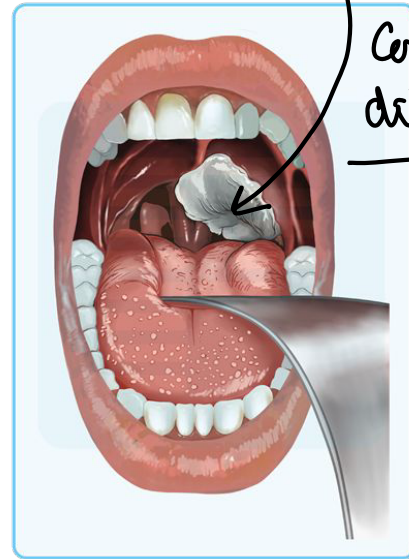
BIO ← Pneumococcus \*



Rx: CEFTRIAXONE + Vancomycin

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

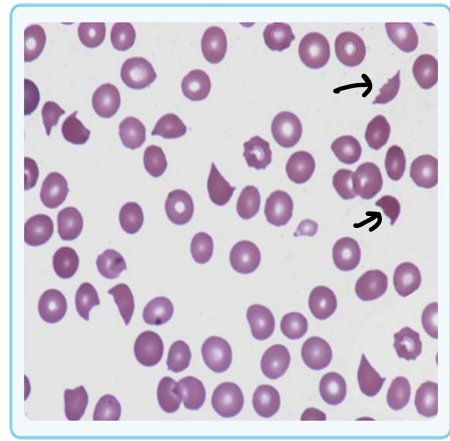


Corynebacterium  
diphtheria

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

Traveler's D



Schistocytes  
H.U.S  
E. coli O157 | EHEC  
dysentery: shiga toxin

PEM, HN+, STEROIDS

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 → acid fast character

b. Lipoarabinomannan

c. Peptidoglycan

d. Teichoic acid

| <b>Mechanism</b>                                   | <b>Function</b>  |
|--|--|
| 1. Inhibition of phagosome - Lysosome fusion       | LAM prevents the normal maturation of phagosomes into phagolysosomes by interfering with $\text{Ca}^{2+}$ signaling and inhibiting phosphatidylinositol - 3- phosphate (PI3P) generation. This allows MTB to survive within macrophage phagosomes. |
| 2. Resistance to reactive oxygen/ Nitrogen species | LAM scavenges oxygen radicals and reduces macrophage oxidative burst, helping MTB evade killing  |

## 20. Match the following

|                           |                                     |
|---------------------------|-------------------------------------|
| a. Pneumonia in alcoholic | 1. <i>Klebsiella oxytoca</i>        |
| b. Atrophic rhinitis      | 2. <i>Klebsiella pneumoniae</i>     |
| c. Donovanosis            | 3. <i>Klebsiella ozanae</i>         |
| d. Haemorrhagic colitis   | 4. <i>Klebsiella granulomatosis</i> |

- 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 ✓

*Cl. perfringens*

b. Citron bodies ✓

c. Gram positive rod with terminal spores

● — *Cl. Tetani*

d. Reverse CAMP test ✓

### **Citron bodies in Gas Gangrene**

- Seen in: *Clostridium perfringens* infection → Gas Gangrene (Myonecrosis)
- Location: Necrotic muscle tissue
- Appearance:
  - Large, oval or spherical, eosinophilic inclusion bodies within degenerating muscle fibers .
  - formed due to coagulation necrosis and protein denaturation

✓  
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

Pseudomembranous colitis

\* Cl. difficile

Screening: EIA for GDH

IOC: PCR for Toxin A/B

Rx: Fidaxomicin / Vancomycin

| <b>Option</b>                      | <b>Why not used as initial screening</b>                                    |
|------------------------------------|---|
| (b) Stool ELISA for toxins A/B     | Moderate sensitivity → may miss cases if toxins degrade in stool.           |
| (c) Stool PCR for toxins A/B genes | Expensive and detects colonization even without active disease              |
| (d) Stool culture                  | Time - consuming (48 - 72 h) and not specific for toxin - producing strains |

## Bordetella PERTUSSIS

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

FISH in STREAM



Comma A  
shaped  
Gram  $\ominus$

- The image shows comma shaped bacteria which is a gram negative and strict aerobe ( *Vibrio cholerae*).

