



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
FINAL EXAMINATION FOR MEDICAL DEGREE – January/February 2024
MEDICINE PAPER 1

16th January 2024

(1.00 – 4.00pm) 3 hours

Index Number:

Instructions:

- 1. Write your index number in all the pages.**
- 2. Answer all questions.**
- 3. Write your answers in the space given after each part of the question.**
- 4. The space given is adequate for the expected answer.**
- 5. Please return the question book at the end of the examination.**
- 6. Normal values are given within brackets.**

1. A 75-year old man with hypertension and dyslipidaemia is admitted with sudden onset shortness of breath and left sided chest pain for 12 hours. He has been on daily medication and regular follow up every four months. Patient is a heavy smoker and has had an accidental fall two days ago resulting in left tibia and fibula fractures. He has been asked to bed rest after POP cast awaiting a date for internal fixation.

A. List **three (3)** possible diagnoses you would consider for this presentation. (15marks)

- 1.....
- 2.....
- 3.....

B. State one ^{symptom} clinical feature in the history supporting each of the diagnosis mentioned in A. (20 marks)

- 1.....
- 2.....

C. State **five (5)** physical signs that you would look for and state the ^{if associated with the A so} expected findings in the 3 conditions mentioned in A. (25 marks)

- 1.....
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- 2.....
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- 3.....
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D. State **five (5)** investigations that help to make the final diagnosis and discuss the expected results in the ^{each of the diagnoses} three (3) conditions you mentioned in A. (20 marks)

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E. State **four (4)** steps in the initial management of this patient until the results of confirmatory investigations are available.

(20 marks)

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2. A 72-year-old man is admitted to hospital with poor food and fluid intake and drowsiness for three days. He has a past history of diabetes and dyslipidemia. He has been on metformin 500 mg twice a day, gliclazide 80 mg twice a day, atorvastatin 10 mg nocte. He had complained to family members about mild fever, dysuria and nausea the preceding week. As his appetite was poor, his medicines were stopped due to a fear of developing 'low blood sugar'. His general condition had deteriorated over the last three days. He had passed large volumes of urine and become drowsy.

On examination, the GCS was 11/15. His skin was dry and skin turgor was reduced. Blood pressure was 90/60 mmHg. Rest of cardiovascular examination and respiratory examination were normal. There was suprapubic tenderness. Nervous system examination did not reveal focal neurological deficits. Investigations are given below.

WBC $12 \times 10^9/L$ (4-11), Neutrophils 82%, Hb- 15.3g/dL(14-16), Platelets – $356 \times 10^9/L$ (140-450)
UFR - Pus cells 80-100 per high power field.

Capillary blood glucose on glucometer - Hi Index

Random blood sugar - 800 mg/dL

Arterial blood gas - pH 7.36. PaO₂ 9.9 kPa, pCO₂ 6.5 kPa. HCO₃ - 26 mmol/L.

Serum Na⁺ 152 mmol/L(135-145), Serum K⁺ 3.8 mmol/L (3.5-5.5) Urine ketone bodies were negative.

A. What is the most likely diagnosis?

(10 marks)

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B. State the **two (2)** likely precipitating causes for the diagnosis mentioned in A. (10 marks)

1.....

2.....

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C. List one investigation each needed to confirm the diagnosis in A and underlying cause mentioned in B. (20 marks)

1.....

2.....

D. State **three (3)** important steps in the management. (30 marks)

1.....

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2.....

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3.....

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E. He recovers with treatment over the next one week. What is the diabetes treatment that you will discharge him on? (10 marks)

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F. Mention **two (2)** important advices you will give the patient on discharge. (20 marks)

1.....

2.....

3. A 49-year-old man was admitted to the hospital following a snake bite. He was clearing an old stack of firewood in his backyard and was bitten on his left foot. He was feeling dizzy and complained of gum bleeding. The left foot was swollen with blistering at the bite site.

A. State **two (2)** venomous snakes which can lead to the above presentation? (10 marks)

1.....

2.....

