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Investigating the rate of observing pre-caution observations by the patients on Warfarinreferring to the hospitals of Ahvaz City in 2014.

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ABSTRACT: Background: Oral anticoagulantmedications, which are prescribed to prevent thrombosis and embolism, have several side effects. Observing contingencies by patients could assist better prevention and control of the side effects. **Objectives:** This research aimed at determining contingency rate applied by the patients on Warfarinreferring to the hospitals of Ahvaz, Iran in 2014. Patients and Methods. This survey was a descriptive study in which 126 people were selected using convenience sampling from 5 hospitals in Ahvaz City. A five-section researcher-made inventory was used to collect the data, whose content validity was assessed through asking the comments of the experts. Later, Cronbach's alpha was utilized to assess the reliability of the inventory. The inventories were distributed in the units under study and after the data were collected, SPSS software was used to analyze the data. **Results:** Of 126 subjects, %42.8 were over 60 years old, ranging from 26-83 years and the mean of 55.71. Taking gender into account, %42.9 of the subjects were females and %51.7 were males. Overall, %29.8 of the patients on Warfarinapplied contingency poorly, %50.4 moderately and %19.8 fairly. **Conclusion:** Based on the moderate level of contingency applicationamong the patients, in order to instruct patients and implement instructional programs nursing managers are suggested to establish an instruction unit to solve patient's problems and decrease the treatment costs and imposed mental and financial burdens on them.

***Keywords*:** Warfarin,Safety, Anticoagulants.

INTRODUCTION

Nowadays medications are used to treat acute and chronic diseases. Drugs could help people lead healthy lives for longer time. Although medications are prescribed in high amount, it is still of high importance to understand that they should be taken with care (1). One of the most widely used drugs areoral anticoagulants (OAC) which have been prescribed to protect people who are on the verge of thrombosis and embolism (2, 3)

Hydroxycoumarin, one of the synthetic productions of Coumadin, supplied under the brand of Warfarin, is among the most well-known and highly used oral anticoagulants (2, 4). Approximately four million Warfarin prescriptions have been given in United States of America (5)

Nowadays Warfarin is applied to treat some diseases including Pulmonary emboli (PE), myocardial Infarction, Cerebro-vascular Accident, peripheral cardiac conditions, Heart Failure, Atrial Fibrillation, and mechanical heart valve implantation(2, 3).

Besides the undisputable advantages of Warfarin, however, this drug is notorious for possessing inconsistent therapeutical properties. It seems that certain factors such as receiving dosage, the duration of it, various individual properties, environmental circumstances, daily routine, type of the drugs, diet, etc. could alter the patients' physiological response to the anticoagulants through intensifying or moderating the anticoagulation effects of the medication (2). Hence, the patients must not take other the medications, specifically the over-the-counter ones. The

most dangerous drug interactions with Warfarin are those which heighten or decrease anticoagulation effects of Warfarin and give a rise to bleeding (6). Warfarin is among the top 10 life-threatening medications in the US. The data obtained from the emergency wards of national hospitals indicate that 29000 patients refer to the US hospitals because of bleeding due to the side effects of Warfarin (7).

It is believed that bleeding risk during the treatment period using Warfarin depends on the patient's cooperation, and other factors including gender, aging, lack of knowledge, genetic factors, during the first days of the treatment, especially first 90 days, background diseases, and coagulation test controls (8). Age is regarded as a risk factor. The research has shown that major bleeding risk among people over 75 years old is %5 more than that of young people (9). In order to decrease the side effects, patients are required to observe some cautions including diet, decreasing smoking, controlling coagulation tests 2 or 3 times a week at the beginning of the treatment period, when the patient's overall condition is stable (at least once a month), timely intake of the medication (10), consultation with the doctor prior to undergoing any surgery, or pregnancy to prevent any fetus abnormality (11), and safety observations (helmet, gloves, etc.) while working with sharp tools (12). The reports suggest that %5 of the people do not pursue their treatment. This results in 8-billion-dollar cost (13). The aim of keeping the patients on oral anticoagulants under surveillance is to maintain the quality of the medication in the effective dosage in order to prevent Thrombolytic implications, as well as bleeding. The proper method to control the intensity of anticoagulants is to measure InternationalNormalized Ratio (INR).

At the start of Warfarin treatment, IRN has to be measured twice or three times a week. The study conducted by Waterman et al. revealed that %23 of IRN rate for Warfarin regulation was beyond therapeutical scope, and %36 of the reasons was due to changes in diet and eating habits, failing to understand the accurate amount of the drug intake, forgetting to take the medications at the due intervals, not referring to the clinic, and alcohol indulgence among the patients (10).

