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SOUTH AFRICAN SOCIETY OF ANAESTHESIOLOGISTS

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## SAJAA CPD ANSWER FORM – July/August 2024

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Please answer the following questions:

### An evaluation of anaesthetic waste generation at a Johannesburg academic hospital

- The most important step in reducing the financial and environmental cost of healthcare waste is:**
  - Recycling
  - Correct waste separation
  - Banning single-use items
- The World Federation of Societies of Anaesthesiologists (WFSA) states that:**
  - Anaesthesia needs to incorporate sustainable practices to limit their contribution to global warming
  - Anaesthesia providers must use reusable items and have recycling programmes in place
  - Anaesthesia is contributing to global warming; however, as an individual anaesthetist, there is no need to change current practices
- With regards to general anaesthetic waste, the study found that:**
  - Approximately 70% of general waste is potentially recyclable
  - As only a minority of general waste is recyclable, a recycling programme would not be feasible
  - The majority of general waste is contaminated by medical waste, and therefore, not fit for recycling
- Correct waste separation was found to be poor, with many general waste items found within medical waste bags. A potential reason for this is:**
  - Same colour bags are used for both medical and general waste
  - Most anaesthesia providers do not think their environmental impact is important
  - Lack of knowledge about which items are classified as medical waste

### Environmentally sustainable anaesthesia in a developing country – a narrative review

- The inhalation anaesthetic gas with the shortest atmospheric lifetime is:**
  - Desflurane
  - Halothane
  - Sevoflurane
- The inhalation anaesthetic gas with the greatest global warming potential (GWP) is:**
  - Desflurane
  - Halothane
  - Sevoflurane
- The inhalation anaesthetic gas with the longest atmospheric lifetime is:**
  - Desflurane
  - Nitrous oxide (N<sub>2</sub>O)
  - Sevoflurane

- Propofol is environmentally toxic because it:**
  - Can accumulate in certain aquatic organisms due to its fat solubility
  - Needs to be incinerated at more than 1 000 degrees Celsius for over two seconds
  - Must be discarded in specific containers for hazardous pharmaceutical waste

### Effect of hydroxyethyl starch (Voluven® 6% 130/0.4) on blood glucose levels during orthopaedic lower limb surgery under spinal anaesthesia – a prospective, randomised controlled trial

- What is hydroxyethyl starch (HES) derived from?**
  - Amylopectin
  - Amylose
  - Cellulose
- What generation of saline-based product is Voluven® 6% (130/0.4)?**
  - First generation
  - Second generation
  - Third generation
- What statistical tests were used to analyse the clinical data in the study?**
  - T-tests, Mann-Whitney U, and chi-square tests
  - ANOVA, Kruskal-Wallis, and Fisher's exact tests
  - Z-tests, Wilcoxon signed-rank test, and Pearson's correlation
- What was the conclusion of the study regarding the blood glucose levels in the Voluven® group compared to the saline group?**
  - Voluven® caused a clinically significant increase in blood glucose levels
  - Voluven® caused a statistically significant but clinically insignificant increase in blood glucose levels
  - There was no difference in blood glucose levels between the Voluven® and saline groups

### External oblique intercostal plane block versus subcostal transversus abdominis plane block for pain control in supraumbilical surgeries

- Somatic sensation in the upper abdominal wall originates mainly from:**
  - The lateral and anterior cutaneous branches of lower intercostal (T6–T10) nerves
  - The ilioinguinal and iliohypogastric nerves
  - Superior hypogastric plexus of nerves
- By applying the ultrasound probe on the anterior thoracic wall medial to the anterior axillary line at the sixth level intercostal space, the following muscular structures can be visualised:**
  - External oblique muscle and intercostal muscles
  - The pectoralis major, pectoralis minor, and serratus anterior muscles
  - Pectoralis major muscle, intercostal muscle, and transversus thoracic muscle
- In the subcostal transversus abdominis plane (TAP) approach, with the patient supine, the ultrasound probe is placed:**
  - In the midaxillary line between the bony prominences of the subcostal margin and the iliac crest
  - On the anterior thoracic wall medial to the anterior axillary line by 1–2 cm, at the sixth level intercostal space
  - Parallel to the subcostal margin near the xiphoid process
- The target nerves for the subcostal TAP block are:**
  - The anterior cutaneous branches originating from T6 to T9
  - The lateral cutaneous branches originating from T2 to T6
  - The lower intercostal, the iliohypogastric, and the ilioinguinal nerves

### The role of adrenaline in the management of obstetric spinal hypotension during caesarean section: a systematic review

- In South Africa, hypotension prior to delivery of the baby was a major morbidity in:**
  - 40% of maternal deaths
  - 10% of maternal deaths
  - 25% of maternal deaths
- According to the international consensus guidelines published in 2018:**
  - Adrenaline is considered the agent of choice, and infusions are recommended for prophylaxis of obstetric spinal hypotension
  - Adrenaline is only recommended for circulatory collapse or in resource-limited settings where alternatives are not available
  - Phenylephrine and adrenaline are considered agents of choice, and infusions are recommended for prophylaxis of spinal hypotension
- In the current systematic review, meta-analysis was precluded because:**
  - Most of the studies that were included were of low or uncertain quality
  - The included trials were conducted in different obstetric populations
  - There was significant heterogeneity in the comparator agents used and trial outcome definitions, coupled with the small number of studies identified
- Ethical justification for further research on adrenaline could be questioned because of:**
  - The proven safety and efficacy of phenylephrine
  - The proven risk associated with the use of adrenaline for obstetric spinal hypotension
  - The financial implications associated with conducting an obstetric clinical trial in a resource-limited country like South Africa

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+2712117001  
Office – Switchboard:  
+2712117000

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