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Investigating the Relationship between Individual Characteristics and the Rate of Regarding Pre-caution Observations by the Patients on Warfarin referring 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 the Relationship between Individual Characteristics and the rate of observing pre-caution observations by the patients on Warfarin referring to the hospitals of Ahvaz City in 2014.*

PATIENTS AND METHODS :*This survey was a Correlational 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, for data analysis SPSS 21, descriptive statistical test and Chi-square were used*

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 Warfarin applied contingency poorly, %50.4 moderately and %19.8 fairly.and a statistically significant association was found between the application of the precautionary based on gender ($p<0.05$), job ($p<0.05$) and the economic status ($p<0.05$). And inversely, there was not a significant correlation with age ($p>0.05$), marital status ($p>0.05$).*

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.*

I. 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 are oral 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 younpeople (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.

II. METHODOLOGY:

This research was aCorrelational 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).for data analysis SPSS 21, descriptive statistical test and Chi-square were used. The significance level was set to be 0.05 in all the statistical tests. 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 126 people.

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

(d 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.

III. 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. %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. In terms of the economy 6.4% were weak , 61.9% moderate and 31.7% good.

Table1 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%)

Table2 frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake and age

The application of the precautionary Age Group(years)	Poor Frequency(%)	modarate Frequency(%)	good Frequency(%)	P
<30	1(16.7%)	4(66.7%)	1(16.7%)	
31-40	5(27.8%)	7(38.9%)	6(33.3%)	.641
41-50	6(26.1%)	11(47.8%)	6(26.1%)	
51-60	10(41.7%)	11(45.8%)	3(12.5%)	
>60	14(28.0%)	28(56.0%)	8(16.0%)	

Table3 frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake andGender

The application of the precautionary Gender	Poor Frequency(%)	modarate Frequency(%)	good Frequency(%)	P
Male	26(38.8%)	32(47.7%)	9(13.5%)	.024
female	10(18.5%)	29(53.7%)	15(27.8%)	

Table4 frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake andMarital status

The application of the precautionary Marital status	Poor Frequency(%)	modarate Frequency(%)	good Frequency(%)	P
single	2(33.3%)	4(66.7%)	0(0.0%)	
married	30(29.1%)	52(50.5%)	21(20.4%)	.515

divorced	0(0.0%)	2(100.0%)	0(0.0%)
widowed	4(40.0%)	3(30.0%)	3(30.0%)

Table5 frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake andjob

The application of the precautionary occupation	Poor	modarate	good	P
	Frequency(%)	Frequency(%)	Frequency(%)	
workers	6(50.0%)	3(25.0%)	3(25.0%)	
clerks	9(69.2%)	3(23.1%)	1(7.7%)	.026
unemployed	1(100.0%)	0(0.0%)	0(0.0%)	
disabled	1(33.3%)	2(66.7%)	0(0.0%)	
self-employed	5(27.8%)	11(61.1%)	2(11.1%)	
housewives	10(18.5%)	29(53.7%)	15(27.8%)	
retired	4(20.0%)	13(65.0%)	3(15.0%)	

Table6 frequency and frequency percentage of the participants in terms of pre-cautions application on Warfarin intake and economic status

The application of the precautionary economic status	Poor	modarate	good	P
	Frequency(%)	Frequency(%)	Frequency(%)	
Economic situation of weak compactness	2(25.0 %)	3(37.5%)	3(37.5%)	
Economic situation moderate compactness	15(20.3%)	40(54.1%)	19(25.7%)	.006
Economic situation of good compactness	19(48.7%)	18(46.2%)	2(5.1%)	

IV. DISCUSSION

According to Table 1, 50.4% of precautions concerning Warfarin therapy among the patients were moderate and 19.8% was good, which represents the average knowledge of the patients on Warfarin, which accorded with the results obtained by Janvly et al. (2011) where it was stated that patients' knowledge and behavior while in hospital after discharge does not guarantee the safe treatment and disease management (14). The results in Tables 2 and 3 show a statistically significant relation between gender and precautions, yet no significant relation between age and precautions which is in agreement with the findings of the Van Damme et al. (2011) where it was indicated that there was no significant relationship between information needs and age (15). The results did not accord with those of Nasser et al (2011) in which increasing age had a negative effect on warfarin knowledge and, on the contrary, gender had no effects (16). It can be explained that the differences between the results of these investigations are due to differences in the population and the research environment. The results dispaled in Table 4 show no significant relationship between marital status and precautions, which is not in agreement with the results obtained by Riazi et al (2011).The results in Table 5 indicate that there was a significant relationship between the type of job and precaution observation, which accorded with the results obtained by Riazi et al (2011) in which it was shown that there was a relationship between the depression and the type of job. The results in Table 6 indicate that there was a significant relation between the economic status and observing the precautions which does not accord with the results found by With najibi et al (2013), which show food insecurity was significantly associated with economic situation (18).

V. CONCLUSION

It can be stated that the highest frequency rate of precaution observation among patients taking Warfarin was observed to be 50.4% at the moderate level. The results also showed that there was a significant relationship between the precautions associated with the drug warfarin, sex, occupation and economic situation in a way that women were more cautious than men. Workers and clerks were also less cautious about the recommendations than retired people and housewives. An inverse relationship was there between the use of discretionary recommendations and the economic situation, where the highest frequency was observed among the people with better economic status (48.7%) were less cautious concerning Warfarin usage observations. Therefore, it is

suggested that the nursing directors establish a patient-instruction unit to implement well-developed instructional programs and hold a course emphasizing drug interactions with nonprescription medications, diet, realizing emergency situations in order to decrease these 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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