Assessment of anti-coagulation knowledge in Sudanese patients with non-valvular atrial fibrillation

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ABSTRACT

Background: The most prevalent heart rhythm disorder in clinical practice is atrial fibrillation (AF) and is associated with increased cardiovascular morbidity and mortality and preventable stroke, accounting for more than 30% of admitted patients in hospital. **Objective:** The objective is to study the evaluation and assessment of antithrombotic drugs education in non-valvular AF Sudanese patients. **Materials and Methods:** This study was carried out across different Khartoum cardiac centers, in which 150 patients taking oral anticoagulants drugs were interviewed to assess their knowledge of antithrombotic therapy and they also asked if they were receive verbal and written information about how their therapy will be monitored. Validated questionnaire had been used for an interview. **Results:** Of 150 patients, 66.3% did not received any type of education about their drugs, purpose, action and side effect of therapy when they were initiated with anti-thrombotic therapy, and just (26.7%) were well educated about their medications. Furthermore, of 150 patients, 48.7% received antithrombotic education when they were admitted to hospital and 15.3% not decided. Findings also indicate that 64% of patients after they were discharged from hospital have a confirmed appointment schedule with the laboratory and 14% of patients indicated that pharmacists are available for consultations. **Conclusions:** This study demonstrate that, non valvular atrial fibrilliation Sudanese patients on warfarin therapy, INR is not regularly monitored and poorly controlled, and majority of them did not receive any sort of education about their antithrombotic therapy.

KEY WORDS: Antithrombotic Drugs; Atrial Fibrillation; Cardiovascular Morbidity; Arrhythmia

INTRODUCTION

Atrial fibrillation (AF) defined as the most prevalent persistent tachyarrhythmia and is associated with increased cardiovascular morbidity and mortality and preventable stroke. AF is most commonly associated with advanced age, hypertension, valvular heart disease, congestive heart failure, and coronary artery disease.[1]

Access this article online	
Website: http://www.ijmsph.com	**Quick Response code**
DOI: 10.5455/ijmsph.2018.0307604042018	

The most prevalent heart rhythm disorder in clinical practice is AF, accounting for more than 30% of admitted patients in hospital. Approximately more than 2 million people in North America and more than 4 million in the European Union have paroxysmal or persistent AF. However, hospital admissions for AF become greater nowadays because of the population aging process, high prevalence of cardiac diseases, availability of monitoring devices which facilitate patients' diagnosis, and many other contributed factors.[2]

The risk of stroke in patients taking warfarin will be reduced for more than 50%, but it has limitation such as bleeding and also requires a regular check for the INR, in order of that warfarin will not be a drug of choice for half of patients, who are treated according to antithrombotic drugs guideline.[3]

Recently, new non-Vitamin K antagonist oral anticoagulants drugs developed to directly inhibit factor X (Xa) activity, which is the main protein that stimulates thrombin.[4] Moreover, they are seemed to have the same effect of warfarin for stroke prophylaxis therapy with additional advantages including, ease of use, shorter half-life, and rapid action, and they are more safe than warfarin.[5]

Objective

This study is mainly carried out to examine and assess patients education and whether the essential information were obtained and readily available in useful form when prescribing, dispensing, and administering antithrombotic therapy.

MATERIALS AND METHODS

Study Design

This is a descriptive cross-sectional survey conducted in Sudan across different Khartoum cardiac centers, during October 2015 and the work continued till July 2017, in which 150 elderly Sudanese patients with a new or existing diagnosis non-valvular AF taking anticoagulants drugs were included. Patients with valvular AF were excluded from the study. The age of patients was ≥55 years old either male or female.

In this study, all patients were interviewed to assess their knowledge of antithrombotic therapy, and they also asked if they were receiving verbal and written information about how their therapy will be monitored and if they adhere to the prescribed treatment. The validated questionnaire had been used for an interview.

Ethical Consideration

The ethical principles on which this research was mainly carried out to make sure that:
- Respect for individuals (the study permission process ensures rights for all participants and confidentiality of data).
- Goodness (the intention to do no harm - to maximize possible benefits and minimize possible risks to participants).
- Justice (equality in distribution of research variables criteria).

It is in the interests of both the institutions (study populations) and researcher that research projects are reviewed and conducted ethically, both to protect the rights and welfare of research subjects and to enable international recognition for creditable institutional procedures. All patients' data were collected and reviewed after the approval of consultants and permission of hospital administration. All participants were informed about the nature of study and were informed that their participation in the study is voluntary, no names attached to the questionnaires. Also they informed that, all collected data will not support any decision will be used against them or harm them by any way.

