



THE COLLEGES OF MEDICINE OF SOUTH AFRICA

Part II Examination for the Fellowship of the
College of Emergency Medicine of South Africa

17 March 2009

Paper 1

(3 hours)

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

- 1 a) A 65-year-old male patient presents to your emergency department with severe, poorly localised abdominal pain. On examination diffuse tenderness but no peritonitis is present, vital signs are normal and blood glucose level is 6.5mmol/litre. The bedside sonar is negative for abdominal aortic aneurysm. Plain x-ray film is non-specific. The patient is a smoker (30 cigarettes a day) and is on treatment for hypertension. 12-lead ECG remains non-diagnostic, and two sets of cardiac enzymes are negative. During his stay in the emergency department the patient's abdominal pain becomes progressively worse.
- i) Which important abdominal emergency should be considered? (1)
ii) How would you diagnose this condition? (4)
iii) How would you manage this patient? (4)
- b) A 50-year-old female presents to your emergency department after thyroid surgery. Her clinical picture includes fever, agitation and confusion. Tachycardia with atrial fibrillation is present.
- i) What is the diagnosis? (1)
ii) How would you manage this patient? (8)
- c) Briefly describe 5 important forms of sickle cell crises. (7)
[25]
- 2 a) A 22-year-old overweight female enters your emergency department and tells the triage nurse that she has nausea and abdominal pain, and is on HAART (highly active anti-retroviral therapy). You recognise two of the HAART drugs to be didanosine (ddI) and stavudine (d4T).

- i) Which two potentially fatal conditions should be considered in this case? (2)
 - ii) Name three lab tests that would aid you in your diagnosis. (3)
 - iii) Write short notes on the pathophysiology of one of these conditions. (5)
- b) Discuss the current indications for abdominal x-ray in the emergency department. (5)
- c) Describe Ranson's criteria for assessing the severity of pancreatitis *at the time of assessment* in the emergency department. (5)
- d) List 10 common causes of leucocytosis in the emergency department other than infection. (5)
- [25]
- 3 a) Define the term Ante Partum Haemorrhage. (2)
- b) Define primary and secondary Post Partum Haemorrhage (PPH). (4)
- c) What are the recommended doses and routes of administration of the following emergency medications administered for the management of PPH?
- i) Oxytocin.
 - ii) Ergometrine.
 - iii) Misoprostol.
 - iv) Carboprost.
- (8)
- d) Describe the technique of aortic compression in managing acute PPH. (2)
- e) What is the Rausch tube? Describe its use in the management of acute PPH. (5)
- f) What is a non-pneumatic anti-shock garment and how is it used in obstetric haemorrhage? (4)
- [25]
- 4 a) What is the recommended initial management of a wound with suspected rabies exposure? (5)
- b) In a patient who has a high risk rabies wound and for which rabies immunoglobulin is injected
- i) Where anatomically is it injected? (3)
 - ii) What is the dose injected? (1)
 - iii) What daily schedule of immunoglobulin injection? (1)

- c) When administering rabies vaccine
- i) Into which muscle mass is the vaccine NOT injected? (1)
 - ii) Why is the rabies vaccine NOT injected into this muscle mass? (2)
 - (iii) What are the elements of a Category 2 risk rabies exposure? (2)
- d) Quinine sulphate is administered intravenously for severe malaria. What is the recommended dose, dilution, duration of administration and fluid type when administering Quinine? (3)
- e) What is the most likely causative bacterial organism for acute meningitis in immuno-compromised patients? (1)
- f) What are the two recommended antibiotics for acute meningitis caused by the organism mentioned in (e) above, and what is the dose of each? (6)

[25]

- 5 a) Describe your diagnostic approach to a patient presenting to the emergency department with acute symmetrical muscle weakness under the following headings

- i) Differential diagnosis. (8)
- ii) Relevant blood and diagnostic tests. (5)

- b) Discuss methaemoglobinaemia and its clinical significance in the emergency department under the following headings

- i) Pathophysiology. (4)
- ii) Recognition. (4)
- iii) Treatment. (4)

[25]

- 6 a) Discuss the initial emergency management of each of the following

- i) Blepharospasm. (2)
- ii) Laryngospasm. (6)
- iii) Oesophageal spasm. (3)
- iv) Urethral sphincter spasm. (2)
- v) Digital vascular spasm (eg inadvertent adrenaline auto-injection). (2)

- b) Discuss the causes and emergency management of hypercyanotic spells in an infant. (10)

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Paper II

(3 hours)

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

- 1 a) You are working as a consultant in an emergency department. A junior Registrar requests a d-dimer test on every adult patient with chest complaints to exclude pulmonary embolism (PE). Provide him with a list of criteria that he can use to support the decision not to initiate a PE workup on low risk patients. (8)
- b) Name and discuss the anginal equivalent symptoms. Why might they result in the inappropriate discharge of patients with undetected acute myocardial infarction from emergency departments? (8)
- c) Discuss the significance of fever in infants between birth and 12 weeks of age. May any of these infants be treated as outpatients? If so, list the criteria you would use. (9)
[25]
- 2 a) A 25-year-old male patient presents to your emergency department with the history of a sudden onset of severe headache. He is awake and responsive and has no focal neurological deficit. Give the clinical features that would necessitate a CT scan if found in this patient. (8)
- b) Discuss the important features of acute appendicitis in young children, women of child bearing age, pregnant women and elderly patients. (8)
- c) A 17-year-old boy complains of nausea, vomiting, abdominal pain, weight loss and weakness. He seems to be short of breath. On examination tachypnoea is prominent with good air entry on auscultation. The patient is severely dehydrated. His vital signs are as follows: blood pressure 90/40, heart rate 110/ minute, respiratory rate 28 per minute, temperature 38.5 degrees celsius, blood glucose 19 mmol/L. How would you diagnose this emergency and how would you treat it? (9)
[25]

- 3 a) List a differential diagnosis for a 48-year-old patient who presents to your Emergency Department with a red, hot acutely swollen knee. (5)
- b) List the Jones criteria for the diagnosis of acute rheumatic fever. (5)
- c) Describe the muscles of the rotator cuff of the shoulder, including neurovascular supply and action of each muscle in shoulder abduction. (7)
- d) Discuss the mechanism, typical clinical presentation and emergency department management options for shoulder impingement syndrome. (8)
[25]
- 4 a) Discuss the clinical features and management of a 23 year-old patient who presents to your emergency department 6 hours after an overdose of 10g of paracetamol. (12)
- b) Discuss the clinical presentation of methanol poisoning, including mention of the pathophysiological processes responsible. (6)
- c) Using a table, describe the clinical features of the four common toxidromes. (7)
[25]
- 5 a) Define priapism. (2)
- b) What are the 2 main types of priapism, and what are their underlying pathologies? (4)
- c) Which of the two types mentioned in (b) above is the acute medical emergency? (1)
- d) i) Describe your general emergency department management of a young teenage visiting Congolese patient presenting with severely painful priapism. (7)
- ii) Mention the medications that you elect to use. (5)
- iii) Describe what procedures you would perform in the emergency department. (6)
[25]
- 6 a) Suggest a formula for determining normal blood pressure in paediatric patients. (2)
- b) List the causes of sustained hypertension in children. (5)
- c) Tabulate the clinical features that you would look for in a child presenting to the emergency department with hypertension. (8)
- d) Name the drugs and dosages you could use in the acute management of hypertension in children. (5)
- e) Describe the clinical presentation and initial emergency management (including drug dosage) of a child presenting to your emergency department with acute adrenal insufficiency. (5)
[25]