

EFFECTS OF PHARMACIST COUNSELING ON COMPLIANCE AND INTERNATIONAL NORMALIZED RATIO SCORE ON OUTPATIENTS RECEIVING WARFARIN AT DR. HASAN SADIKIN BANDUNG HOSPITAL WEST JAVA, INDONESIA

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ABSTRACT

Objective: Warfarin is a derivate of coumarin, which is usually prescribed as an oral anticoagulant for treatment and prevention of thromboembolic disorders. The aim of present research is to analyze the influence of pharmacist counseling on compliance and international normalized ratio (INR) score recovery on warfarin management.

Methods: Design in this research used mixed method, combination of qualitative and quantitative method. Qualitative data were used for completing quantitative data. Qualitative method used a content analysis with interview. Quantitative method used a quasi-experimental method with control groups, pre-test, and post-test design. Data were analyzed by Wilcoxon test and Mann-Whitney test at significance level $p < 0.05$ and multivariate analysis covariate.

Results: Data were collected from 80 patients with rheumatic heart disease (42.5%), atrial fibrillation (17.5%), deep vein thrombosis (10%), rheumatic mitral valve disease (10%), prosthetic heart (7.5%), other (22.5%). The numbers of patients whose INR was in the therapeutic range for each indication was not statistically different between before and after receiving counseling ($p > 0.05$). Patients' behavior compliance of warfarin therapy had increased after receiving the counseling service ($p < 0.05$). The result of presents research is pharmacist counseling affected behavior compliance before and after counseling ($p < 0.05$) but not for INR ($p > 0.05$).

Conclusion: Pharmacist counseling can improve behavior compliance but not improve INR target. The effect of warfarin to every individual not only affected by behavior compliance but also several factors could influence effect of warfarin is clinical factors, non-clinical factors, and genetic factors. Clinical factors that were influenced were age, gender, pharmacokinetic and pharmacodynamic variability in patients.

Keywords: Warfarin, Counseling, Compliance, International normalized ratio.

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INTRODUCTION

Warfarin was a differential of coumarin, usually prescribed as an oral anticoagulant to cure or prevent thrombotic diseases, namely, myocardial infarction, ischemic stroke, venous thrombosis, heart valve replacement, and atrial fibrillation [1]. Warfarin had a small therapeutic index and gave a big different response between individual and patient. Dosage insufficiency would lead to failure of preventing thromboembolism, while its overbalance would lead to bleeding risk [2]. Therefore, monitoring toward the success of warfarin therapy to each patient was required, measured with prothrombin time parameters, stated by prothrombin time-international normalized ratio (PT-INR). The study about PT-INR determination during warfarin consumption was examined exclusively, at least 4-5 times a week based on therapeutic dosage and stable INR score. The desired INR score was usually 2-3 based on the type of disease [3].

The previous study conducted by a researcher focused on monitoring of warfarin therapy through PT-INR parameter at a hospital in Bandung showed that the patient's INR score was below the range of 2-3. The highest weekly dosage use was 7 mg to 63 patients out of 80 patients, with the average INR score of 1.4. It exemplified that the dosage has not reached the target of INR [4].

Some research indicated that patients' lack of knowledge about warfarin and lack of training by medical personnel related to bad anticoagulant monitoring and increasing frequency of incident of bleeding side effect [5]. Patients' lack of knowledge about warfarin also related to patients' discompliance toward warfarin therapy. Discompliance is related to excessive variation of anticoagulant monitoring [6].

Noncompliance with drug therapy is manifested in numerous ways, such as failing to have a prescription filled, getting a prescription filled but failing to take the drug, taking only a portion of a prescribed drug, or not following the dose or frequency instructions. Preventing and correcting noncompliance with a drug regimen are crucial functions of pharmacists in their roles as practitioners of pharmaceutical care. In anticoagulation clinics, the pharmacist's role can be especially important because of the evidence linking warfarin noncompliance with negative outcomes. For example, one study showed that noncompliance (as measured by a pill count) of $< 80\%$ was significantly linked with severe thromboembolic events (transient ischemic attack, stroke). In another study, 28% of INR values above 6 (therapeutic range 2-3) were due to poor compliance, thus predisposing patients to an increased risk of hemorrhagic events [7].

Pharmacists are in a unique position to play a vital role in helping patients to cope up with their disease and make informed decisions regarding management and medication by patient counseling [8]. A study was proposed to analyze the influence of pharmacist counseling on compliance and INR score recovery on warfarin management.

METHODS

A study was conducted in the outpatient receiving warfarin at teaching Hospital DR. Hasan Sadikin Hospital, West Java, Indonesia, with the approval of the Institutional Ethics Committee and the consent of the study participants. The study population consisted of 80 patients who were divided into counseling group and control group. Inclusion criteria were outpatient of cardioclinic who applied warfarin therapy ≥ 3 months, aged ≥ 18 -year-old, had PT-INR data from laboratory,