

Candidate No: _____



The Hong Kong College of Anaesthesiologists

Final Fellowship Examinations

Paper II – Critical Appraisal of Literature

11 August 2025 (Monday)

11:30 – 12:10 hours

Article

"Effect of perioperative blood transfusion on preoperative haemoglobin levels as a risk factor for long-term outcomes in patients undergoing major noncardiac surgery: a prospective multicentre observational study" Morris, et al. BJA 2024; 133(6): 1183-1191.

Instructions

- There are 8 multiple choice questions in this section, based on the above paper.
- **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. Concerning the null hypothesis of this study, which of the following statement(s) is/are correct?

- I. Preoperative haemoglobin level is associated with decreased 1-yr MACCEs
- II. RBC transfusion is not associated with change in MACCEs
- III. Preoperative haemoglobin level is not associated with change in all-cause mortality
- IV. RBC transfusion is associated with increase in all-cause mortality

- A. I and III
- B. I and IV
- C. II and III
- D. All of the above

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2. Which of the following groups of patients were included in this study?

- I. Patients with age >50
- II. Patients undergoing ambulatory day surgery
- III. Patients undergoing non-cardiac surgery
- IV. Patients undergoing emergency surgery

- A. I and III
- B. II and IV
- C. I, III and IV
- D. All of the above

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3. How did this study minimize selection bias?

- A. Enrolment of consecutive patients
- B. Randomization of participants
- C. Blinding of outcome assessments
- D. Physicians who took care of patients did not involve in outcome assessments

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4. "Statistical significance was set to *two-sided* P-values <0.05." (p.1185) What is the meaning of '*two-sided*'?

- A. To investigate both direct and indirect effects of preoperative haemoglobin levels
- B. The effect of preoperative haemoglobin level could be beneficial or detrimental to 1-year MACCEs and all-cause mortality
- C. Preoperative haemoglobin level could be normalized or remain low after RBC transfusions
- D. All statistical inference tests should be 'two-sided' analysis

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5. "A total of 1291 patients were recruited, and 1060 were included in the final analysis." (p.1185) Which of the following was/were reason(s) of exclusion?

- I. Operation cancelled
- II. Consent withdrawn
- III. Study nurse not available
- IV. No transfusion data available

- A. I and IV
- B. II and III
- C. I, II and IV
- D. All of the above

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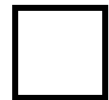
6. Which of the followings is the main conclusion of the study?

- A. Preoperative Hb levels were associated with 1-yr outcomes and this effect was not mediated by perioperative RBC transfusions
- B. Preoperative Hb levels had no effect on 1-yr outcomes and this effect was not mediated by perioperative RBC transfusions
- C. Preoperative Hb levels were associated with 1-yr outcomes and this effect was mediated by perioperative RBC transfusions
- D. Preoperative Hb levels had no effect on 1-yr outcomes and this effect was mediated by perioperative RBC transfusions

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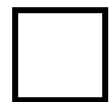
7. "The study is reported according to Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)." (p.1184) Which of the following statements concerning STROBE is NOT correct?

- A. STROBE recommendations aim to improve the quality of reporting in observational studies
- B. STROBE guidelines are applicable to cohort, case-control, and cross-sectional study designs
- C. STROBE recommendations are primarily intended to guide the conduct of studies
- D. STROBE guidelines are widely endorsed by leading medical journals



8. Which of the following statements about the terms 'mediator' and 'moderator' is correct?

- A. A moderator variable can be considered the same as a confounder
- B. Both mediator and moderator variables have direct effects on both the exposure (X) and the outcome (Y)
- C. Both mediator and moderator variables influence the relationship between the exposure (X) and the outcome (Y)
- D. Unlike mediator analysis, moderator analysis examines the existence of a causal relationship between exposure (X) and outcome (Y)



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