

UNIVERSITI TEKNOLOGI MARA

**INCIDENCE OF MAJOR BLEEDING
AMONG ORAL ANTICOAGULANTS**

ZIRAN NADIAH BINTI GHAZALI

**MASTER OF CLINICAL
PHARMACY**

January 2017

AUTHOR'S DECLARATION

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

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

Name of Student : Ziran Nadiah binti Ghazali
Student I.D. No : 2015274262
Programme : Master in Clinical Pharmacy – PH770
Faculty : Pharmacy
Dissertation Title : Incidence of Major Bleeding among Oral Anticoagulants

Signature of Student :
Date : January 2017

ABSTRACT

Oral anticoagulant is widely used in Malaysia to prevent thromboembolic events. Commonly used oral anticoagulants in Hospital Putrajaya are Warfarin, Rivaroxaban and Dabigatran. In patient with atrial fibrillation, the risk of stroke increases to 5-fold in patients and use of anticoagulant therapy reduces the risk of stroke and all-cause mortality. Although proven to be effective, these oral anticoagulants can cause major bleeding. This study was carried out retrospectively in adult patients from INR Clinic with oral anticoagulant. The assessment parameter was incidence of major bleeding event. Among 113 enrolled patients, 19 had a first major bleeding event. It was found that age (OR 1.06; 95% CI 1.02, 1.11) and overwarfarinisation event (OR 1.91; 95% CI 1.26, 2.89) is significant to increase patient's risk to major bleeding. Comorbid of hypertension (OR 2.66; 95% CI 0.82, 8.63), congestive heart failure (OR 2.44; 95% CI 0.74, 8.00, renal impairment specifically stage 4 (OR 9.00; 95% CI 0.72, 113.02) and stage 5 (OR 6.00; 95% CI 0.42, 85.25), concomitant antiplatelet therapy (OR 0.43; 95% CI 0.13, 1.40), types of oral anticoagulant (novel anticoagulant vs warfarin) (OR 3.42; 95% CI 0.42, 27.58) and TTR (OR 0.96; 95% CI 0.93, 1.00) and other factors studied are not significant in this study. High risk patient should be identified based on the factors exist in them and monitored frequently to minimize the adverse effect of anticoagulant. Patient with first event of major bleeding and especially elderly should be monitored more stringently as they may develop subsequent fatal bleed.

Keywords: oral anticoagulant, warfarin, dabigatran, rivaroxaban, major bleeding, bleeding

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS.....	i
AUTHOR’S DECLARATION.....	ii
ABSTRACT.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
LIST OF ABBREVIATIONS.....	viii
CHAPTER 1.....	1
INTRODUCTION	1
1.1 Background.....	1
1.2 Problem Statement.....	2
1.3 Research Objectives.....	2
1.4 Research Question	3
1.5 Hypotheses To Be Tested	3
1.6 Significance of the Study.....	3
1.7 Scope and Limitation of Study	3
CHAPTER 2.....	4
LITERATURE REVIEW	4
2.1 Overview of oral Anticoagulant.....	4
2.2 Major bleeding with anticoagulant	7
2.3 Risk factor for major bleeding with oral Anticoagulant	9
2.4 Tools to Predict Bleeding Event for Patient on Oral ANTicoagulant.....	18
CHAPTER 3.....	20
RESEARCH METHODOLOGY	20
3.1 Study Design.....	20

3.2 Study Period.....	20
3.3 Study Flow Chart.....	20
3.5 Study Population.....	21
3.6 Sampling Method.....	21
3.7 Sample Selection.....	21
3.8 Sampling Size Determination.....	21
3.9 Data Collection and Definition of Clinical Characteristics and Outcome Measures.....	22
3.10 Data Analysis.....	27
3.11 Ethical Consideration.....	29
CHAPTER 4.....	30
RESULTS.....	30
4.1 Patients’ Social and Clinical Demographic Data.....	30
4.2 First Major Bleeding Event among Patients on Oral Anticoagulants.....	33
4.3 Relationship between Patient’s social, Clinical demographic Data and Anticoagulant Characteristics with major bleeding Events.....	36
CHAPTER 5.....	41
DISCUSSION.....	41
5.1 Major Bleeding Events.....	41
5.2 Risk Factors to Major Bleeding.....	42
5.3 Limitations.....	44
CONCLUSION.....	46
REFERENCES.....	47
APPENDICES.....	55
APPENDIX A.....	56
APPENDIX B.....	58