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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (ANAESTHESIOLOGY) FINAL EXAMINATION – AUGUST 2020

Date :- 14th August 2020

Time:- 9.30 a.m. – 12.30 p.m.

LONG ESSAY QUESTIONS

Answer any **three (03)** questions.

Answer each question **in a separate book.**

1. You are called to see a 19 year old boy, who was brought in by “1990 ambulance” at 3.00 a.m. from a social gathering. Paramedics reported that he had been violent, irritable and is known to snort “ice” (methamphetamine) regularly.

He was confused, hallucinating, sweating, shivering and unable to answer any questions. He was restrained and had an 18 G cannula in situ. On examination his pupils were dilated, muscle tone was rigid, heart rate 136/minute, blood pressure 220/104 mmHg, axillary temperature 38.8°C (102°F), respiratory rate 20/minute, SpO₂ 100% on air.

- 1.1. Outline the mechanisms of action of methamphetamine. (25%)
- 1.2. Describe your initial management of this patient with reasons. (60%)
- 1.3. What are the cardiovascular complications seen in chronic methamphetamine abusers? (15%)

2. A 30 year old male has been admitted to the emergency department following an automobile collision. He is found to have significant facial and lower limb injuries.
His GCS is 15/15, pulse rate 130/minute, blood pressure is 80/60 mmHg, SpO₂ - 94% on air.

- 2.1. Outline your immediate management of this patient. (40%)
- 2.2. He requires general anaesthesia for urgent mandibular and maxillary plating. What specific issues need to be addressed when managing his airway? (40%)
- 2.3. What different techniques are available to establish a definitive airway? Mention limitations of each technique. (20%)

Contd...../2-

3. A 55 year old male who is diagnosed to have a lower oesophageal cancer is awaiting oesophagectomy under enhanced recovery after surgery (ERAS) pathway.
- 3.1. Briefly outline the preoperative preparation of this patient with reasons. (40%)
- 3.2. What measures can be taken intraoperatively to facilitate his fast recovery? (35%)
- 3.3. How would you provide pain relief to this patient? (10%)
- 3.4. What are your postoperative concerns? (15%)
4. A 34 year old pregnant mother in her 34th week of gestation is admitted to the Emergency Treatment Unit with nausea, loss of appetite and abdominal pain. On examination she was deeply icteric with a blood pressure of 150/90 mmHg with no proteinuria. Her liver functions and clotting profile were deranged. She was also hypoglycaemic and an arterial blood gas analysis showed a metabolic acidosis.
- 4.1. What is the most likely diagnosis? (05%)
- 4.2. What other conditions may have a similar presentation? (10%)
- 4.3. How would you confirm the diagnosis? (15%)
- 4.4. Outline your initial management. (35%)
- 4.5. It is decided to perform a category II Caesarean section on this patient. Discuss your anaesthetic management. (35%)

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Date :- 13th August 2020

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SHORT ANSWER QUESTIONS

Candidates are required to answer **all twelve (12) questions**.

Candidates who fail to attempt any **one (01)** question will not pass the examination.

All questions carry equal marks.

Answer each question in a separate book.

PART A

1.
 - 1.1. List the effects and complications of subarachnoid haemorrhage. (30%)
 - 1.2. What neuroprotective strategies could you implement in aneurysm clipping? (50%)
 - 1.3. What specific factors would you consider prior to extubating a patient following aneurysm clipping? (20%)

2. A 52 year old lady is diagnosed with Cushings syndrome due to adenoma of both adrenal glands. She is scheduled for adrenalectomy.
 - 2.1. What are the main concerns in the preoperative assessment? (50%)
 - 2.2. How do you prepare this patient for surgery with regard to the disease condition? (35%)
 - 2.3. List the possible postoperative complications. (15%)

3. A 32 year old primipara with a large unrepaired atrial septal defect (ASD), at the 26th week of pregnancy is referred to you for assessment before the multidisciplinary team meeting.
 - 3.1.
 - 3.1.1. List the predictors of peripartum cardiac events that you would look for in this patient. (25%)
 - 3.1.2. What other major event would you predict? (05%)
 - 3.2. Outline the pathophysiological changes that could take place in response to pregnancy in this patient. (40%)
 - 3.3. She is in modified WHO class-III. What would you include in your plan for maternal monitoring at delivery? Give reasons. (30%)