As for the patients taking Warfarin, the possibility of side effects outbreak depends on the treatment pursuit out of the hospital. Hence, failing to adhere to treatment instructions and superficial consultation with the doctor have been detected as the major factors of inconsistent control in anticoagulant treatments (13).

The ignorance of the majority of patients about the side effects of this drug, and doctors and nurses' inattention to instructing the unaware patients have caused many patients to refer frequently to the physicians' office or curing centers due to incidence of bleeding or Thromboembolism (2) Therefore, observing precautions by these patients could contribute to better prevention and control of the above-mentioned side effects and through raising the awareness of the patients on this issues a great deal of financial and life loss caused by pursuit of treatment could be curbed. Since no data could be found on determination of the precaution rate among the Iranian patients who were taking Warfarin, this research was designed to specify the rate of precautions applied by the patients on Warfarin.

MATERIALS AND METHODS

This research was a descriptive study in which the precaution rates followed by the patients using Warfarin, who referred to the hospitals of Ahvaz City, Iran, in 2014, were investigated.

In this study, 126 patients were selected as the subjects of the study. The inclusion criteria were Warfarin intake for over a month, having instructions on Warfarin, being in good physical and mental health, ability to answer the questions, having been admitted in one of the hospitals of Ahvaz City during the study implementation, and agreeing to cooperate and participate in the experiment. The samples were selected using convenience sampling method. Based on the previous studies, pharmacological reference textbooks, and authentic papers, a researcher-made inventory was used, the first part of which included personal information (age, gender, marital status, education, type of disease). The second section encompassed pharmaceutical, nutritional and tobacco information, which drew on the Rouzbehan Inventory and Safety questions, which used reputable pharmaceutical text books. The inventory was revised by the researcher's supervisor teacher, advisor, statistical consulter, and five other lecturers of Islamic Azad University of Isfahan, Khorasgan Branch. Having done that, the final version of the inventory checklist was prepared, which included personal information section (8 questions), nutritional section (8 questions), safety (11 questions), and pharmaceutical section (9 questions), and smoking section (2 questions). SPSS software (ver. 21) was used to analyze the data. The volume of the sample needed for this research was calculated according the equation below with 0.05-alpha, the error of 5%, and the incidence of 91%. The result was 129 people.

$$n = \frac{(z_{1-\alpha/2})^2 p(1-p)}{d^2}$$

Cronbach's alpha was used to determine the reliability of the inventory, which was 0.87. Having determined the sample volume, validity and reliability of the inventory, and the university permission and submitting to 5 Ahavz hospitals including Imam Khomeini Hospital, Golestan Hospital, Tamin-e Ejtemaei Hospital, Naft Grand Hospital, and Private Hospital of Mehr, the researcher weekly (in the morning and evening) referred to emergency, CCU, internal, and surgical wards of the hospitals for four months. Having explained the aims of the research to each sample and gained informed consent, with the help of the ward and shift officials, the inventoried were filled out by the patients in bed.

RESULTS AND DISCUSSION

Results

Based on the personal information section, the samples included 72 (57.1%) males and 54 (42.9) females with the age mean of 55.1 and standard deviation of 14.15. 48 (38.1%) were 50 years old and under, while, %42.8 were over 60 years old. 4.8% were single, and 85.7% were married, 1.6% divorced, and 7.9% widowed. Taking occupation into consideration, 42.9% were housewives, 9.5% workers, 10.3% clerks, 0.8% unemployed, 16.7% retired, 3.2% disabled, and 16.7% self-employed. Regarding education, 32.5% were illiterate, and 67.5% were literate. 22.2% of the patients took Warfarin due to deep vein thrombosis, 19.8% due to brain stroke, 17.5% because of atrial fibrillation, 16.7% due to mechanical heart valve implantation, 11.1% for pulmonary emboli, 5.6% due to myocardial infarction, 2.4% for heart failure, and 4.8% for other reasons.

