ADMINSTRATIVE MEDICINE

Part I Examination

Monday 10 June 2013

13:30 – 16:00 (2½ hours)

Paper IA

Candidates must answer all parts of this questions

Style, clear grammatical English and legibility will be taken into consideration by the Examiners. Answers should be written in a form appropriate to the audience specified in the question.
Weighting of marks for each part of the question is shown in parenthesis.

DO NOT OPEN PAPER UNTIL THE INVIGILATOR INSTRUCTS YOU TO BEGIN

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1. A case-control study was conducted to evaluate the relationship between cigarette smoking and lung cancer. Smoking status was compared in 1,000 patients diagnosed with lung cancer and 2,000 controls who were free of lung cancer. 600 of the lung cancer patients were smokers and 200 control patients were smokers. Please answer the following questions based on these data.
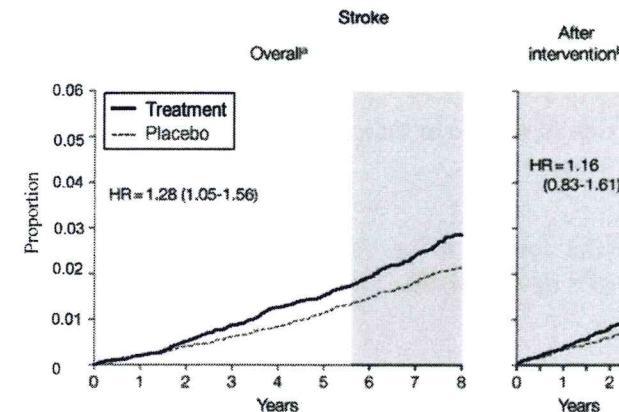
   i. Estimate the strength of the association between cigarette smoking and lung cancer and interpret and comment on your result. (2.5 marks)

   ii. Suppose the 95% confidence interval for the estimate of the association $11.13 \sim 16.38$. Please interpret and comment on these results. (1 mark)

iii. Estimate the percentage of lung cancer patients in smokers that is attributable to their smoking habit (or attributable risk percent in the exposed) and explain your result. (2.5 marks)

iv. Estimate the percentage of lung cancer patients that is attributable to their smoking habit in a local population with 20% of people smoking cigarettes in it (or attributable risk percent in the population) and explain your result. (2 marks)

v. What assumptions have to be made in the estimation in question iv and what other study design you may consider for further confirming the findings? (2 marks)

2. Randomized controlled trial (RCT) is the ideal design in assessing the efficacy and safety of medicine.

i. Write short notes on the key features of double blind RCT, including advantages of these features. (5 marks)

ii. What is Intention-To-Treat (ITT) analysis? (3 marks)

iii. Please answer based on the following graph. What is meant by Hazard ratio (HR)? (2 marks)

Figure. Kaplan-Meier cumulative hazards for stroke by time in the trial and time after termination of intervention (Adapted from *JAMA*. 2008;299(9):1036-1045)

The intervention phase was a RCT. Statistical analysis of survival analysis was used. The unshaded portion of the graph identifies the intervention period of 5.6 years. The shaded portion of the graph represents the follow-up time after the intervention. [a]Overall includes events from the point of randomization. [b]Post-intervention phase of 2.4 years.

3. Describe the impact of modern information technology and internet use on the delivery and utilization of health care, demonstrating key points with examples.

(10 marks)

4. You are a senior manager responsible for gate-keeping the introduction of new drugs in a public sector organization. The leader of a group of Clinical Oncology Physicians would like to introduce a new drug "Erlotinib" which is a newly registered targeted therapy for lung cancer patients into the drug formulary to be provided free of charge to indicated patients.

i. What are the factors to be considered when deciding on the inclusion of a new medicine into the formulary funded by public money? (5 Marks)

ii. With reference to the factors mentioned in (i), describe your steps for decision making in response to this request of introducing Erlotinib. (5 marks)

5. You are a Hospital Chief Executive. What legal and accountability issues would concern you during and after a novel infectious disease epidemic, like SARS?

(10 marks)

6. i. Write short notes on the use of public funding to provide free mass cancer screening programs for at risk populations.

(5 marks)

ii. Write short notes on one of the following:

- Measures that governments can take to tackle the overweight/obesity epidemic

- Various tobacco control measures and their relative effectiveness

(5 marks)

END OF PAPER

QUESTION CONTINUES