



Diploma Degree examination in: Tropical Medicine & Infectious Diseases

Date: 27/4/2022
Number of questions: Three

Time Allowed: Three hours
Total Assessment Grades 180 Marks

الورقة الثانية

Infectious Diseases

All questions must be answered

I) Case scenario (30 marks)

A 15 - year - old schoolboy attended his GP after developing a sore throat and fevers. He had been finding it increasingly uncomfortable to swallow and was struggling to eat or drink anything He reports that his breathing is comfortable but he is unable to swallow anything, even saliva. He is able to speak but his voice is quite odd – almost as though he has something stuck in his throat. On examination you see bilaterally enlarged tonsils coated with pus. You notice some petechiae on the hard palate. Although his breathing is noisy, there is no stridor. There is tender enlargement of the cervical lymph nodes. Hemoglobin 13.7 g/dL, white blood cell count 12,500/dL, neutrophil count 5,900 /dL, lymphocyte count 8,500/dL, platelet count 139,000 /dL The hematologist reports atypical lymphocytes on blood film.

1-What is the most probable diagnosis? (10 marks)

2-What is the differential diagnosis & investigation of this condition? (15 marks)

3- Which antibiotic should be avoided in this case? (5 marks)

II) MCQ (80 marks) (2 marks each)

Choose the single best answer for the following questions:

1. A 12- year- old boy presents to the Fever hospital with fever, mild splenomegaly, and rose spots.

What is the single most confirmatory diagnostic test for his case?

- A. Blood culture
- B. CBC
- C. Urine analysis
- D. Widal test



2. An outbreak of diarrhea occurred in a small village in India. The diarrhea was noted to have a short incubation period and was characterized by being large volume, watery and with a fishy smell. Some patients described it as being similar to rice water. Many of the cases became dehydrated.

Which of the following is the most probable causative organism?

- A. Clostridium difficile
- B. Entamoeba histolytica
- C. Escherichia Coli
- D. Vibrio cholera

3. Which of the following is used to treat Paragonimus Westermani?

- A. Albendazole
- B. Metronidazole
- C. Praziquantel
- D. Suramin

4. A 16-year-old schoolgirl comes to the emergency room with painful abdominal cramps. She has been passing bloody stools for the last week.

Which of the following protozoons can cause these symptoms?

- A. Balantidium coli
- B. Entamoeba coli
- C. Entamoeba histolytica
- D. Giardia lamblia

5. A 58-year-old dairy farm owner is admitted to the fever hospital with fever of three weeks duration accompanied by rigors, bone aches, back pain and profuse sweating. Abdominal palpation revealed hepatomegaly and splenomegaly with pain. He denies travel abroad. The CBC was normal, Widal test negative, Brucella agglutination titer 1: 640, Tuberculin test negative.

Which of the following is the drug of choice for treatment of his infection?

- A. Ampicillin
- B. Ceftriaxone
- C. Doxycycline
- D. Norfloxacin



6. A 27-year-old pregnant woman has been admitted for cough, fever and night sweats. Her tuberculin skin test is positive and confirmed by PCR.
Which of drugs should be totally AVOIDED in her treatment regimen?
- A. Isoniazid
 - B. Pyrazinamide
 - C. Rifampicin
 - D. Streptomycin
7. **Each of the following parasites is transmitted by mosquitoes EXCEPT?**
- A. Leishmania donovani
 - B. Plasmodium falciparum
 - C. Plasmodium vivax
 - D. Wuchereria bancrofti
8. A 25-year-old male goat shepherd is admitted with fever, cough and chest pain. On examination temperature is 38.8C, there is an area of diminished breath sounds, and dullness to percussion at the upper lobe of the right lung. CBC revealed leukocytosis with neutrophilia, and eosinophilia. A plain chest X-ray was remarkable for a water lily sign. **Which of the following treatments is suitable for this patient?**
- A. Acyclovir
 - B. Albendazole
 - C. Amphotericin B
 - D. Ceftriaxone
9. A 49- year-old gentleman presents to the infectious diseases clinic with fever and chills lasting for a week. All investigations were performed with no indication of a specific cause. The patient mentioned he had traveled to Central Africa 9 years ago and had contracted malaria for which he had taken a course of chloroquine and recovered. Blood films were taken revealing malarial parasites. A relapse of malaria was the final diagnosis. **Which two Plasmodium species are characterized by the sporozoite remaining dormant in the liver?**
- A. P. falciparum and P. malariae
 - B. P. falciparum and P. ovale
 - C. P. ovale and P. vivax
 - D. P. malariae and P. vivax



10. A 34-year-old man who has recently returned from Southeast Asia is investigated for abdominal cramping, anorexia and chronic diarrhea. He has also recently developed a blood-streaked cough. Stool microscopy reveals *Strongyloides stercoralis* larvae.

What is the most appropriate treatment?

