THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
Intermediate Fellowship Examination

Written Paper in Pharmacology
Friday 4th July 2003
14:00 h to 16:00 h

ANSWER ALL QUESTIONS

1. Describe the effects of drugs binding to the three main types of G protein receptor complex. What are the main advantages of such a receptor system? Indicate three different groups of drugs that function via the three main types of G protein receptor mechanism.

2. Describe the Vaughan Williams classification of anti-arrhythmic drugs. Give examples in each category and a brief mechanism of action of drugs mentioned. Name two important anti-arrhythmic drugs that are not included in the classification and briefly describe their mechanism(s) of action.

3. Outline the biochemical changes after nitrous oxide administration? What are the potential problems of these changes? How could these changes be minimized?

4. List the potential sources of bias in clinical studies. Give examples. What are the measures that can be taken to reduce the bias?

5. Define the terms zero order and first order kinetics in drug metabolism. Discuss the clinical implications of the two types of metabolism as applied to the two intravenous induction agents, thiopentone and propofol.

6. Desflurane is the most appropriate inhalational anaesthetic for low flow anaesthesia using a completely closed circuit. Discuss.

7. Outline the systemic effects of drugs applied topically during ophthalmic surgery.

8. Briefly outline the pharmacokinetic rationale of patient-controlled analgesia using intravenous morphine.

9. Outline the long term adverse effects of corticosteroid therapy.

10. What are the indications for and mechanisms of action of anticholinesterase drugs? What are the main differences between neostigmine and pyridostigmine?

11. Describe the structure activity relationship of amide local anaesthetics with particular reference to ropivacaine.

12. Outline the effects of non-depolarising neuromuscular blocking agents that are <u>NOT</u> due to the action on the post-junctional nicotinic receptor.

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