UNIVERSITI TEKNOLOGI MARA

SAFETY AND EFFICACY OF WARFARIN IN TREATING ATRIAL FIBRILLATION

MOHAMAD AMAL BIN SHAMSUL JASMI

Dissertation submitted in partial fulfillment of the requirements for the Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

2014

ACKNOWLEDGEMENT

TABLE OF CONTENT

ABSTRACT

Background: Warfarin is an oral anticoagulant that inhibits the synthesis of vitamin K in the body. It mainly acts as the prophylaxis of stroke for atrial fibrillation patients. This study aimed to evaluate the safety and efficacy of warfarin in the first six months of treatment by evaluating Time in Therapeutic Range of patients and evaluating $CHADS_2VASc$ and HASBLED score and their relationship to stroke and bleeding incidences. *Results and Discussions:* A total of 167 data of patients were collected retrospectively. In 157 patients, TTR were found to be outside its intended range (>75%) with 45 of them experienced bleeding in the first six months of warfarin treatment. While only two patients out of ten with TTR >75% experienced bleeding. None of these patients experienced stroke. Bleeding incidences were found to increase with increasing HASBLED score with bleeding occurring at score more than 3. There were a total of 47 patients experiencing bleeding incidences with 42 of them being minor bleeding. The highest identified occurring reason of INR readings out of range was found to be patient non-compliance which was seen in 46 patients. However, the cause was unidentified in 64 patients. *Conclusion:* There would be a problem maintaining TTR at >75% for the first 6 months. However for TTR less than <75%, bleeding incidence was found to be low which affects only 29% of them. No incidence of stroke was recorded. This shows that warfarin could be both effective and safe in the prevention of stroke in AF patients providing that proper management guidelines were followed.

CHAPTER 1

INTRODUCTION

1.1   Background of study

Atrial fibrillation causes arrhythmia or more commonly known as irregular heartbeat. It is a condition that occurs due to the abnormal electrical impulses of the heart that overrides the pacemaker. This will lead the heart to beat against its normal rhythm. It is reported that in Malaysia and Singapore, atrial fibrillation patients are increasing by 10% since 2007 (Omar, Teo, Foo, Han, Jamaluddin, Low, & Ong 2011). Patients with atrial fibrillation are at increased risk of getting stroke. One of the popular drugs used in the prevention of stroke in atrial fibrillation is warfarin. Warfarin is classified as anticoagulants and thrombolytics. It acts as an inhibitor of the synthesis of vitamin K-dependant coagulation factors VII, IX, X and II and anticoagulant protein C and its cofactor protein S ("Warfarin," 2012).

It should be known that warfarin has a narrow therapeutic index. Warfarin is on number three on list of drugs causing hospital admissions due to adverse effects (Pirmohamed, 2006). The monitoring of warfarin for in-patients is done according to the International Normalization Ratio (INR). INR reading for new patients on warfarin should not exceed 3.0. An ideal INR reading ranges from 2.0 to 3.0 in order to reduce the risk and severity of stroke in patients with atrial fibrillation. (Tanne, 2003). A reading higher than 3.0 indicates a higher risk of bleeding. New patients on their first three months treatment period are the main concern (Hylek, Evans-Molina,