Contd...../2-

4. A patient is scheduled for lower extremity revascularization surgery.
 - 4.1. List the patient risk factors for this surgery. (20%)
 - 4.2. Explain the physiological and biochemical changes of reperfusion injury with your strategies for management. (30%)
 - 4.3. What are your management considerations during the intraoperative period? (50%)

5. You are called to see a patient who had a below knee amputation 24 hours ago. He is still in pain despite using a Patient Controlled Analgesia (PCA) pump with intravenous morphine.
 - 5.1. Why is his pain control inadequate? (30%)
 - 5.2. How would you re-establish optimal pain control in this patient? (30%)
 - 5.3. What features could indicate that this patient is suffering from post-amputation pain syndrome (phantom limb pain)? (15%)
 - 5.4. What further pharmacological options are available for managing a post-amputation pain syndrome? (25%)

6. Nosocomial infections are a major cause of avoidable mortality, morbidity and prolonged ICU stay.
 - 6.1. What is a nosocomial infection? (05%)
 - 6.2. List the common organisms that are responsible. (10%)
 - 6.3. What are the risk factors leading to an increased incidence? (25%)
 - 6.4. What are the most common types of nosocomial infections in an ICU? (10%)
 - 6.5. Briefly describe the strategies which could be adopted to prevent such infections. (50%)

Contd...../3-

PART B

- 7.
- 7.1. Describe the
- 7.1.1. origin (10%)
- 7.1.2. course (15%)
- 7.1.3. cutaneous sensory innervation (20%)
- of the sciatic nerve along the lower limb.
- 7.2. How would you perform an ultrasound guided sciatic nerve block at the popliteal fossa? (40%)
- 7.3. State the motor responses you will observe when performing this nerve block with the nerve stimulator. (15%)
8. An 85 year old female is awaiting a Dynamic Hip Screw (DHS) surgery 48 hours after a fall.
- 8.1. Briefly outline the advantages of early surgery in this patient. (10%)
- 8.2. What are your intraoperative goals? (35%)
- 8.3. What measures can be taken to prevent intraoperative hypotension?(30%)
- 8.4. How do you prevent postoperative delirium in this patient? (25%)
9. A 69 year old hypertensive male with a past history of stroke is scheduled to undergo coronary artery bypass grafting (CABG) surgery under cardio pulmonary (CP) by-pass.
- 9.1. What steps would you take to prevent cerebral ischaemia during CP by-pass? (60%)
- 9.2. What other specific steps would you take for myocardial protection during CP by-pass? (10%)
- 9.3. List the prerequisites for weaning this patient from CP by-pass. (30%)

Contd..../4-

10. A 6 year old, 21 kg child is scheduled for adenotonsillectomy.

10.1. How would you risk assess the perioperative respiratory adverse events (PRAEs) in this child? (40%)

10.2. List the intraoperative and early postoperative complications associated with an adenotonsillectomy. (40%)

10.3. What are the concerns related to the pain management of this child?(20%)

11. A 35 year old healthy man is admitted with a history of high fever, sore throat, myalgia for 5 days. On examination he looks ill, respiratory rate is >35 breaths/minute, SpO₂ is 80% on air, pulse of 140/minute, low volume and with a blood pressure of 80/50 mmHg. A tentative diagnosis of COVID 19 is made.

11.1. How is this diagnosis confirmed? (05%)

11.2. You are called to intubate this patient.
What precautions would you take to prevent the transmission of the disease? (40%)

It was decided to prone ventilate this patient.

11.3. How does prone ventilation improve oxygenation? (35%)

11.4. Outline the problems of prone ventilation. (20%)

12.

12.1. List the patient specific risk factors for delayed return of consciousness after anaesthesia. (30%)

12.2. What are the surgical and anaesthetic causes for delayed recovery after anaesthesia? (30%)

12.3. Outline the principles of management of a patient who fails to recover from general anaesthesia. (40%)