



UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE

ALLIED HEALTH SCIENCES DEGREE PROGRAMME

SECOND B. PHARM PART II EXAMINATION – JUNE 2015

PH 2214: PHARMACEUTICS III (SEO)

TIME: 3 Hours

INSTRUCTIONS

- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

1.

1.1 Define the following terminologies

1.1.1 Pharmacoeconomics **(10 marks)**

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1.1.2 Cost-benefit analysis **(10 marks)**

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1.1.3 Cost effectiveness analysis **(10 marks)**

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1.1.4 Cost utility analysis **(10 marks)**

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1.1.5 Pharmacoeconomics

(10 marks)

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1.2 Describe briefly the limitations of clinical trials.

(20 marks)

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1.3 Discuss **three (03)** potential areas where pharmacoeconomics can be applied for better patient outcome.

(30 marks)

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2. Read the following abstract and then answer the given questions.

'Cancer Mortality and Residence near Electricity Transmission Equipment: A Retrospective Cohort Study'.

G. H. Schreiber et al, International Journal of Epidemiology, 1993; 22: 9-15.

Several studies in recent years have raised the possibility that exposure to extreme low frequency (ELF) electromagnetic fields may be hazardous to human health, in particular by the promotion or initiation of leukaemia and other cancers. To determine if this exposure creates a long-term hazard to the public, the mortality of a group of people identified as having lived in an urban quarter of Maastricht in which two 150 kilo Volt (Kv) power lines and one transformer substation are located was investigated. Using the Dutch population registry it was possible to identify retrospectively 3549 inhabitants of the quarter who lived there for at least 5 years between 1956 and 1981. Of these 1552 study subjects lived within 100m of the electricity transmission equipment and were exposed to magnetic field intensity of 1.0-11.0 milliGauss. The overall standardised mortality ratio and cancer mortality ratios were either not or only slightly elevated. The study does not support previously reported associations of exposure to ELF electromagnetic fields with leukaemia, brain cancer and breast cancer. Vital status of study subjects was ascertained from the Dutch population registry. Causes of death were obtained from the Dutch Central Bureau of Statistics.

2.1 What are the most important sources of bias in this study design that could potentially affect the internal validity of the study? For each bias, provide a brief description of how it might affect the results of this study in one or two sentences for each.

(50 Marks)

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3. In a randomized trial, investigators compared mortality rates in patients with bleeding oesophageal varices treated either by endoscopic ligation or endoscopic sclerotherapy. After a mean follow up of 10 months, 18/64 patients treated with ligation died, 29/65 patients treated with sclerotherapy died.

3.1 Compare the advantages of randomized controlled trial with cohort study.

(20 marks)

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3.2 Draw a 2 x 2 table to illustrate above research findings.

(20 marks)

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3.4 Interpret each of the result you calculated in 3.3.

(20 marks)

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