- **COINS + *Vibrio cholerae***

**Catalase**

**Oxidase**

**Indole**

**Reduce Nitrate to nitrites,**

**Sucrose fermenter**

**String test 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

↑ICP

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 rare
- b. Streptococcus agalactiae M/C
- c. Streptococcus pneumoniae
- d. Acinetobacter

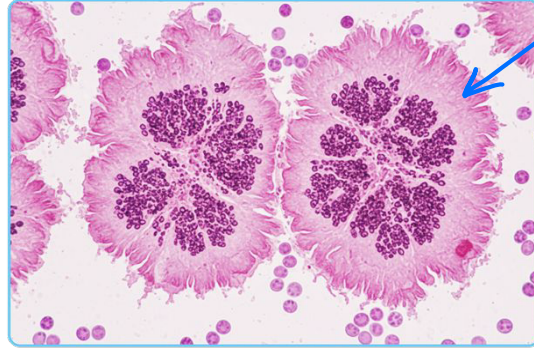
28. A 70-year-old man presents with high grade fever and SOB. CXR shows multi-lobar pneumonia. Sputum culture shows colonies on BYCE media. Diagnosis is?     

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

buffered yeast  
charcoal extract

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?

SUN BURST APP



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

GBS

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

a. Campylobacter jejuni

BACTERIA

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

MYALGIA, petechiae

b. Leptospirosis

c. Scrub typhus

Eschar

d. HFMD

RASH : Coxsackievirus A

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

→ SCRUB TYPHUS

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

✓  
difficult to grow!

C.O.N.S = PVE

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

SCRUB TYPHUS

Inf. Mononucleosis: EBV

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

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

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

POST Transplant infection

\*

\* HS

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

→ GRAFT FAILURE

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 **HIV**

b. Filo virus

c. Bunya virus

d. Matona virus **RUBELLA**

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

a. Castleman disease ✓ 

b. Primary effusion lymphoma ✓

c. Oral black hairy tongue → EBV

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 → SHINGLES: VZ
- 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 PCR

c. Nipah virus

d. Ebola virus



Rash palmo Orles

1. 2° syphilis
2. Rickettsial
3. HFMD
4. Monkey Pox

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~~

Condyloma lata

CHILD

1° : FTA-ABS

2° "

\* Neurosyphilis : CSF - VDRL

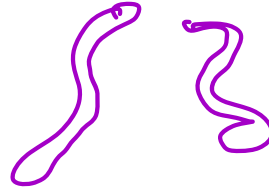
45. A **60-year-old diabetic patient** presents with nasal congestion and facial pain. KOH mount shows septate hyphae with **acute angle branching**. Which of the following is the most likely organism?

a. Mucor →

b. Aspergillus

c. Blastomyces

d. Chromoblastomycosis



MUCOR



ASPERGILLUS



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

a. HAV

b. HBV

c. HCV

d. HDV

→ chronic hepatitis : MAX CASES , done particle / australian antigen  
→ Tendency of ch. hepatitis  
↳ 55-60 nm  
↳ 42nm

CIRRHOSIS: MCE : NAFLD

47. Comment on the diagnosis?

a. Herpes zoster

DERMATOMAL DISTRIBUTION

b. Molluscum contagiosum

c. Impetigo PUS

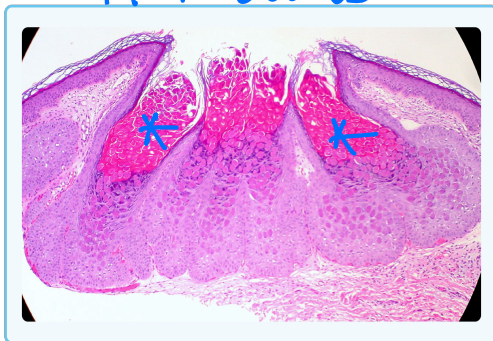
d. Chicken pox



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

fungal infection of nails



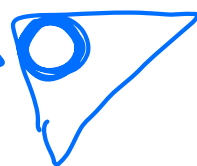


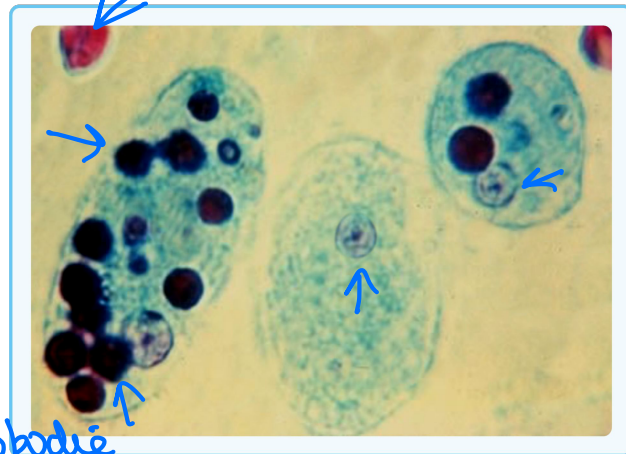
Molluscum  
Contagiosum  
\* Topical TCA

