Cert ID(SA) Phys

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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Subspeciality Examination for the Certificate in Infectious Diseases of the College of Physicians of South Africa

18 March 2010

1 Paper Only (3 hours)

All questions are to be answered. Each question to be answered in a separate book (or books if more than one is required for the one answer)

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1 a) Discuss the evidence for the use of steroids in tuberculous meningitis. (5)

b) Discuss clinical presentation and management of the neurological drug related side effects of the following regimen for treating multi-drug resistant tuberculosis: ofloxacin, terizidone/cycloserine, kanamycin, ethionamide, and pyrazinamide. (10)

[15]

2 a) Critically discuss the role of the 21st century microbiology laboratory in the diagnosis and management of hepatitis C patients. (8)

b) You are requested to investigate an outbreak caused by virus A. You learn that this viral infection is predominantly transmitted by mosquitoes and biting insects that have proliferated during the recent rains in South Africa. Person-to-person transmission does not occur readily. Mortality in children and HIV-infected patients may approach 80%. The disease is less severe in infected healthy, non-immune-compromised adults. A live-attenuated anti-virus A vaccine is available, but not yet registered commercially, from SA Vaccine Manufacturers. Using this case scenario and the information given, broadly outline your strategy for the containment of this outbreak. (7)

[15]

3 A 35-year-old South African travel guide is flown to hospital in South Africa with an acute febrile illness which presented with headache, fever and rigors. He has led a family group through Malawi, Mozambique and Zambia for the past 3-weeks. Highlights of the visit were to Lake Malawi and the Kasungu National Park in Malawi, the eating of seafood in northern Mozambique and the Victoria Falls. He takes mefloquine for malaria chemoprophylaxis and has been immunised against yellow fever and typhoid. Key features on examination: temp 39^{o}C, 3cm splenomegaly, confusion. No rash or bleeding. Total WCC 2.3×10^{9}/L, platelets 56×10^{9}/L, malaria smear negative

a) Discuss the differential diagnosis. (10)

b) What additional laboratory tests will you request? (5)

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4 Write short notes on the following

a) Define sepsis and systemic inflammatory response syndrome (SIRS). Provide at least 2 examples of non-septic causes of SIRS. (5)

b) Provide some rationale for the criteria established for the diagnosis of infective endocarditis. (5)

c) Predisposing causes, pathogenesis and management of pyogenic lung abscess. (10)

[20]

5 Discuss the use of antiretroviral therapy in the following clinical situations

a) A newly diagnosed 25-year-old, HIV-infected, ARV-naïve women admitted to ICU following a motor vehicle accident. She has been in ICU for 3 weeks and currently has an ESBL-Klebsiella ventilator associated pneumonia. It is proving difficult to wean her off the ventilator. Her CD4 count is 12 cells/μL. (10)

b) A 32-year-old HIV-infected man presenting with his 2nd stroke in the past 6-months with a CD4 count of 663 cells/μL. A full workup for causes of stroke other than HIV-vasculopathy has been negative on 2 occasions. (5)

[15]

6 a) A 46-year-old woman develops fever and confusion five-days after elective total abdominal hysterectomy for fibroids. There is marked phlebitis at the insertion site of a peripheral intravenous cannula, which is removed. She is normotensive.

i) What empiric antimicrobial therapy would you recommend? Give a brief justification for your choice. (3)

ii) Methicillin resistant *Staphylococcus aureus* is subsequently cultured from blood. Outline your plan for further investigation and management. (5)

iii) List the major adverse effects of the antimicrobial/s you select for management. (4)

b) A 20-year-old woman is admitted with peritonitis following a ruptured appendix. She receives penicillin, gentamicin and metronidazole and undergoes a laparotomy and appendectomy. Her initial course is stormy due to sepsis and she spends 48 hours in a surgical intensive care unit post-operatively, but her fever settles and she is transferred to the ward. On day 4 post operatively fever recurs. Her wound does not appear infected and the abdomen is soft. White cell count remains elevated at 17.5×10^9/L with a neutrophilia and left shift. Blood and urine are sent for culture and her antibiotics are changed to piperacillin-tazobactam. A yeast is grown from blood culture, subsequently identified as *Candida albicans*.

i) What key features would you look for on clinical examination? (3)

ii) Outline your management (5)

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