



The Hong Kong College of Anaesthesiologists

Intermediate Fellowship Examination

Written Paper in Pharmacology

19 April 2022 (Tuesday)

14:00 - 16:30 hours (Online)

1. Regarding the use of intravenous lignocaine in the context of perioperative analgesia,
 - i) explain the possible mechanisms of action, including the types of receptors involved (40%)
 - ii) list the surgical and anaesthetic indications (20%)
 - iii) discuss the recommendations for safe practice (40%)
2. Compare and contrast, in terms of clinical merits, (50%) side effects, (30%) and limitations, (20%) the use of oral and intravenous iron for replenishing iron store in patients with iron deficiency anaemia.
3. Name at least 5 pharmacological agents with example(s) and describe the mechanisms of action and clinical applications for perioperative control of blood pressure in patients with pheochromocytoma.
4. What is the mechanism of action of unfractionated heparin? (25%) Describe the common methods to evaluate the anticoagulant response to unfractionated heparin? Include any limitations associated with each method. (75%)
5. Compare and contrast case-controlled studies and cohort studies in terms of how they are conducted, (30%) outcome measurements, (40%) and their strengths and limitations. (30%)
6. Outline the possible pharmacokinetic changes in patients with chronic renal failure. (75%) Discuss how drug dosage should be adjusted. (25%)
7. Define intubating dose of non-depolarizing muscle relaxants (NDMR). (20%) Explain the differences in onset of neuromuscular block at the diaphragm, larynx and adductor pollicis (AP), after an intubating dose of NMDR. (65%) What are the clinical implications of these differences? (15%)
8. Please explain how the pharmacological properties of ketamine that favour its use in the battlefield?
9. Discuss the use of the following drugs and their mechanisms of action in the treatment of intraoperative bronchospasm:
 - Salbutamol (25%)
 - Hydrocortisone (25%)
 - Magnesium (25%)
 - Ketamine (25%)
10. From pharmacokinetics point of view, explain why fentanyl is more suitable for transdermal administration instead of via the oral route. (50%)
What are some of the advantages and disadvantages of using transdermal fentanyl patches for acute post-surgical pain? (50%)
11. What is entonox? (10%) Discuss the advantages and disadvantages of using entonox for labour analgesia. (90%)
12. Outline the mechanism of action of SGLT-2 (sodium-glucose cotransporter-2) receptor inhibitor. (40%) Describe the mechanisms of developing euglycemic diabetic ketoacidosis. (60%)