



The Hong Kong College of Anaesthesiologists
Intermediate Fellowship Examination
Written Paper in Pharmacology

Friday, 15 February 2013, 14:00 - 16:00

The questions carry equal marks. Answer ALL questions.

1. Compare and contrast the mechanism of action, clinical utility, adverse effects and pharmacokinetics of neostigmine and sugammadex for reversal of neuromuscular blockade.
2. Outline the pharmacokinetic principles in the administration of remifentanyl to achieve and maintain a target effect site concentration of 2 ng/ml.
3. Compare and contrast the effects of propofol and ketamine on the central nervous system.
4. Compare and contrast the mechanisms of action, clinical indications, adverse effects and potential drug interactions of furosemide and spironolactone.
5. Explain, with examples, the characteristics of competitive antagonists and non-competitive antagonists. Explain how these antagonists affect the potency of a pure agonist using the dose-response curve.
6. Outline the ideal pharmacological properties of a volatile anaesthetic agent. Discuss how desflurane differs from the ideal agent.
7. For EACH of the following three classes of agents used in the management of asthma, name example(s) and list their mechanism(s) of action and side effects:
 - a. Long acting beta2 adrenoceptor agonists
 - b. Leukotriene pathway modifiers
 - c. Corticosteroids
8. Compare and contrast the pharmacology of atropine with glycopyrrolate.
9. Discuss the pharmacological principles in the management of paracetamol overdose.
10. Outline the pharmacology of nimodipine in the management of a patient with aneurysmal subarachnoid hemorrhage.
11. Classify, with example, drugs for the treatment of hyperlipidaemia. Choose any 2 classes that you have listed and outline their mechanism(s) of action and adverse effects.
12. You are asked to design a phase 3, randomized, double-blinded, placebo controlled clinical trial for a new anti-hypertensive drug. Discuss the factors involved in calculating the sample size of the trial.

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