

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
FOURTH YEAR FIRST SEMESTER EXAMINATION in BPharmHons – 2022
PHAPE 4152 PHARMACOEPIDEMIOLOGY

Date: 11.03.2024

Time: 02 hours

ANSWER ALL FOUR QUESTIONS.

1 Pharmacoepidemiology is considered as the bridge between the fields of clinical pharmacology and epidemiology.

1.1 List two (02) applications of pharmacoepidemiology in the following aspects:

1.1.1 Drug discovery and development

(10 Marks)

1.1.2 Pharmacovigilance

(10 Marks)

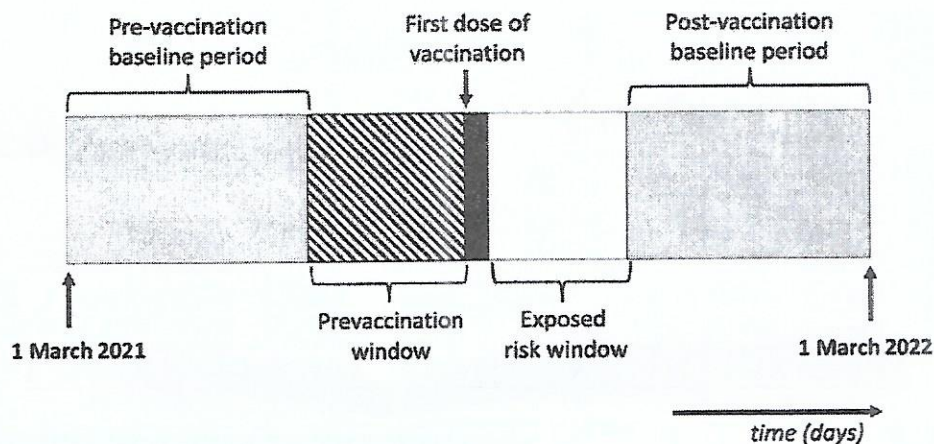
1.2 List three (03) advantages of pharmacy-based medical record linkage system.

(15 Marks)

1.3 List four (04) challenges in conducting pharmacoepidemiologic studies related to drug-induced birth defects.

(20 Marks)

1.4 The diagram below illustrates a study design for evaluating the adverse events following immunization among a group of individuals who have obtained their first-dose of a newly introduced COVID-19 vaccine between March 2021 and March 2022.



1.4.1 Name the pharmacoepidemiologic study design used in this study.

(05 Marks)

1.4.2 Briefly explain the steps to be followed in conducting this study.

(30 Marks)

1.4.3 List two (02) advantages of this study design.

(10 Marks)

2 You are requested to estimate the association between the duration and level of exposure to different classes of antihypertensives and subsequent occurrence of myocardial infarction among elderly patients with hypertension between 2010 and 2023.

2.1 Name the pharmacoepidemiologic method that can be used for this study. (05 Marks)

2.2 2.2.1 List two (02) advantages of the study mentioned in 2.1. (10 Marks)

2.2.2 List two (02) disadvantages of the study mentioned in 2.1. (10 Marks)

2.3 Name the possible method of risk measurement that can be used in the study mentioned in 2.1. (05 Marks)

2.4 Briefly explain the risk measurement method mentioned in 2.3. (20 Marks)

2.5. A Drug Utilization Review (DUR) can be used to compare the actual usage of a particular antihypertensive drug class with an established criterion among the above patients.

2.5.1 List three (03) main types of drug use indicators that can be used to assess the drug use pattern in this study providing an example for each. (15 Marks)

2.5.2 Briefly describe the steps involved in conducting a DUR. (35 Marks)

3

3.1 The following table depicts the results of a 7-year study in a sample of 8 patients. The researcher is following up these 8 healthy persons with an aim to analyze the incidence of disease 'A'.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Person 1	N	N	N	N	N	A	
Person 2	N	N	A				
Person 3	N	N	N	N	X	X	X
Person 4	N	D					
Person 5	N	N	N	D			
Person 6	N	N	N	N	N	N	N
Person 7	N	N	N	N	N	N	A
Person 8	N	N	N	X	X	X	X

N - Doesn't get the disease 'A'

A - Get the disease 'A'

X - Unable to follow the person

D - Person death

3.1.1 Define cumulative incidence and incidence rate. (20 Marks)

- 3.1.2 Calculate the cumulative incidence rate of the disease 'A' and interpret. (10 Marks)
- 3.1.3 Calculate the incidence rate of the disease 'A' and interpret. (10 Marks)
- 3.2 In a study of 1000 women of reproductive age, investigators observed the relationship between oral contraceptive use and venous thromboembolism. Of 500 women who have developed venous thromboembolism 400 had been using oral contraceptives whilst of 500 women who have not developed venous thromboembolism 300 had been using other contraceptive methods.
- 3.2.1 Prepare a 2 x 2 table base on the data is given in the study. (15 Marks)
- 3.2.2 Define relative risk and attributable risk. (20 Marks)
- 3.2.3 Calculate the relative risk and state your interpretation of the study. (15 Marks)
- 3.2.4 Calculate the attributable risk of the study. (10 Marks)

4

- 4.1 Name three (03) different Ad Hoc data sources used in pharmacoepidemiologic studies. (15 Marks)
- 4.2 Explain any two (02) Ad Hoc data sources mentioned in 4.1.and give one (01) example for each. (40 Marks)
- 4.3 List two (02) fundamental roles of hospital epidemiology. (10 Marks)
- 4.4 Briefly explain the two (02) fundamental roles of the hospital epidemiology mentioned in 4.3. (20 Marks)
- 4.5 List five (05) responsibilities of the infection control program in a tertiary care hospital. (15 Marks)