

UNIVERSITI TEKNOLOGI MARA

**UTILIZATION OF CALCIUM CHANNEL
BLOCKER DRUGS (CCBs) IN SERDANG
HOSPITAL – RETROSPECTIVE STUDY**

NORDIANA BINTI SHARIFF

Dissertation submitted in partial fulfilment of the requirement for the
Master of Pharmacy Practice

Faculty of Pharmacy

February 2016

CONFIRMATION BY PANEL OF EXAMINERS

I certify that a Panel of Examiners has met on 21st January 2016 to conduct the final examination of Nordiana binti Shariff on her Master of Pharmacy Practice dissertation entitled “Utilization of Calcium Channel Blockers in Serdang Hospital – Retrospective Study” in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiners recommends that the student be awarded the relevant degree. The panel of Examiners was as follows:

Dr. Neoh Chin Fen, PhD
Professor
Faculty of Pharmacy
Universiti Teknologi MARA
(Supervisor)

Yogheswaran Gopalan @ Gopal, PhD
Senior Lecturer
Faculty of Pharmacy
Universiti Teknologi MARA
(Examiner)

Mr. Khairil Anuar B. Md Isa
Lecturer
Faculty of Health Science
Universiti Teknologi MARA
(Examiner)

AISHAH ADAM, PhD

Professor
Dean
Faculty of Pharmacy
Universiti Teknologi MARA

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of University Technology MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledge as referenced work. This dissertation has not been submitted to any other academic institution or non-academic institution for any degree of qualification.

I, hereby, acknowledge that I have been supplied with Academic Rules and Regulations for Post Graduate, University Technology MARA, regulating the conduct of my study and research.

Name of Student : Nordiana Binti Shariff
Student I.D No : 2014883808
Programme : Master of Pharmacy Practice
Faculty : Pharmacy
Dissertation Title : Utilization of Calcium Channel Blocker (CCB)
Drugs in Serdang Hospital – A Retrospective
Study
Signature of Student :
Date : January 2016

ABSTRACT

Introduction: Hypertension is one of the most top leading of death and it is very high prevalent in world wide's population, mostly in geriatric. Hypertension is also one of the most costly diseases because of high health care expenditure. The utilization of antihypertensive drugs is higher and expensive. Drug utilization study can be used in providing the useful information to health care policy makers and clinicians in decision making. **Objective:** To describe the utilization of CCB drugs among the hypertension patients at Serdang's Hospital. **Methodology:** This is retrospective study and was conducted at the Outpatient Pharmacy Department in Hospital Serdang from January 2015 to March 2015. In this study, descriptive statistical analysis was used to analyse the patient's prescribing patterns and demographic data. Paired *t*-test was used to compare the effectiveness of Calcium Channel Blocker (CCBs) drug. Multivariate logistic regression analysis was performed to identify the factor associated with blood pressure goal attainments. **Results:** During this study, there were three drug of antihypertensive from Calcium Channel Blocker (CCBs) drug which has been prescribed to the patient, and they were Amlodipine, Felodipine and Nifedipine. The highest expenditure of CCBs drug was Felodipine with percentage is 92.9%, followed by amlodipine (7.0%) and nifedipine (0.1%). Overall CCBs a significant different between pre and post SBP was noted ($p = 0.014$ and 95% CI [4.5 (0.194 – 8.086)]) and also for DBP, a significant different between pre and post diastolic blood pressure was noted ($p = 0.014$ and 95% CI [2.49 (-0.308 -5. 288)]). In SBP and DBP, there were some significant results while simple logistic regressions were done. After multiple logistic performed only DBP showed there is statistically significant predictor in baseline characteristic that affecting to achieve BP goal attainment. The factors are family history ($p=0.010$), ethnicity ($p=0.042$), and concomitant Chronic Kidney Disease (CKD) ($p=0.044$). **Conclusion:** In this study, Amlodipine is the highest utilized, but Felodipine contributed the highest expenditure. CKD, family history and ethnicity showed as a strong factors influence achieving BP goal especially for DBP goal.

TABLE OF CONTENTS

CONFIRMATION BY PANEL OF EXAMINERS.....	i
AUTHOR’S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES	vii
LIST OF TABLES.....	vii
LIST OF ABBREVIATION	viii
CHAPTER 1.....	1
INTRODUCTION	1
1.1 BACKGROUND OF STUDY.....	1
1.2 PROBLEM STATEMENT	4
1.3 RESEARCH OBJECTIVE.....	6
1.4 RESEARCH QUESTION	7
1.5 SIGNIFICANCE/ RATIONALE OF THE STUDY	7
CHAPTER 2.....	8
LITERATURE REVIEW.....	8
2.1 PREVALENCE OF HYPERTENSION.....	8
2.2 DRUG UTILIZATION STUDIES.....	9
2.3 UTILIZATION STUDIES OF ANTIHYPERTENSIVE DRUGS.....	11
2.4 COST TREATMENT OF ANTIHYPERTENSIVE DRUGS.....	12
2.5 CALCIUM CHANNEL BLOCKER (CCB) DRUGS	13
CHAPTER 3.....	17
METHODOLOGY	17
3.1 STUDY DESIGN.....	17