



# The Hong Kong College of Anaesthesiologists

## Intermediate Fellowship Examination

### Written Paper in Pharmacology

Friday 7<sup>th</sup> March 2003 14:00 h to 16:00 h

*Answer all questions*

1. Define chirality and explain how this occurs in the isomers of bupivacaine. Describe how the cardiac effects of levobupivacaine and bupivacaine may differ.
2. A fit (ASA I) 30 year old patient has a 4 hour anaesthetic with 70% nitrous oxide and 1.5MAC isoflurane. Compare the recovery (pharmacodynamic and pharmacokinetic aspects) from the nitrous oxide versus isoflurane.
3. Describe the function(s) of NMDA (N-methyl-D-aspartate) receptors in the CNS and their interaction(s) with anaesthetic/analgesic drugs.
4. Briefly describe and illustrate with examples how drugs can interact with each other.
5. "The onset of anaesthesia is slower with propofol (2.5mg/kg ivi) than with thiopentone (5mg/kg ivi)." Explain this observation using your knowledge of pharmacokinetics.
6. List the relevant receptors involved in the pharmacology of emesis. Outline the actions of anti-emetic medications at these sites.
7. Outline the factors that influence the onset of non-depolarizing neuromuscular blocking agents.
8. List the drugs that are useful in controlling brain swelling following severe head injury. Briefly describe their mechanism(s) of action.
9. Outline the mechanism(s) of action, clinical indication(s) and adverse effects of amiodarone.
10. Outline the pharmacology of synthetic oxytocin (Syntocinon).
11. Define type I and type II statistical errors. Explain their implications and relative importance. Describe ways to minimise type I and type II errors in a clinical trial.
12. Briefly explain how morphine disposition will be affected when given in repeated intravenous boluses to a renal failure patient.

**\*\*End of Paper\*\***