B. Name **four (4)** additional clinical features which indicate underlying systemic envenomation. (20 marks)

1.....

2.....

3.....

4.....

C. State **three (3)** bedside tests or examinations stating their significance in detecting complications. (30 marks)

1.....

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2.....

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3.....

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D. State **four (4)** other laboratory investigations that should be done ^{giving} explaining reasons

(20 marks)

1.....

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2.....

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3.....

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4.....

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As features of systemic envenomation were detected, antivenom treatment was started. Five minutes after starting antivenom, patient developed shivering and became pale and clammy. His pulse rate was 160 b.p.m. and systolic blood pressure was 60mmHg.

E. What is the diagnosis?

(5 marks)

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F. State **three (3)** steps in the immediate management of this condition?

(15 marks)

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2.....

3.....

4. A 25-year-old man is admitted to the hospital with shortness of breath and wheezing. He was unwell with fever, headache, sore throat for five days before admission. He had 3-4 times hospital admissions every year over the last 5 years. He had received intensive care treatment twice. In between these episodes he was well.

On examination, he is in respiratory distress using accessory muscles. He is febrile, tachypnoeic, and has bilateral diffuse rhonchi. There are no crepitations. Oxygen saturation on air is 89%.

Hb – 14 g/dL (14-16), WBC – $5.1 \times 10^9/L$ (4-11), Platelets – $260 \times 10^9/L$ (140-450), CRP – 25 mg/dL (<6)

A. What is the most likely diagnosis? (10 marks)

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B. State **three (3)** clinical features and expected findings that would indicate the severity of the condition mentioned in A. (15 marks)

1.....

2.....

3.....

C. State **three (3)** further investigations you would request indicating the usefulness. (30 marks)

1.....

2.....

3.....

D. State **four (4)** steps in the initial management of this patient. (20 marks)

- 1.....
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- 2.....
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- 3.....
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- 4.....
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After 6 hours of management, the patient becomes drowsy and confused. Arterial blood gas performed while on 8L of oxygen shows $pO_2 - 70$ mmHg and $pCO_2 - 49$ mmHg.

E. State the next step in management of this patient. (10 marks)

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F. Following recovery the patient is discharged. He is seen in the clinic one month later. List **three (3)** features that would help to assess the control of his condition. (15 marks)

- 1.....
- 2.....
- 3.....

5. A 45-year-old woman presents with bilateral ankle swelling and swelling around her eyes for one week duration. She has no shortness of breath, chest pain or chronic diarrhea. She was diagnosed to have hypertension two months ago and she is currently on losartan 50 mg bd, amlodipine 10 mg mane, hydrochlorothiazide 25 mg mane

On examination, she had bilateral pitting ankle oedema. Her blood pressure was 140/90 mmHg. Jugular venous pressure was not elevated. The breath sounds were reduced on both lower zones.

Investigations:

Urine full report Proteins- +++, Pus cells – 6-8 per HPF, RBC 10-12 per HPF

Hb- 12.5 g/dL (14-16) WBC – $10 \times 10^9/L$ (4-11) Platelets – $180 \times 10^9/L$ (140-450)

A. List **four (4)** medical problems that you identify in this patient. (20 marks)

- 1.....
- 2.....
- 3.....
- 4.....

B. What is the most likely diagnosis? (10marks)

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C. State **three (3)** investigations you would request to confirm the **diagnosis in B** mentioning the expected results. (15 marks)

- 1.....
- 2.....
- 3.....

D. State **five (5)** other investigations to ^{identify the} look for the underlying aetiology of the diagnosis given in B. (15 marks)

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....

E. Discuss **five (5)** steps in the management during first two days of admission. (30 marks)

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....

On day 3 of admission, she developed severe right loin pain with red colored urine.

F. What is the most likely reason for the above presentation (10 marks)

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6. A 50-year-old farmer has fever, headache, and vomiting for the past two days. He had been well in the past.

A. List **three (3)** differential diagnoses for the above presentation. (15marks)

1.....

2.....

3.....