HERPES simplex - 1  
2  
Acyclovir

| <b>Treatment Option</b> | <b>Type</b>      | <b>Indication/ use</b>                              |
|-------------------------|------------------|---|
| Curettage               | Physical         | First - line in most cases; quick lesion removal    |
| Cryotherapy             | physical         | Older children, adults, or localized lesions        |
| Trichloroacetic acid    | Chemical topical | Destructive, useful in genital or resistant lesions |
| Cantharidin             | Chemical topical | Painless blistering agent; used in pediatric cases  |
| Imiquimod               | Immunomodulator  | Recalcitrant, genital, or immunocompromised cases   |
| Topical retinoids       | Keratolytic      | Mild facial lesions; alternate option               |
| Cimetidine (oral)       | Immune modulator | Pediatric use; limited evidence                     |

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 



pseudopodie

|   |   |
|---|---|
| A) Mature cyst is quadrinucleate                                | Infective form; contains 4 nuclei in mature stage   |
| B) Trophozoite is infective form transmitted by feco-oral route | Cyst not trophozoite is infective transmission via fecal-oral ingestion of quadrinucleate cysts |
| C) Trophozoite shows gliding motility                           | Motility with finger-like pseudopodia (active, progressive directional)                         |
| D) Leading extraintestinal site is the liver                    | Amoebic liver abscess is the most common extraintestinal manifestation                          |



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

↓  
lateral flow Test  
on CSF sample

β-1,3 glucan Test  
IFI  
- Candide - C  
- Aspergillus - A  
- P. JIROVECII - P

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

a. Clostridium perfringens

GAS GANGRENE

b. Streptococcus pyogenes

cellulitis

→ necrotising fasciitis

c. Staphylococcus aureus

Bullous impetigo

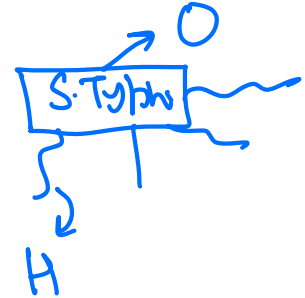
d. Pseudomonas aeruginosa

VAP

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

ENTERIC FEVER



Widal

- O > 1:100
- H > 1:200

| Feature     | Enriched Media                             | Enrichment Media   |
|-------------|--|--|
| Purpose     | Supports growth of fastidious organisms    | Selectively enhances growth of desired pathogen from a mix |
| Function    | Adds nutrients to help organisms grow      | inhibits unwanted microbes, allowing target to overgrow    |
| Composition | Basic media + nutrients (e.g. blood serum) | liquid media + inhibitors or selective factors             |
| Examples    | Blood agar<br>Chocolate agar               | Selenite F broth (for salmonella)<br>Tetrathionate broth   |

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

a. Ig M Anti Hbc — acute

b. Ig G Anti Hbc — chronic

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

Staph Aureus

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

a. ~~Echinococcus granulosus~~

H. CYST: CASONI REACTION

b. Trichinella spiralis



c. Necator americanus

HOOK WORM

d. Trichuris Trichura



barrel shaped eggs

**56. MC viral hepatitis causing mortality in pregnancy?**

a. HAV

b. HBV

c. HEV

d. HDV

← FHF: 30% during pregnancy

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

\* MADURA FOOT

S. AUREUS

CAULIFLOWER GROWTH

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

a. Blastomycosis

↳ COPPER Penny bodies

b. Aspergillus

c. Sporotrichosis

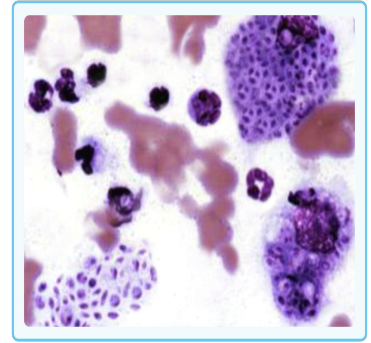
→ ROSE GARDNER disease, THORN injury

d. Chromoblastomycosis

✓ ↘ THORN

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



SPOROTRICHOSIS

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 → *Kale Azor*

b. Galactose lectin antigen

c. HRP-2 antigen

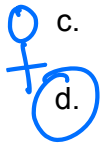
d. 200KD Ag and OG4C3

*FALCIPARUM) CEREBRAL  
MALARIA*

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61. Parasites found in urine are all except?

