

**Directions: Questions (1-28) Circle the one best answer**

- C 1. Which of the following is the earliest sign that a patient is failing his combination antiviral therapy for HIV?  
(A) Decreased CD4 count  
(B) Increased frequency of genital herpes  
(C) Increased viral load  
(D) Weight loss, fatigue and myalgia
- B 2. A 20-year-old male presents with acute epididymitis. What is the most common organism causing this condition?  
(A) Gonorrhea  
(B) Chlamydia  
(C) Mycoplasma  
(D) Syphilis
- B 3. A 70-year-old male with BPH, have difficulty with urination. A foley catheter placement was unsuccessful and a suprapubic catheter is placed. 2 days later, he develops fever with chills and urine gram stain shows gram-positive cocci and gram-negative rods. Which of the following antibiotic should be started initially?  
(A) Ceftazidime  
(B) Piperacillin-tazobactam  
(C) Bactrim  
(D) Aztreonam
- C 4. A 30-year-old male is admitted with first episode of endocarditis. A small vegetation is seen on tricuspid valve. The blood culture is positive for methicillin sensitive Staph. aureus. What is the appropriate treatment.  
(A) 4 week course of vancomycin + gentamicin  
(B) 4 week course of nafcillin + gentamicin  
(C) 2 week course of nafcillin + gentamicin  
(D) 4 week course of ceftriaxone
- C 5. A 40-year-old male has a fight with friends in a bar. He punches several people on their mouths. 2 days later develops hand pain, knuckle erythema and swelling. What is the best initial antibiotic therapy?  
(A) Ciprofloxin  
(B) Doxycycline  
(C) Amoxicillin-Clavulanate  
(D) Clindamycin

- B 6. A 24-year-old male student is found to have positive HIV antibody test. Other blood tests reveal a CD4 count of 25, negative VDRL, negative toxoplasma serology and negative Hepatitis B serology. His PPD is 6 mm and Chest x-ray is negative. Besides Hepatitis B, Pneumococcal, Influenza & H. influenza type b vaccines, you will now recommend :
- (A) Antiretroviral therapy + INH
  - (B) Antiretroviral therapy + Bactrim + Azithromycin + INH
  - (C) Antiretroviral therapy + Bactrim
  - (D) Antiretroviral therapy + Azithromycin

- B 7. A 47-year-old homeless person from New York City is admitted to the hospital with active pulmonary tuberculosis. He is started on INH, Rifampin, Pyrazinamide & Ethambutal. One month later sensitivity results show organism to be sensitive to all the 4 drugs. His sputum smear is negative for AFB now. At this time you will now recommend:
- (A) Discontinue Ethambutal & continue other 3 drugs for 5 more months
  - (B) Discontinue Ethambutal and Pyrazinamide after one month and continue INH & Rifampin for 4 more months.
  - (C) Continue all 4 drugs for 5 more months
  - (D) Discontinue both Ethambutal and Pyrazinamide now and continue INH and Rifampin for 5 more months

- C 8. A 22-year-old female present with 6 months history of fatigue, arthralgias and generalized aches and pain. She was treated with Doxycycline for 21 day for early Lyme disease about one year ago. The western blot for lyme disease shows 2 of the 3 bands are positive for IGM and 6 out of 10 bands are positive for IGG. Based upon the above information, you will now recommend:
- (A) Oral Doxycycline for 60 days
  - (B) IV Ceftriaxone for 21 days
  - (C) No therapy
  - (D) IV Ceftriaxone for 60 days

- C 9. A 22-year-old female comes to the emergency room with one day history of high fever, sore throat and difficulty & pain on swallowing. The physical examination shows a temperature of 102 F, drooling of oral secretions and erythema of pharynx and tonsils. The x-ray of the neck is normal. Based upon this information, you will now recommend :
- (A) Throat culture and discharge with oral penicillin
  - (B) Admit patient to a regular floor and start IV ceftriaxone after doing throat and blood cultures
  - (C) Admit patient to ICU, start IV ceftriaxone and stat ENT consult for fiberoptic naso-pharyngoscopy
  - (D) Throat culture and discharge with oral cefuroxime.

