UNIVERSITI TEKNOLOGI MARA

WARFARIN ANTICOAGULATION AND OUTCOMES IN PATIENTS WITH ATRIAL FIBRILLATION: A RETROSPECTIVE STUDY ON DIFFERENT TYPES OF MINISTRY OF HEALTH TREATMENT PROTOCOL

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Thesis submitted in fulfillment
of the requirements for the degree of
Master of Science

Faculty of Pharmacy

January 2017

ABSTRACT

Atrial fibrillation (AF) is a common cause of stroke, accounting for approximately 10% to 15% of all ischemic strokes and nearly a quarter of strokes for those older than 80 years. Warfarin is widely used oral anticoagulants for the treatment of AF and reducing the rate of stroke. Warfarin need frequent international normalized ratio (INR) monitoring and careful titration of warfarin doses. Literature has shown that warfarin therapy monitoring provided by a pharmacist could improve the patients' outcome. The research objective is to evaluate the clinical outcomes of warfarin therapy on different types of MOH treatment protocol. Primary endpoints included the mean time to therapeutic INR, the mean percentage of time in therapeutic range, bleeding events, and common drug interactions. We enrolled 151 patients from new warfarin patients diagnosed with AF. A retrospective, observational study was carried out in Selayang Hospital from 2009 to 2014. The INR and time in therapeutic range (TTR) levels in usual medical care (UMC) group and pharmacist-led warfarin medication therapy adherence clinic (WMTAC) after the implementation of MOH WMTAC protocol were compared. There were significant associations between UMC group and WMTAC group in TTR ($p = 0.01$) and INR ($p = 0.02$) levels. There was improvement in the pharmacists' involvement in the WMTAC where the pharmacists' recommendation accepted ($p = 0.01$) and expanded therapeutic INR range during WMTAC sessions ($p = 0.04$) were statistically significant higher in WMTAC group. Pharmacist's involvement in the WMTAC group enhances the effectiveness of the MOH Warfarin protocol.

ACKNOWLEDGEMENT

First and foremost, I thank The Almighty for giving me this opportunity to pursue my dream of working on my Masters in Science (Clinical Pharmacy) programme in Research. I would like to express my sincere gratitude to my supervisor Dr Long Chiau Ming for the continuous support, patience, motivation, enthusiasm and knowledge that he had rendered throughout my Masters programme. Without such a commitment, I would have encountered a more trying task of completing the study.

My co-supervisors, specifically Dr Neoh Chin Fen, Dr Tahir Mehmood Khan and Madam Shazwani Shaharuddin, also deserve my deepest sense of appreciation for their respective roles in making this thesis a memorable part of my career through their stimulating discussions and cooperation. Special appreciate also goes to the thesis examiners, Prof Dr Ab Fatah Ab Rahman and Prof Dr Noorizan Abd Aziz.

My parents Aidit Ghazali and Soraya Radzi have as usual provided me unconditional support and strength, especially during those instances when I faced my challenges that came along with my studies. My beloved husband, Mohd Hafiz Ruslan, has provided immense support and encouragement, especially during the sleepless nights when we shared the task of balancing family and career demands before various deadlines. I am also indebted to my aunty, Sarimah Radzi, for assisting me in refining my research inputs.

Last but not the least, I would like to thank my whole family and friends who had directly or indirectly supported me till the end of my Masters journey. Alhamdulillah.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF STUDY

A comprehensive pharmaceutical care that is patient-centric is vital in ensuring that patients receive rational, safe and effective treatment. Warfarin therapy monitoring provided by a dedicated pharmacist could improve patients' adherence and clinical outcomes (Bond et al. 2004; Bungard et al., 2011; Cronin et al., 2009; Donovan et al., 2006). Pharmacists emphasise medication management such as clinical pharmacokinetic consultations, laboratory monitoring, for example International Normalised Ratio (INR), and warfarin-dosage adjustment of relevant medications to improve the quality, safety and cost-effectiveness of patient care (Chen et al., 2013; Guerin et al., 2013; Jurado et al., 2013).

Warfarin is a type of Vitamin K antagonist that is demonstrated to be efficacious in the prevention of thrombosis in patients either at risk of, or with a history of, thrombotic events, for example patients with atrial fibrillation (AF) at risk of thromboembolism (Ibrahim et al., 2013; Ruff et al., 2014; Dlott et al., 2014). Warfarin is mainly used for the treatment and prevention of stroke, in particular for patients with AF and those with prosthetic heart valves (Neidecker et al., 2012; Reynolds et al., 2004; Waldo, 2002).

Initiating warfarin therapy is full of challenges. This is because there is a delay in the pharmacodynamic response and if one is to predict the response, it would be difficult to predict. Once the drug is administered, the anticoagulant and antithrombotic activity of warfarin will depend on the clearance of functional clotting factors from the systemic circulation (Kuruvila et al., 2001).

AF is an irregular rhythm or also called arrhythmia that can lead to blood clots that may cause stroke, heart failure and other heart-related complications. Patients who are diagnosed with AF are at a proportionally higher risk of stroke based on the accumulation of well-defined risk factors. Where men are concerned, they are 1.5 times more likely to develop AF as compared to women. Although AF is often