UNIVERSITI TEKNOLOGI MARA

SAFETY AND EFFICACY OF WARFARIN IN TREATING PULMONARY EMBOLISM

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ABSTRACT

Background: This study aimed to evaluate the safety and efficacy of warfarin in treating pulmonary embolism by evaluating the Time in Therapeutic Range with the incidence of bleeding and stroke among patients. *Results and discussions:*.A total number of 30 patients were included in this study. The TTR of 20 out of 30 patients were found to be outside of range (<75%) with 8 of them experienced bleeding. The 10 remaining patients recorded TTR more than 75% where 3 of them experience bleeding during their warfarin treatment. None of the patients from both group experienced stroke. There were a total of 11 patients who experienced bleeding with 10 of them being minor bleeding. The highest identified occurring reason of INR (International Normalized Range) outside of range was found to be drug-drug interactions which were seen in 9 patients. *Conclusion:* Warfarin treatment should be maintained within the targeted INR range to avoid its unwanted effect such as bleeding and stroke. Based on the findings of this study, it can be concluded that warfarin is effective in preventing stroke based on the absence of stroke incidence throughout the duration of this study. Maintaining the INR of patient within the targeted range can be a challenge since many factor can contribute to the alteration of INR. Although bleeding incidence were reported among patients in this study, most of the reported incidence involved minor bleeding while the major bleeding incidence was relatively low and there was no reported case of intracranial bleeding.

CHAPTER 1
INTRODUCTION

1.1 Background

Pulmonary embolism is a relatively common acute cardiovascular disorder with high early mortality rates. Although diagnosis and treatment has advanced over the past 30 years,morbidity rates of pulmonary embolism (PE) have not changed significantly. Pulmonary embolism can result in acute right ventricular (RV) failure, which is a life threatening condition due to pulmonary bed obstruction(Belohlavek, et al., 2013).

Decreased pulmonary vascular bed due to pulmonary-artery obstruction and circulating neurohumoral substances caused an in increased inright ventricular afterload. As right-ventricular and pulmonary artery pressure rise, the right ventricle dilates, becomes hypokinetic, and eventually fails. Progressive right-heart failure leads to reduced forward cardiac output and is the cause of death from acute PE in most cases (Goldhaber, 2004).

Warfarin is the most commonly prescribed vitamin K anticoagulant(VKA) for individuals at risk of thromboembolic events (Edwards et al., 2014). Warfarin inhibits vitamin K epoxide reductase, an enzyme that replenishes reduced form of vitamin K1 which is required for dependent gamma-carboxylation II, VII, IX and X. For outpatients, VKA therapy should be initiated with warfarin 10 mg daily followed