- A. Albendazole
- B. Ciprofloxacin
- C. Diethylcarbamazine
- D. Praziquantel

11. During a civil war, a 21-years-old lonely mother gives birth to her first baby without medical supervision. One week later, he exhibits irritability, poor feeding, rigidity, facial grimacing, and severe spasms with touch.

Which of the following is NOT TRUE about this case?

- A. Fatality is about 10%
- B. Immunization of the pregnant mother can prevent it
- C. It is diagnosed clinically as no specific test is available
- D. It is mostly a case of neonatal tetanus

12. A 44-year-old woman from Ukraine presented with fever, sore throat and neck swelling. On examination temperature was 39.1°C, pharynx showed extensive exudates, and there was marked cervical lymphadenopathy.

Diagnosis and the start of treatment of is usually made on the basis of?

- A. Clinical presentation
- B. Culture from the lesion
- C. PCR testing
- D. Testing for toxin production

13. Which type of plague is the most serious form of the disease and can be spread from person to person?

- A. Bubonic plague
- B. Pneumonic plague
- C. Septicemic plague

14. Which of the following statements regarding the anthrax vaccine and adverse effects (AE) is true?

- A. Acne vulgaris is common
- B. Chronic fever occurs in 60% of cases
- C. Joint problems are the most common AE
- D. No proven long-term AE



15. Which of the following infections is a zoonosis?
- A. Cholera
 - B. Leprosy
 - C. Leptospirosis
 - D. Syphilis
16. A 35-year-old man from Papua New Guinea presents with multiple ulcers on his legs. The ulcers are deep with well-defined edges and indurated bases with a yellowish slough. You notice a deformity of his legs in the form of anterior bowing of the tibia.
- Which of the following has proved to be successful in eradicating this disease?
- A. Azithromycin
 - B. Levofloxacin
 - C. Metronidazole
 - D. Vancomycin
17. Which of the following is the most commonly associated with sepsis?
- A. *Candida albicans*
 - B. Coagulase-negative staphylococci
 - C. *Escherichia coli*
 - D. *Pseudomonas aeruginosa*
18. Which of the following occurs in Chagas' disease (American trypanosomiasis)?
- A. Calabar swelling
 - B. Lymphadenopathy
 - C. Nephrotic syndrome
 - D. Saddle-nose deformity
19. A 35-year-old man presents to his GP with diarrhea, abdominal pain and nausea. He says his stools have been pale and he has felt persistently bloated. His symptoms started 6 weeks ago while on a surfing holiday in Peru.
- What is the most likely diagnosis?
- A. Celiac disease
 - B. Cryptosporidiosis
 - C. Enterotoxigenic *E. coli* gastroenteritis
 - D. *Giardia*
 - E. *Salmonella*



20. A 2-year-old child with acquired immunodeficiency syndrome is brought to the clinic with complaints of severe, non-resolving diarrhea, nausea, and vomiting, abdominal pain, and fever. Physical examination reveals tenderness in the epigastric region and dehydrated status of the child. The microscopic examination of the stools reveals acid-fast oocysts in the stools but is not gray or greasy. **Which of the following is most likely infective agent?**
- A. Cryptosporidium
 - B. Cytomegalovirus
 - C. Giardia lamblia
 - D. Mycobacterium avium cellulare
21. **Management of acute and subacute fascioliasis can be best achieved by using which of the following?**
- A. Albendazole
 - B. Cotrimoxazole
 - C. Levamisole
 - D. Triclabendazole
22. A 36-year-old Sudanese female presents to your clinic complaining of dysuria and hematuria, as well as pain with intercourse. Urinalysis shows blood, 10-19 RBCs/ml, but no other obvious signs of infection. Testing for sexually transmitted infections (STIs) is negative. CBC shows eosinophilia. Colposcopy shows "sandy patches" on her cervix. **How did she most likely contract this infection?**
- A. Contaminated water
 - B. Exposure to infected body fluids
 - C. Inhalation
 - D. Mosquitoes
23. **Hymenolepiasis nana is commonly known to cause an infection in what population?**
- A. Elderly
 - B. Patients with diabetes mellitus
 - C. Sexually active women
 - D. Young children
24. **What is the most common manifestation of cysticercosis?**
- A. Encephalitis
 - B. Manifestations of increased intracranial tension
 - C. Paresis
 - D. Seizures