Data Analysis and Statistics

Eventually, data were collected and statistical analysis was achieved using SPSS program version (IBM 20); frequencies and correlations were derived. The results were further tabulated, interpreted, and discussed, and figures were plotted using Microsoft Excel program (2013).

RESULT

In this study, 150 patients with AF were asked a number of questions to assess their knowledge and awareness of antithrombotic therapy and whether they were received all needed information about purpose action and side effect of the therapy.

As regard to patient's education assessment survey, majority of patients (66%) did not receive any type of education about their drugs, purpose, action, and side effects of therapy when they were initiated antithrombotic therapy, 27% educated about their medications, and 7% of patients partially received information. Less than half of the participants (42%) reported their knowledge about the specific drug being used including the generic and brand names, dose, frequency, and duration of use and 58% did not. Of total sample, 26% of patients received verbal and up-to-date written information about dietary measures and their effect on overall therapy goal, and 72% did not receive any information and 2% not decided, 49% of participants knew how warfarin therapy monitor and (49%) did not, and more than half of participants (59%) did not receive any information about signs and symptoms of bleeding or thromboembolic complication and 26% received. Furthermore, 27% of patients informed about drug and herbal interaction to avoid and 59% did not as shown in Figure 1.

As illustrated in Figure 2, 49% of patients were instructed that dose may change during the course of treatment based on their laboratory result and 36% did not. Furthermore, less than half (27%) of patients were instructed how to manage dose changes safely, 28% partially instructed, and 45.3% did not.

In a total of patients, 9% know the subcutaneous heparin products administration techniques, 41% know the techniques, and 50% did not. 49% received antithrombotic education when they were admitted to hospital, 15.3% partially educated, and 36% did not, as shown in Figure 3.
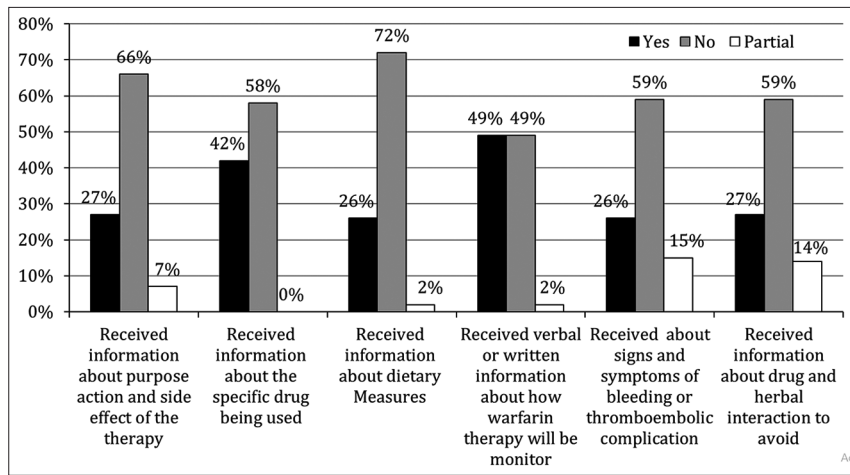
Figure 1: Distribution of patients when initiated antithrombotic therapy who received information about purpose action and side effect of the therapy, specific drug being used, dietary measures, how warfarin therapy will be monitor, signs and symptoms of bleeding or thromboembolic complication, drug and herbal interaction to avoid
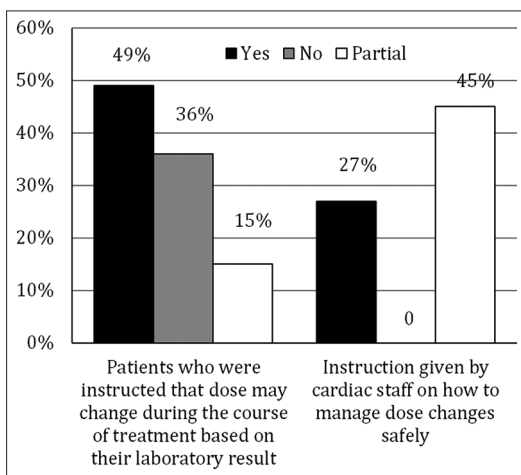

Figure 2: Distribution of patients who were instructed that dose may change during the course of treatment based on their laboratory result and instruction given by cardiac staff on how to manage dose changes safely
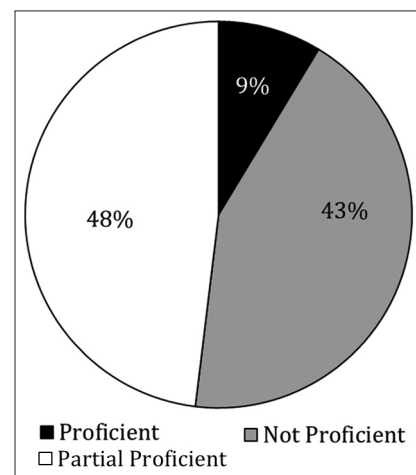

Figure 3: Patient on heparin products through the subcutaneous route at home show proficiency with the techniques and methods of drugs administration

Of total sample, 64% of patients after discharged from hospital have a confirmed appointment schedule with the laboratory, and 36% did not; 14% of 150 patients indicated that pharmacists are available for consultations and 84% answered that they did not receive any sort of information from pharmacists.

