



# The Hong Kong College of Anaesthesiologists

## Intermediate Fellowship Examination

### Written Paper in Pharmacology

Friday, 16<sup>th</sup> July 2010, 14:00 - 16:00 h

The questions carry equal marks. Answer **ALL** questions

1. Discuss drug tolerance with reference to nitrates and sympathomimetics.
2. Inhalational induction of anaesthesia is performed in a 1 year old child. Outline the factors that will affect the time required to achieve adequate depth of anaesthesia (i.e. no response to surgical incision, assume only inhalational agent/s are administered intra-operatively).
3. Outline the mechanisms of action and electrophysiological effects of anti-arrhythmic drug classes in the Vaughan-Williams classification. Illustrate your answer with examples.
4. Outline the role of cytochrome P450 in drug metabolism and its contribution to variability in drug response.
5. Compare and contrast the pharmacology of clonidine and dexmedetomidine.
6. An 80 year old patient on warfarin presents with upper gastrointestinal bleeding with an international normalized ratio (INR) of 5. Outline factors that may have enhanced the anti-coagulant effect of warfarin (50% mark). Outline the principles of rapid reversal of warfarin effect (50% mark).
7. Describe drugs used to produce uterine relaxation (tocolytics). Include their mechanisms of action and important side effects.
8. Describe the effects of ketamine on the central nervous system, respiratory system and cardiovascular system? Include the differences between the R and S isomers on these systems.
9. Outline the effects of depolarizing and non-depolarizing muscle relaxants at nicotinic and muscarinic cholinergic (acetylcholine) receptors.
10. Explain why remifentanyl is a drug that is better administered by continuous infusion than intermittent boluses.
11. Outline factors which determine placental transfer of drugs. Discuss these factors with special reference to the placental transfer of local anaesthetics.
12. In a randomized controlled trial, why do we need to choose the sample size? What are the factors that affect our choice of sample size? (Formulae are not required)

\*\*\*\*\* END OF PAPER \*\*\*\*\*