25. An 18-month-old female is seen for anal pruritis that occurs especially at night. A cellophane tape test is administered and characteristic ova are seen upon microscopy. **What is the most appropriate next step in this patient?**
- A. No treatment is needed, it is a self-limiting illness
 - B. Treat with a topical steroid
 - C. Treat with albendazole
 - D. Treat with pyrantel pamoate
26. A 38-years-old male IV drug addict is complaining of low-grade fever and diarrhea for more than a month. The patient is diabetic and hypertensive. **What is the most likely cause of his condition?**
- A. Brucellosis
 - B. HIV/AIDS
 - C. Tuberculosis
 - D. Ulcerative colitis
27. A 34-year-old woman from Central Africa presents to the clinic with the complaint of a swelling on the lateral aspect of the neck for the past 5 months. The swelling gradually increased to its present size. There is no history of constitutional symptoms; however, she reports occasional episodes of hematuria. On physical examination, an enlarged cervical lymph node is seen measuring approximately 1x1.5 cm. A biopsy shows multiple adult filarial worms surrounded by dense eosinophilic infiltration and giant cells. **Which of the following elimination strategies is most likely to decrease the mode of transmission of this disease?**
- A. Mass drug administration in endemic areas
 - B. Mosquito nets, repellents, and insecticide sprays in endemic areas
 - C. Using barrier methods during sexual intercourse such as condoms
 - D. Using disposable syringes, blades, and razors
28. **In a patient with symptomatic HIV infection, which of the following would be the most likely cause of retinitis?**
- A. Candida albicans
 - B. Cytomegalovirus
 - C. Legionella pneumophila
 - D. Mycobacterium tuberculosis
 - E. Mycoplasma pneumoniae



29. A male patient aged 30 years travelled to Zaire. One week after arrival he complained of fever, headache, malaise, myalgia and arthralgia. A few days later, a maculopapular rash appeared on his face and trunk. Finally, he had subconjunctival hemorrhage, purpura, petechiae, epistaxis and melena. The patient was found to be in shock when his blood pressure was measured.

What is the most probable causative microbe?

- A. Ebola virus
- B. Influenza virus
- C. Measles virus
- D. Salmonella typhi

30. Which of the following is **FALSE** regarding the rabies vaccine?

- A. Dosage is the same for children as it is for adults
- B. It can lead to ulceration if given intradermally
- C. It should never be given intravenously
- D. The vaccine is safe to give with live vaccines

31. Which of the following is associated with the greatest increased risk of developing severe COVID-19?

- A. Ibuprofen use
- B. Inflammatory bowel disease
- C. Obesity
- D. Sarcoidosis

32. A 24-year-old female is being quarantined for suspected exposure to a patient with avian Influenza. She has had nasal stuffiness and a headache for 4 days.

What is the next best step in the management of this woman?

- A. Hospitalization and treatment with oseltamivir regardless of her stability
- B. Prescribe amantadine and treat as an outpatient after further patient education if she is stable
- C. Prescribe oseltamivir and treat as an outpatient after further patient education if she is stable
- D. Reassurance, education, and symptomatic treatment as an outpatient if she is stable



33. A traveler on an airplane from Pakistan developed fever, severe headache and photophobia. Cerebrospinal fluid analysis reveals the presence of gram-negative encapsulated diplococci.

Which of the following should be done for the airline crew and passengers?

- A. Chemoprophylaxis with rifampicin
- B. Isolation and observation
- C. Meningitis vaccine
- D. Reassurance as there is no danger of transmission

34. Which of the following causes of diarrhea has the shortest incubation period?

- A. Bacillus cereus
- B. Campylobacter
- C. E. coli
- D. Salmonella
- E. Shigella

35. Which of the following **IS NOT** a feature of Hodgkin Lymphoma?

- A. Fever
- B. Marked weight loss
- C. Painful lymphadenopathy
- D. Pruritis

36. Glucose-6-phosphate dehydrogenase (G6PD) deficiency is an abnormality of erythrocyte metabolism associated with hemolytic anemia. **Pharmacologic agents which induce hemolysis include which of the following?**

- A. Azathioprine
- B. Desferrioxamine
- C. Sulfamethoxazole
- D. Vitamin E

37. A 57-year-old male with post HCV cirrhosis has been admitted for worsening of his condition. A diagnosis of spontaneous bacterial peritonitis is made.

Presence of which of the following is an indication for treatment of this patient?

- A. Ascitic fluid PMN leucocyte < 250 cells/mm³ and negative culture
- B. Ascitic fluid PMN leucocyte count < 250 cells/mm³ and positive culture
- C. Ascitic fluid PMN leucocyte count ≥ 250 cells/mm³ and positive culture
- D. Cirrhosis without ascites with a white blood cell count $> 15,000$ /mm³



38. Sweating is not present in which of these conditions?

- A. Heat exhaustion
- B. Heat stroke
- C. Heat syncope
- D. Miner's cramps

39. Which of the following is INEFFECTIVE against anaerobes?

- A. Erythromycin
- B. Gentamycin
- C. Metronidazole
- D. Penicillin

40. At what point should a healthy child be vaccinated for meningococcal meningitis?

- A. At ages 2 and 5 years
- B. At ages 11 and 16 years
- C. If travelling to Mecca
- D. When going to college

III) Write a short account on each of the following (70 marks)

- 1- Enumerate the causes of tropical malabsorption? (20 marks)
- 2- Management of cerebral malaria? (20 marks)
- 3- Diagnosis of Kala azar? (15 marks).
- 4- Traveler's diarrhea causes and definition? (15 marks)

BEST WISHES

Examiners:

Prof. Atef Awad

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