D 10. A 28-year-old intravenous drug user is admitted because of fever, right sided pleuritic chest pain, cough and hemoptysis. Physical examination reveals engorged neck veins with prominent V waves, rales and a pleural rub at the right lung base, grade 1/6 pansystolic murmur heard best over left sternal border which increases with inspiration. Chest x-ray reveals multiple nodular densities in both lung fields, some with cavitation. Patient is started on nafcillin and gentamicin after blood cultures are drawn. 4 days later patient is still febrile and chest x-ray shows new nodular densities. Blood and sputum cultures are positive for methicillin sensitive Staph. aureus. Based upon the above information, you will now recommend:

- (A) Discontinue present antibiotics and start vancomycin
- (B) Add vancomycin to present therapy
- (C) Continue present therapy and repeat chest x-ray in 1 weeks
- (D) Surgical consultation

C 11. A 32-year-old HIV + homosexual male is admitted because of right sided weakness, fever and headache. A CT scan of the head reveals 2 ring-enhancing lesions. His CD4 count is 30/uL. Based upon the above information, you will now recommend:

- (A) Spinal tap
- (B) Brain biopsy
- (C) Start sulfadiazine and pyrimethamine and repeat CT scan in 2 weeks.
- (D) Start amphotericin B

C 12. A 19-year-old boy presents because of fever and multiple skin abscesses. He gives history of recurrent skin abscesses and episodes of cervical lymph node enlargement with drainage since childhood. He has received multiple courses of antibiotics in the past for these infections. His brother also has similar past medical history

Select the diagnostic test, which will most likely reveal the cause of recurrent infections in this patient:

- (A) Serum protein electrophoresis
- (B) Serum total hemolytic complement level
- (C) Blood nitroblue tetrazolium test
- (D) Skin testing for delayed hypersensitivity

*Dx: Chronic Granulomatous Disease*

C 13. A 55-year-old man is admitted because of fever and chills. He is receiving chemotherapy for an abdominal lymphoma and had a Hickman catheter inserted few weeks ago. The exit site of Hickman catheter shows some erythema and tenderness. There is no evidence of tunnel infection.

Select the best therapy after doing blood cultures:

- (A) Vancomycin + gentamicin and removal of catheter
- (B) Ciprofloxacin + ceftazidime
- (C) Vancomycin + gentamicin
- (D) Ceftazidime + gentamicin

D

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A 26-year-old male is admitted to the hospital with the history of fever and marked weakness of 5 days duration. He is known to be HIV antibody positive for the last one year. His CD4 cell count 6 months ago was 350/uL and he was started on AZT 500 mg daily. His hematocrit 3 months ago was 36%. Physical examination reveals BP 140/76, pulse 100/ minute and marked pallor. Examination of stool for occult blood is negative.

Laboratory Studies:

CBC..... Hb 5 g/dl, Hct 15%, MCV 95, reticulocyte index 1%  
WBC 3500/ uL, Platelet count 250000/uL

BUN/Cr, LDH..... Normal

CD4 cell count..... 320/uL

Chest X-ray..... Normal

Bone marrow..... red cell aplasia with giant pronormoblasts

Based upon the above information, the most likely diagnosis is:

- (A) AZT toxicity
- (B) Disseminated Histoplasmosis
- (C) Disseminated Mycobacterium-avium infection
- (D) Parvovirus infection

A

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You are asked to evaluate a 35 -year-old female patient with history of mental confusion, fever, skin rash and diarrhea of 3 days duration. She was recently diagnosed to have carcinoma of the right breast and underwent right modified radical mastectomy followed by breast reconstruction using silicone implant 5 days ago. Physical examination reveals BP90/60, pulse 110/minute, temp. 101 F, mental confusion and diffuse erythematous rash over the whole body. The surgical incision site shows erythema and purulent exudates.

Laboratory Studies:

CBC..... Hb 13.5 g/dL, HCT 38%, WBC 8500/uL

Serum calcium..... 7.5 mg/dL ( nl : 9-10.5 mg/dL )

Albumin..... 4.2 g/dl

Blood Cultures..... negative at 48 hours

Based upon the above information you will now recommend :

- (A) Intravenous fluids, IV nafcillin or vancomycin + clindamycin & removal of breast implant
- (B) Biopsy of skin lesion
- (C) Intravenous Ampicillin & Gentamicin
- (D) Stools for ova & parasites, culture and C. difficile toxin