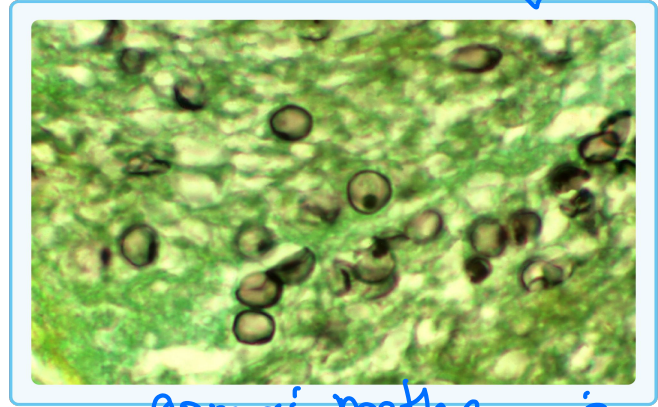
- a. Schistosomiasis **BLADDER**
- b. Wucheria bancrofti **Lymphatic**
- c. Trichomonas vaginalis
- d. Trichinella **L MUSCLES**



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

↓  
Pneumococcus



gomori methenamine stain  
p. JIROVECI

63. Parasites that are transmitted vertically are all except?

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

TORCH

↳ stool

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

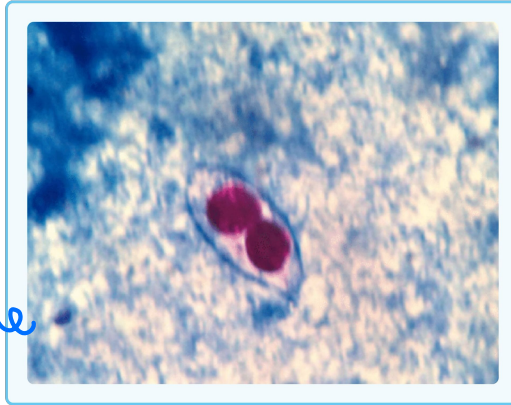


c. Isospora

d. Microspora



Nitrozanole



TMP-SMX

## Differential clues

| Parasite            | Shape/ Size                                   | Staining   | Key differentiating point       |
|---------------------|---|--|---------------------------------|
| Cryptosporidium     | Round 4-6 $\mu\text{m}$                       | small bright red dots  | Tiny, on surface of enterocytes |
| Cyclospora          | Round, 8-10 $\mu\text{m}$                     | variable acid-fastness   | Autofluorescent (blue-green)    |
| Cystoisospora belli | Oval, 25-30 $\mu\text{m}$ , 2 sporocysts      | uniformly red ovoid  | largest coccidian oocyst        |
| microsporidium      | Tiny spores (1-2 $\mu\text{m}$ ), not oocysts | not acid fast, best seen with modified trichrome stain (pink spores with red filament) | Has polar filament              |

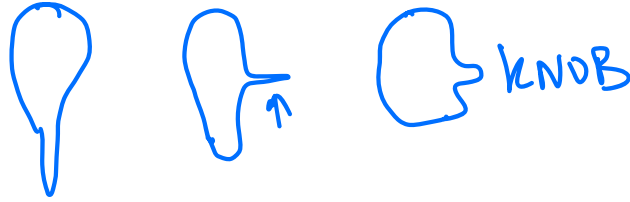
65. Urine microscopy showing eggs with lateral spine is a feature of?