B. State **two (2)** additional clinical features for each of the three (3) differential diagnoses listed in A which help to differentiate them. (15 marks)

1.....

2.....

3.....

The next day, he became increasingly unwell with worsening ^{of} fever, headache, vomiting and developing ^{ed} drowsiness with a GCS of 14/15.

By that time the following results were available.

WBC $12 \times 10^9/L$ (4-11), CRP 200 mg/dL (<6), UFR ^{RBC} 1-2 pus cells

C. What is the most likely diagnosis? (10 marks)

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D. List **two (2)** investigations that should be performed mentioning the expected results.

(20 marks)

1.....

2.....

E. State the pharmacological treatment.

(20 marks)

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After three days of above treatment the patient ^{was} ~~became~~ afebrile and CRP became 60 mg/dL. However, the patient was becoming increasingly confused.

F. State **two (2)** possibilities for the above complication

(20 marks)

1.....

2.....

7. A 17-year-old boy presents with fatigue and breathlessness on exertion for one month. On examination, he is pale and icteric. The results of the investigations are shown below.

| | | |
|------------------|----------------------|-----------------------------|
| Hb | 7.8 g/dL | (11-13) |
| WBC | $9.8 \times 10^9/L$ | (4-11) |
| Platelet count | $350 \times 10^9/L$ | (150-400) |
| Total bilirubin | 7.47mg/dL | (0.1-1.2 mg/dL) |
| Direct bilirubin | 1.2 mg/dL | (<0.3 mg/dL) |
| Serum albumin | 4.2 g/L | (3.4- 5.4 g/L) |
| PT/INR | 1 | |
| AST | 80 IU/L | (<40 IU/L) |
| ALT | 24 IU/L | (<40 IU/L) |
| Gamma GT | 44 IU/L | (<30 IU/L) |
| ALP | 111 IU/L | (44-147 IU/L) |
| Serum creatinine | 79 $\mu\text{mol/L}$ | (70-120 $\mu\text{mol/L}$) |

A. What is the most likely cause for his presentation? (10 marks)

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B. List **two (2)** additional investigations you would request to support the cause mentioned in A with expected results. (10 marks)

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C. List **four (4)** different diseases that could give rise to the cause identified in A. (20 marks)

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D. State **two (2)** features in the history and examination that would support each of the four diseases mentioned in C. (30 marks)

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E. State **five (5)** investigations that you would perform to differentiate the diseases state in C mentioning the **findings in each condition**. (30 marks)

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8. A 53-year-old man is admitted with four episodes of haematemesis for one day with altered conscious level for three days. There was no history of melaena, abdominal pain or fever. He is a teetotaler. He is on treatment for diabetes, hypertension and dyslipidemia for ten years.

On examination, he is drowsy, pale and icteric. Pulse rate is 112 bpm and blood pressure is 100/80 mmHg. Abdominal examination reveals moderate splenomegaly.

Investigations on admission are given below

Hb 6g/dL (13-16), WBC 6.5×10^9 (4-11), Platelet 78×10^9 (150-400)

ALT – 42 U/L (up to 42), AST – 37 U/L (up to 37), Gamma glutamyl transferase - 45U/L (11-60)

Total protein – 60g/dL (60-80), Albumin – 21 g/dL (40-50)

Blood urea – 55 mg/Dl (15-40), Serum creatinine – 1.1 mg/dL (0.6-1.2)

UFR - normal

A. State the most likely reason for haematemesis. (10 marks)

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B. State the underlying diagnosis. (10 marks)

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C. State **five (5)** important steps in the management within first 24 hours of this patient. (30 marks)

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The patient recovered from the acute episode and was haemodynamically stable.

- D. List **five (5)** investigations that you would perform to find out the underlying etiology for the diagnosis mentioned in B. (25 marks)

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....

Two days following hospital discharge the patient was found to be increasingly drowsy.

- E. What complication would you suspect in this patient? (10 marks)

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- F. What measures if taken earlier would have prevented the complication mentioned in D. (15 marks)

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