- B 16. A 70-year-old is brought to the emergency room following abrupt onset of fever, stiff neck, severe headache, mental confusion and photophobia. Lumber puncture is done and CSF examination shows WBC count of 1800/uL (95% neutrophils), glucose of 18 mg/dL, protein of 80 mg/dL and gram stain is positive for many lancet-shaped gram-positive cocci in pairs.  
The best course of action now should be:  
(A) IV Ceftriaxone  
(B) IV Ceftriaxone + Vancomycin + Dexamethasone  
(C) IV Ceftriaxone + Ampicillin  
(D) IV Penicillin G
- C 17. You are asked to evaluate a 16-year-old boy who was admitted to the hospital twice in the last 6 months with meningococcal meningitis. Both episodes were treated with IV penicillin G.  
Select the test most likely to provide useful information as to the cause of his recurrent meningitis :  
(A) Serum protein electrophoresis  
(B) Blood nitroblue tetrazolium test  
(C) Serum total hemolytic complement (CH50)  
(D) CT scan of head
- A 18. A 20 -year-old sexually active female presents with fever, dysuria and sore throat. She has h/o multiple sexual partners. Examination shows evidence of mucopurulent cervicitis & pharyngitis.  
After obtaining necessary cultures, you will recommend treatment with :  
(A) Ceftriaxone IM, followed by doxycycline  
(B) Doxycycline  
(C) Ciprofloxacin  
(D) Ciprofloxacin followed by doxycycline
- C 19. A 22-year-old woman with many sexual partners presents with one week history of dysuria & urinary frequency. Urinalysis shows many leukocytes but no bacteria. The most appropriate therapy for this patient should be :  
(A) Ampicillin  
(B) Trimethoprim/sulfamethoxazole  
(C) Doxycycline  
(D) Ceftriaxone

C 20. A 24-year-old sexually active female consults you because of low-grade fever and lower abdominal pain of 3 days duration. Physical examination reveals a temperature of 100 F and slight lower abdominal tenderness without rebound. On pelvic examination she is found to have evidence of mucopurulent cervicitis, cervical motion tenderness and adnexal tenderness. Cultures of the cervical secretions are pending.

What is the most appropriate antibiotic therapy for this patient?

- (A) Doxycycline
- (B) Erythromycin
- (C) Ceftriaxone followed by doxycycline
- (D) Ampicillin

C 21. A 26-year-old homosexual man is admitted to the hospital with fever, dry cough and dyspnea of 2 days duration. Physical examination shows a temperature of 102 F and crackles over both lung bases.

Laboratory studies:

CBC.....Hb 11.5 g/dL, HCT 36%, WBC 6500/uL, platelet count 62000/uL

LDH..... 400U/L (nl: 60-100)

Chest x-ray..... Bilateral interstitial infiltrates

Blood gases..... PO2 60 mm Hg, PCO2 36 mm Hg. pH 7.44

Sputum..... Methenamine silver stain of sputum is positive for Pneumocystis carinii cysts

Based upon the above information you will now recommend:

- (A) Pentamidine
- (B) Trimethoprim-sulfamethoxazole
- (C) Trimethoprim-sulfamethoxazole plus prednisone
- (D) Erythromycin

D 22. A 70-year-old man is admitted to the hospital because of a 2-week history of low-grade fever, weakness, night sweats, arthralgias and low back pain. 5 weeks ago he had cystoscopy done for evaluation of hematuria. Physical examination reveals a temperature of 101 F and an ejection systolic murmur heard best in the aortic area with radiation to carotids. 3 sets of blood cultures are positive for Enterococcus. Patient had a severe anaphylactic reaction to penicillin 4 years ago.

Based upon the above information you will now recommend:

- (A) Cefazolin plus gentamicin for 4-6 weeks
- (B) Ciprofloxacin for 4-6 weeks
- (C) Vancomycin for 4-6 weeks
- (D) Vancomycin plus gentamicin for 4-6 weeks

- D 23. A 28-year-old HIV positive male is admitted to hospital with fever, lethargy, headache and mental confusion. CT scan of the head with contrast is normal. Lumbar puncture shows WBC 80/uL (95% lymphocytes & 5% neutrophils), glucose 20 mg/d & protein of 110 mg/dL  
Most likely pathogen responsible for his illness is :  
(A) *Toxoplasma gondii*  
(B) *Listeria monocytogenes*  
(C) CMV  
(D) *Cryptococcus neoformans*
- C 24. A 24-year-old woman presents with history of malodorous vaginal discharge of 3 weeks duration. Vaginal examination shows homogeneous, whitish discharge, which smoothly coats the vaginal mucosa. The vaginal pH is 5.6. The addition of 10% KOH to discharge causes a fishy odor and wet mount preparation shows presence of clue cells  
Based upon this information, you will recommend the following treatment:  
(A) Ampicillin  
(B) Sulfonamide containing vaginal cream  
(C) Oral or vaginal metronidazole or clindamycin  
(D) Ceftriaxone followed by doxycycline
- C 25. A 28-year-old woman is bitten by a bat. The bat is not captured. She has never received rabies vaccine.  
You should now recommend:  
(A) Rabies Vaccine  
(B) Human rabies immune globulin  
(C) Rabies vaccine plus rabies immune globulin  
(D) No therapy
- C 26. A 20-year-old sexually active male patient consults you because his girlfriend was recently diagnosed to have gonococcal mucopurulent cervicitis. He denies any symptoms and physical examination is unremarkable.  
After obtaining appropriate cultures you will recommend:  
(A) No treatment until culture results are back  
(B) Ceftriaxone  
(C) Ceftriaxone followed by doxycycline  
(D) Ciprofloxacin
- B 27. A 24-year-old male presents with fever and headache 2 weeks after returning from a vacation in Long Island. Physical examination reveals mild nuchal rigidity and a left sided facial palsy.  
Based upon the above information, the most likely diagnosis is :  
(A) Babesiosis  
(B) Lyme disease  
(C) Viral meningitis

