

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MASTER OF SCIENCE IN MEDICAL TOXICOLOGY FINAL
EXAMINATION – APRIL 2012

Date :- 4th April 2012

Time :- 1.00 p.m. – 4.00 p.m.

SEQ PAPER

Answer **all four (04)** questions in Part A.

Answer **two (02)** out of **five (05)** questions in Part B.

Answer each question in a separate book.

PART A

1. A 75 year old diabetic woman is on metformin 500 mg bd and glimepiride 2 mg/day. She is started on enalapril 5 mg/d as she is found to be hypertensive with chronic kidney disease.

Two days later she is admitted to the hospital with nausea, vomiting, polyuria, tremors and aggressive behaviour. It was found that patient has been on lithium 500 mg bd for the last 10 years.

- 1.1. Explain the reasons for her deterioration. (40 marks)
- 1.2. Describe the factors that can lead to impaired renal excretion of lithium. (30 marks).

A 20 year old man is admitted to a peripheral hospital 2 hours following ingestion of 12 g of lithium. The patient is transferred to the nearest general hospital for further management following lavage and administration of 200 g of activated charcoal.

- 1.3. Critically evaluate the management done at the peripheral hospital. (30 marks)

Contd...../2-

2. A 35 year old female is admitted following ingestion of a pesticide 1 hour back. Her GCS is 8/15, blood pressure is 70/50 mmHg and the pulse rate is 55 beats per minute. Examination of lungs reveals crepitations. Her oxygen saturation on room air is 70%.
- 2.1. List two (02) pesticides likely to be responsible for this presentation. (10 marks)
 - 2.2. Outline the management of this patient during the first 2 hours. (40 marks)
 - 2.3. List the complications she could develop. (20 marks)
 - 2.4. Outline the management of the complication mentioned above in 2.3. (30 marks)
3. A 6 year old child with viral fever for 4 days was admitted to hospital with nausea, vomiting and abdominal pain. He has been given paracetamol 500 mg 3 - 4 times a day for 4 days. The weight of the child was 20 kg and on admission his SGOT was 350 IU/L and SGPT was 600 IU/L. Serum paracetamol level done on admission was 30 mg/L.
- 3.1. Discuss whether the dose of paracetamol that was given to this child is Appropriate. (20 marks)
 - 3.2. Explain mechanism of toxicity of paracetamol in this situation. (25 marks)
 - 3.3. Discuss whether gastric decontamination is indicated in this child. (15 marks)
 - 3.4. Explain how the paracetamol level should be interpreted in this situation. (15 marks)
 - 3.5. Discuss the efficacy of antidote treatment in this patient indicating what antidote should be used. (25 marks)

4. A 35 year old farmer was admitted to Base Hospital, Gampaha 3 hours after an unidentified snake bite. On admission, he had pain and bleeding at bite site in the right ankle. He also complained of double vision and drooping of his eyelids. Few hours later he complained of difficulty in speech and unable to walk and transferred to National Hospital Colombo. On admission to Colombo, Medical Officer examined him and confirmed that patient had right sided arm and leg weakness and slurring of speech. They immediately ordered some blood investigations and started on treatment.

4.1. What investigation would you do immediately in the ward that will help you to determine the likely snake? (10 marks)

4.2. If the above investigation becomes positive, what is the most likely snake? (10 marks)

4.3. Outline the important steps in management of this patient. (30 marks)

4.4. What complication/s will you anticipate in his management? (20 marks)

4.5. Outline the management of the complications mentioned above in 4.4. (20 marks)

4.6. What advice you would give this patient on discharge from the hospital? (10 marks)

PART B

5. A chemical gas has been released from a chemical plant. The toxic gas is suspected to be hydrogen cyanide.

5.1. Describe the likely signs and symptoms that victims would exhibit following exposure. (40 marks)

5.2. What steps will you take to minimize casualties? (30 marks)

5.3. Describe the first aid and medical management. (30 marks)

Contd...../4-

6. A 10 year old girl was admitted to hospital with a history of poisoning. She is unconscious. Her mother states that it was accidental poisoning.

6.1. Describe medico-legal and ethical issues in the management of the patient. (50 marks)

6.2. What are the samples the doctor should collect for analysis in this case? (30 marks)

6.3. Describe the steps that should be taken to prevent accidental poisoning at home. (20 marks)

7. A 25 year old man who is known to be addicted to heroin is admitted to hospital in an unconscious state.

7.1. Explain the clinical features that would be indicative of overdose with heroin. (20 marks)

7.2. Outline the immediate management of this patient. (30 marks)

The patient regains consciousness with initial management.

7.3. Explain the need for further observation of this patient. (20 marks)

7.4. Outline further management of this patient on discharge. (30 marks)

8.

8.1. Outline factors that will determine the toxicity of a pesticide. (35 marks)

8.2. Outline regulatory frame work in Sri Lanka in controlling pesticides. (35 marks)

8.3. Discuss the role of the National Poisons Information Centre in Sri Lanka. (30 marks)

9. A study was conducted to review the morbidity and mortality from pesticide poisoning in Sri Lanka for the year 2005.

Data from the Medical Statistics Division of Ministry of Health showed that 5530 cases of poisoning were admitted to state hospitals in 2005 from district A of Sri Lanka. Of these, 800 (14.5%) were pesticide poisonings and 50 (6.25%) of the pesticide poisonings died. Mid year population of District A was 200,000. Sex ratio (M:F) for the district was 2:1. About 75% of the dead were males.

- 9.1. Calculate all possible morbidity and mortality rates. (40 marks)
- 9.2. What primary preventive measures could be adopted in this district to improve the situation.? (60 marks)