

## SAJAA CPD ANSWER FORM – March/April 2025

PLEASE SUBMIT ONLINE BEFORE 31 MARCH 2026

Please answer the following questions:

### There is no context for this sensitive matter – mixing of propofol and remifentanyl for total intravenous anaesthesia

#### 1. What is the primary reason often stated for mixing propofol and remifentanyl in a single syringe in clinical practice?

- To enhance the pharmacodynamic synergy of the drugs
- To simplify drug administration and address resource limitations
- To improve the shelf-life of both drugs
- To achieve more precise drug titration

#### 2. What is a significant concern regarding the chemical stability of a propofol and remifentanyl mixture?

- Increased analgesic effectiveness
- pH-induced degradation of remifentanyl and propofol
- Improved homogeneity over time
- Enhanced lipid solubility of remifentanyl

#### 3. According to the South African Society of Anaesthesiologists (SASA), why should medications not be mixed outside of manufacturer specifications?

- It may alter drug stability and pharmacokinetics
- It increases the risk of cross-contamination
- It reduces the environmental impact of anaesthesia
- It allows for simplified workflow in resource-limited settings

#### 4. What is a major pharmacokinetic concern when propofol and remifentanyl are mixed?

- Remifentanyl accumulates in the body due to slow metabolism
- The lipid emulsion of propofol enhances remifentanyl clearance
- Propofol infusion rates cannot be adjusted independently of remifentanyl
- The mixture results in prolonged sedation with slower recovery

#### 5. What parameter is commonly used to assess the physical stability of propofol emulsions in mixtures?

- Protein binding percentage
- Lipid oxidation index
- Viscosity measurement
- Zeta potential of lipid droplets

#### 6. Why would the presence of electrolytes in solutions that are mixed with propofol contribute to the destabilisation of propofol emulsions?

- Electrolytes promote lipid oxidation and degradation
- Electrolytes neutralise repulsive forces between lipid droplets
- Electrolytes increase the viscosity of the mixture
- Electrolytes enhance the solubility of propofol

### Evaluating the effect of perioperative carbohydrate loading on reducing the incidence of PONV in middle ear surgery: a multi-arm randomised controlled trial

#### 7. What is the suggested mechanism by which carbohydrate loading reduces PONV?

- It decreases vestibular stimulation during surgery
- It improves glucose metabolism and reduces surgical stress response
- It enhances the effectiveness of antiemetics
- It eliminates the need for preoperative fasting

#### 8. How does carbohydrate loading directly affect the gastrointestinal tract?

- It reduces gastric acid production and enhances gastric emptying
- It increases acid reflux during surgery
- It delays gastric emptying to prevent nausea
- It causes bloating, leading to reduced PONV

#### 9. Which type of surgeries showed no effect of carbohydrate loading on PONV in previous studies?

- Middle ear surgeries
- Laparoscopic cholecystectomies
- Major upper gastrointestinal surgeries
- Hysteroscopic procedures

#### 10. Why is carbohydrate loading not suitable for all patient populations?

- It is associated with higher rates of postoperative infections
- It increases blood glucose levels, limiting its use in diabetic patients
- It prolongs the duration of surgery
- It has no effect on PONV for any type of surgery

#### 11. What is a key advantage of carbohydrate loading mentioned in the study?

- It is an expensive yet effective intervention
- It eliminates the need for antiemetic medications
- It is a cost-effective and safe method to control PONV
- It reduces surgical time by improving anaesthesia efficiency

### The perceptions of the working environment of anaesthesiologists migrating from the public to the private sector in a developing country: an exploratory, qualitative study

#### 12. The SA Health System is a complex interaction of people, clinical service delivery and levels of care. If you were looking for the governmental reflection on the direction for the future, which of the following documents would best answer the questions related to medium term management of people and the service they deliver?

- Human Resources for Health Strategy
- National Development Plan
- The National Health Insurance white paper
- Transformation of the Health Service White paper

#### 13. This study employs 'rich pictures' following the prescripts of Checklands Soft Systems Methodology. Which one of the following research designs would make the best use of such pictures?

- Cross sectional quantitative study
- Descriptive study of prevalence
- Qualitative interpretive study
- Quasi experimental clinical observation study

#### 14. Herzberg's Motivation-Hygiene Theory presents the experiences of employees in two different perspectives reflected as either motivation or hygiene factors. Which one of the following would be regarded as a hygiene factor according to this theory?

- Adequate career advancement
- Poor work relationships
- Recognition of achievements
- Stimulating work

#### 15. Herzberg's Motivation-Hygiene Theory presents the experiences of employees in two different perspectives reflected as either motivation or hygiene. Which one of the following would be regarded as a motivation factor according to this theory?

- Appropriate supervision and support
- Competitive salary and benefits
- Flexible working conditions
- Opportunities for personal growth



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**16. In this study, the anaesthesiologists reflected deeply on a number of factors which had affected their migration out of the public sector. Which of the following represented the LEAST significant factor in their decisions?**

- Inflexible work arrangements
- Lack of accountability reflected as protected employment
- Salaries and benefits
- Sub-optimal work life balance

**17. The health system and the attendant pressure on staff which affects migration represent a complex system with multiple interacting components. Which of the following is the most significant consideration when reflecting on this complexity?**

- Context in which the system operates
- Hierarchy which operates in the system
- Number of actors within the system
- The location of the system in health care

**The progression and resolution of local anaesthetic resistance following a scorpion sting: case report**

**18. What type of scorpion venom is believed to affect the sodium channels and contribute to local anaesthetic resistance?**

- Alpha toxins
- Beta toxins
- Delta toxins
- Gamma toxins

**19. What intervention is suggested to diagnose local anaesthetic resistance in patients with a history of scorpion stings?**

- Blood test for venom antibodies
- Spinal fluid analysis
- Diagnostic dermal local anaesthetic infiltration test
- Genetic testing for sodium channel mutations

**20. What is the proposed mechanism of local anaesthetic resistance after a scorpion sting?**

- Competitive antagonism at sodium channels
- Inactivation of potassium channels
- Blockage of calcium channels
- Excessive activation of alpha-subunits in sodium channels

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