28. A 30-year-old male patient who is undergoing treatment for acute lymphatic leukemia is admitted to hospital with fever. Leukocyte count is 330/ul. Clinical examination shows no obvious source of fever. He is started on ticarcillin, tobramycin and vancomycin after obtaining blood cultures. After 7 days patient continues to have fever with chills and blood cultures are negative. Chest x-ray shows no infiltrates.

At this point you will recommend:

- (A) Stop all antibiotics and reculture
- (B) Add ceftazidime to present regimen
- (C) Add amphotericin B to the present regimen
- (D) Add erythromycin to the present regimen

**Directions :Items 29-50 are true and false questions. Mark T for statements that are true and F for statements that are false.**

29-31 A 22-year-old male was found to be HIV positive on routine testing. He is asymptomatic and physical examination reveals no abnormality.

Initial assessment of this patient should include:

- T (29) CD4 lymphocyte count & hepatitis B serology
- T (30) Pneumococcal and Haemophilus influenza type b vaccine
- T (31) PPD skin testing and VDRL

32-34 The true statements regarding primary and secondary prophylaxis in HIV disease include:

- T (32) Primary prophylaxis for toxoplasma is indicated for CD4 count <100 and patient has positive toxoplasma antibody
- T (33) Primary prophylaxis for PCP can be discontinued if CD4 count is >200 for 3 months
- T (34) Primary prophylaxis for MAC is indicated if CD 4 count is <50

35-37 Asymptomatic bacteriuria should be treated in the following situations

- T (35) Prior to urological procedures
- T (36) In pregnancy
- F (37) In patients > 70 years old

38-41 Which of the following are the manifestations of Lyme disease?

- T (38) Unilateral or bilateral facial paralysis
- F (39) Erythema nodosum
- T (40) Heart block
- T (41) Aseptic meningitis



42-46 Which of the following statements are true about patients with M. tuberculosis

- F (42) M. tuberculosis is rare in HIV positive patients with CD4 cell count of >200
- T (43) HIV positive patients with PPD > 5 mm should be given INH prophylaxis
- T (44) Nursing home patients with PPD > 10 mm should be given INH prophylaxis
- T (45) HIV positive patients who are PPD negative should be given INH prophylaxis if they have recent contact with an active case
- T (46) Patients recently exposed to INH resistant tuberculosis should receive prophylaxis with Rifampin if the PPD > 5 mm

47-50 Which of the following statements are true about malignant otitis externa

- T (47) Pseudomonas aeruginosa is the causative organism
- T (48) Diabetes mellitus is the most common underlying disorder
- T (49) Surgical debridement, topical ear drops and intravenous antibiotics are required for treatment
- T (50) Osteomyelitis of the temporal bone is common

## Answers to Infectious Disease Questions

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|-----|---|-----|---|
| 1.  | C | 26. | C |
| 2.  | B | 27. | B |
| 3.  | B | 28. | C |
| 4.  | C | 29. | T |
| 5.  | C | 30. | T |
| 6.  | B | 31. | T |
| 7.  | B | 32. | T |
| 8.  | C | 33. | T |
| 9.  | C | 34. | T |
| 10. | D | 35. | T |
| 11. | C | 36. | T |
| 12. | C | 37. | F |
| 13. | C | 38. | T |
| 14. | D | 39. | F |
| 15. | A | 40. | T |
| 16. | B | 41. | T |
| 17. | C | 42. | F |
| 18. | A | 43. | T |
| 19. | C | 44. | T |
| 20. | C | 45. | T |
| 21. | C | 46. | T |
| 22. | D | 47. | T |
| 23. | D | 48. | T |
| 24. | C | 49. | T |
| 25. | C | 50. | T |