Table 1. frequency and frequency percentage of the participants in terms of applying nutrition-related pre-cautions

Level of observation	Frequency (percentage)
Poor pre-caution observations	31 (%24.6)
Moderate pre-caution observations	67 (53.2%)
Fair pre-caution observations	28 (22.2%)
Total	126 (100.0%)

Table 2. frequency and frequency percentage of the participants in terms of applying pharmaceutical pre-cautions

Level of observation	Frequency (percentage)
Poor pre-caution observations	22 (17.9%)
Moderate pre-caution observations	60 (48.8%)
Fair pre-caution observations	41 (33.3%)
Total	123(100.0%)

Table 3. frequency and frequency percentage of the participants in terms of smoking rate

Rate of Smoking	Frequency (percentage)
No smoking	100 (79.4%)
Smoking very few cigarettes	1 (0.8%)
Moderate cigarettes smoking	14 (11.1%)
High rate of cigarettes smoking	11 (8.7%)
Total	126 (100.0%)

Table 4. frequency and frequency percentage of the participants in terms of safety pre-cautions application

Level of observation	Frequency (percentage)
Poor pre-caution observations	17 (13.7%)
Moderate pre-caution observations	48 (37.7%)
Fair pre-caution observations	59 (47.6%)
Total	124 (100.0%)

Table 5. frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake

Level of observation	Frequency (percentage)
Poor pre-caution observations	36 (29.8%)
Moderate pre-caution observations	61 (50.4%)
Fair pre-caution observations	24 (19.8%)
Total	121 (100.0%)

Discussion

As it was shown in table 1, %53.2 of the people observed nutritional pre-cautions moderately, while %24.6 did not observe it. The primary reason of nutritional pre-cautions included diet precautions and having digestion problems and cultural effects. This was in accordance with the results found by Poursha'ban et al (2014). which revealed that

most of the patients of control group observed their diet (14). It, however, did not accord with the findings of the study done by Chenot et al(2014), in which 68% of the patients had no information on nutrition (15).

As it was shown in table 2, about %48.8 of the participants observed pharmaceutical pre-cautions moderately and only %33.3 observed pharmaceutical pre-cautions fairly. This was in accordance with the results found by Shuaibet al. (2014) which indicated that %56 of the patients were unaware of drug interactions, and did not observe the precautions accordingly. Furthermore, %73 of the patients did not inform the physicians or the pharmacists that were on Warfarin drug (16). This accorded with the results which Janoly et al. (2011) found, where only %22 of the patients was shown to know the side effects of Warfarin overuse and observed the pre-cautions (17). It seems that the similarities between the results of the above-mentioned studies were because the people used the medications without doctor's prescription and did not carry all their medications with themselves.

According to table 3, approximately %79.4 of the people were non-smokers which did not agree with the findings of study conducted by Shamsi and Ebadi titled as "Cardio-vascular risk factors in the elderly", where the smoking rate was %19.7 (18), while did not agree with the results found by Mollahosseini, Kahnouji, and Nikoubakht, in which smoking rate was about %55.33 among the patients with deep vein thrombosis (19).

According to table 4, only %47.6, of the participants had observed safety pre-cautions. Disagreeing with our findings, the study done by Hosseini et al could be mentioned, in which approximately %56.3 of hemophilic patients was found to observe preventive strategies related to side effects of the disease (20). Yet, our findings did accord with the study done by Brimnejad et al (2012), where %61.3 of the patients in control group do not pursue theirmedical and diagnosis experiments, which leads to %9.7 mortality and %6.5 hospitalization among them (13). The research by Chenot et al. showed that %35-%75 of the patients do not distinguish critical emergency situations; therefore, do not visit doctors which results inintensity o f the side-effects in them (15) revealed that the rate of smoking among the people.According to Table5 about %50.4ofthe participants observed pre-cautions moderately and only %19.8% of the participants observed pre-cautionsfairly.This was in accordance with the results found byJanoly et al (2011) stated that patient's knowledge and behavior acquired during their hospital stay are not enough to guarantee a safe treatment management upon discharge.

CONCLUSION

As for the main purpose of the research, i.e. rate of observing pre-caution observations by the patients on Warfarinreferring to the hospitals of Ahvaz City in 2014, it could be mentioned that the rate of the pre-cautions applied by the patients using Warfarin was moderate. Therefore, it is suggested that the Nursing directorsestablish a patient-instruction unit to implementwell-developed instructional programs and hold a course emphasizing drug interactionswith nonprescription medications, diet, realizing emergency situations in order to decreasethese patients' problems. A course could be included in the internal surgery curriculum concerning patient instruction to raise the students' awareness towards importance of patient instructions and therefore, indirectly, decrease the treatment costs and imposed mental and financial burdens on the patients.

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Authors' Contributions

Razieh Gholamhosseinzadeh: data gathering, transcription, typing and writing the manuscript; and Dr Mannani and Dr Zare; study guidanceand counseling at all stages of the research.

Conflict of interest

No conflict of interest has been expressed by the authors in this study.

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