a. ~~S. Hematobium~~

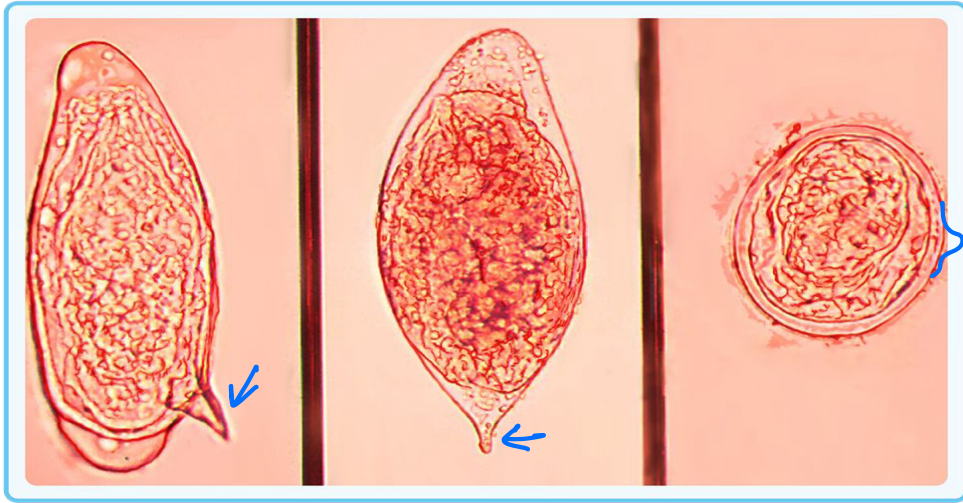
b. S. Mansoni

c. S. Japonicum

d. ~~E. Nana~~



TSH  
=  
Schistome Hematobium



Sm

SH

SJ

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

a. Ancylostoma duodenale ✓

b. Enterobius vermicularis ✓

c. H. Nana ✓

d. Clonorchis sinensis



CHOLANGIO CARCINOMA

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

a. Clonorchis sinensis

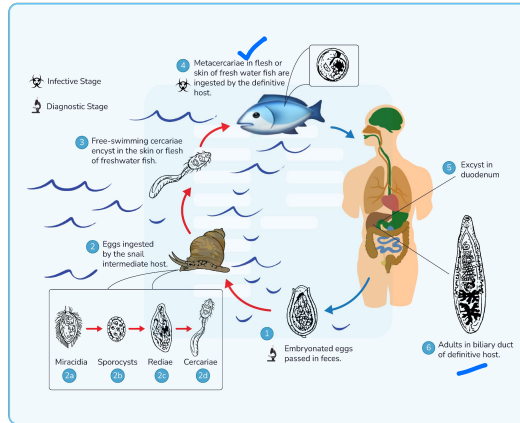
b. Fasciola hepatica

LIVER

c. Fasciola buski

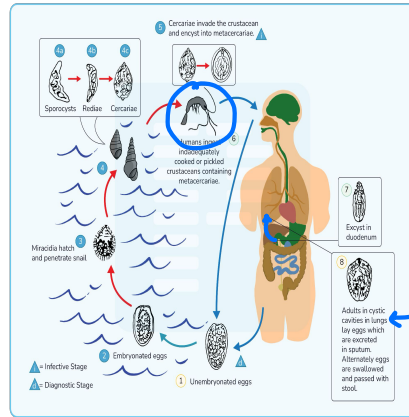
d. Paragonimus westermani

lung FWIKES



## 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?

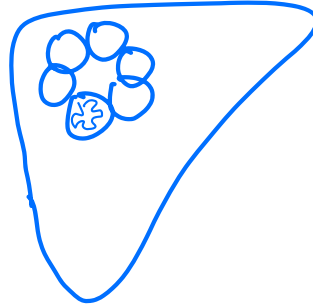
a. Brain NCC

b. Lungs

c. Liver

d. Muscles

H CYSTS



**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 +

+ NCC

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

Cholangiocarcinoma

1. Clonorchis sinensis
2. Opisthorchis

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

a. Adult worm ✓ lives in caecum

b. Eggs are ✓ planoconvex



c. Pigs is natural host



T. solium

d. Egg detection ✓ by NIH swab test

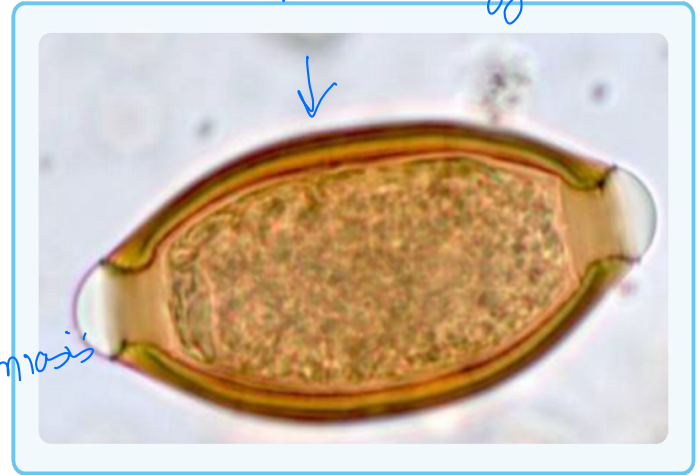




74. The following eggs are detected in stool microscopy of a 30-year-old man from an urban slum. Which is the correct presentation of this patient?

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

*Schistosomiasis*



*TRICHURIS*

**75. Longest tapeworm in man?**

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

**THANK YOU**