

Candidate No: \_\_\_\_\_



**The Hong Kong College of Anaesthesiologists**

**Final Fellowship Examinations**

**Paper II – Critical Appraisal of Literature**

**23 March 2023 (Thursday)**

**11:30 – 12:00 hours**

**Article**

**“Effect of Regional vs General Anesthesia on Incidence of Postoperative Delirium in Older Patients Undergoing Hip Fracture Surgery: The RAGA Randomized Trial” Li T et al (JAMA 2022; 327: 50-58)**

**You will not need to study the supplements. Materials in the supplements will NOT be examined.**

**Instructions**

- There are 8 multiple choice questions in this section, based on the above paper, including its content in the Appendix.
- **ANSWER ALL** questions, they carry equal marks.
- For each question, choose the **ONE** best answer. If you mark more than one answer, you will receive NO mark for that question. No marks will be deducted for incorrect answers.

**1. Which of the following is an accurate description of the RAGA trial design?**

- A. Multicenter, parallel group, surgeon-blinded, superiority, per-protocol, randomized trial.
- B. Multicenter, 2-groups, investigator-blinded, superiority, intention-to-treat, randomized trial.
- C. Multicenter, parallel group, anesthesiologist-blinded, non-inferiority randomized trial.
- D. Multicenter, 2-groups, patient-blinded, non-inferiority randomized trial.
- E. Multicenter, prospective, nurse-blinded, superiority intention-to-treat, adaptive randomized trial.

**2. With respect to the “*post hoc* outcome” (Table 3, page 55),**

- I. it was part of the secondary outcomes.
  - II. it contained all characteristics of delirium.
  - III. it was adjusted for age, preoperative delirium, and preexisting dementia.
  - IV. it was an unplanned analysis.
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- A. I only.
  - B. II only.
  - C. IV only.
  - D. I and III only.
  - E. II and IV only.

- 3. The per-protocol analysis was done with which of the following patient group?**
- A. Patients who were randomized, and had surgery.
  - B. Patients who were randomized, had surgery, and received the allocated treatment.
  - C. Patients who were randomized, had surgery, and received the allocated treatment, but excluded those who required crossover treatment (i.e. conversion from regional to general anesthesia or vice versa).
  - D. Patients who were randomized, had surgery, and received the allocated treatment, but excluding those who had ketamine infusion.
  - E. Patients who were randomized, had surgery, and and received the allocated treatment, but excluded those who had continuous infusion for regional block after surgery.

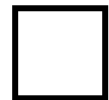
- 4. In the regional anesthesia group, the permitted anesthetic techniques included:**
- I. epidural block.
  - II. midazolam infusion.
  - III. Iliac fascia 3-in-1 block.
  - IV. caudal block.
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- A. I only.
  - B. IV only.
  - C. I and III only.
  - D. II and IV only.
  - E. None of the above.

- 5. Which of the following patient fulfil the diagnosis of the primary outcome of the RAGA trial?**
- A. A patient who died due to pulmonary embolism on the third day after surgery.
  - B. A patient with Mini-Mental State Examination score less than 20 in the follow-up visit.
  - C. A patient who reported severe pain during the follow-up visit.
  - D. A patient who became comatosed during the follow-up visit.
  - E. A patient who reported visual hallucination but was correct with day, time and place during the follow-up visit.

**6. In the analyses of postoperative delirium, there was significant difference between regional and general anesthesia on:**

- I. hyperactive delirium.
- II. hypoactive delirium.
- III. mixed motor agitation delirium.
- IV. subsyndromal delirium.

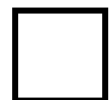
- A. I only.
- B. IV only.
- C. I and III only.
- D. II and IV only.
- E. None of the above.



**7. The total sample size was reduced from 980 to 950 patients, this was associated with / or resulting from:**

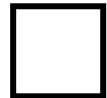
- I. a decrease in the power of statistics.
- II. a decrease in the incidence of postoperative delirium.
- III. a decrease in the relative risk of postoperative delirium between the two groups (general vs regional anesthesia).
- IV. a decrease in the withdrawal rate.

- A. I only.
- B. IV only.
- C. I and III only.
- D. II and IV only.
- E. None of the above.



**8. A correct interpretation of the RAGA trial is:**

- A. General anesthesia was not worse than regional anesthesia for postoperative delirium after hip fracture surgery.
- B. There was no effect of regional anesthesia on postoperative delirium compared with general anesthesia.
- C. Patient had similar rate of postoperative delirium in general and regional anesthesia, if neuraxial opioids was not used in spinal or epidural block.
- D. The effect of regional or general anesthesia on postoperative delirium could not be concluded because the incidence was much lower than anticipated.
- E. The effect of regional or general anesthesia on postoperative delirium could not be concluded because the arterial pressure during surgery was not actively controlled.



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