On the other hand, this study revealed that most of the patients are living outside of Khartoum and they did not return back to monitor their warfarin therapy.

DISCUSSION

This study mainly conducted to assess and evaluate Sudanese patients education on oral anticoagulant drugs and whether the essential information were obtained and readily available in useful form when prescribing, dispensing, and administering antithrombotic therapy.

Majority of patients (66.3%) did not received any type of education about their drugs, purpose, action, and side effect of therapy when they were initiated with antithrombotic therapy and just 26.7% were well educated about their medications. Furthermore, of 150 patients, 48.7% received antithrombotic education when they were admitted to hospital and 15.3% not decided. These results show that patient self-assessment of oral anticoagulant drugs has remained changeable, although of good proof of their effectiveness. A systemic review and meta-analysis of individual patient data was conducted to assess and measure the net clinical benefits of patients self-assessment oral anticoagulant drugs, in which several important differences were discussed, including an estimate of the effect on time to death, first major bleeding, and ischemic stroke, it stated that self-management of oral anticoagulation is the best choice for suitable patients of all ages.[6]

Findings also indicate that 64% of patients after they were discharged from hospital have a confirmed appointment

schedule with the laboratory, and this results in agreement with a recent study which compared between two major risk factors of anticoagulants drugs that block the action of Vitamin K (bleeding and stroke) in 1,30,000 people in whom stroke risk was assessed by both CHADS2 and CHA2DS2-VASc and bleeding by HAS-BLED.[4] 14% of patients indicated that pharmacists are available for consultations. All patients need to be fully educated about their oral antithrombotic therapy and they should also be informed of the major side effects, adverse reaction, and drug category advantages when they are initiated their therapy, in order that they can take the right decision about their drugs choice. It is also extremely critical to incorporate patient's opinion of their antithrombotic therapy to make sure that they will comply with their regimen and protect themselves from stroke and bleeding. Randomized controlled trial conducted to demonstrate whether the use of an audio booklet (AB) has an effect on the decision-making process of the study population, and if it will help them to be able to understand and differentiate between their therapies alternatives. It concluded that all patients with AF who had participated in a major clinical trial, the use of an AB decision aid upgraded their knowledge associated with different treatment options and gave them a good opportunity to decide which antithrombotic regimen they should follow and take.[7]

Of total sample, 49.3% of patients were instructed that the dose may change during the course of treatment based on their laboratory result. Other study stated that AF patients at high risk for stroke and with less susceptibility for bleeding who are received inadequate levels of thromboprophylaxis treatment need great effort by different health-care sectors to evaluate and assess their treatment pattern and measure the net clinical benefit of the therapy outcomes.[8]

This study demonstrates that patients are poorly educated about their antithrombotic therapy and neither physicians nor pharmacists exerted any effort to educate them.

This result is in agreement with what was reported in a study conducted in China, a total of 4,181 patients were recruited, and 3551 patients (85.6%) had non-valvular AF (NVAF). The prevalence of ischemic stroke/transient ischemic attack and systematic embolism was 15.2%. 3773 (91.1%) patients received antithrombotic therapy, while most (62.7%) of which received antiplatelet therapy only, and 35.5% received warfarin.[9] The major strength of this study was that information that was gained from AF patients taking warfarin has shown useful in understanding why most patients were susceptible for stroke and hemorrhage. Other strength addressed by the study was that all patients taking warfarin need more education about their therapy and also need close monitoring to be able to achieve the goal therapy target. One final strength of this study was that all data were collected without broking any ethical guidelines.

Recommendations

1. Study findings suggest raising the level of AF patient's awareness and education about their antithrombotic drugs therapy to overcome stroke events and decreasing bleeding risk associated with anticoagulation therapy.
2. Finally, anticoagulation center should be initiated in each hospital and activate the role of clinical pharmacists to educate patients and help physicians in antithrombotic drugs managing.

CONCLUSION

This study demonstrate that, non valvular atrial fibrillation Sudanese patients on warfarin therapy, INR is not regularly monitored and poorly controlled, and majority of them did not receive any sort of education about their anti-thrombotic therapy.

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