ORIGINAL ARTICLE

Assessing the Knowledge of Patients with Atrial Fibrillation Using Oral Anticoagulants Medications

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ABSTRACT

Aims: To evaluate patients' knowledge about atrial fibrillation (AF) and anticoagulants as well as to find out a relationship between the level of patients' knowledge and sociodemographic variables.
Methodology: A descriptive cross-sectional study was performed on patients with atrial fibrillation aged more than 18 years. The study started on October 13th, 2021, to April 25th, 2022. The sample consists of 90 AF patients on oral anticoagulants who were admitted at Al-Nasiriya Heart Center in Thi-Qar City. Jessa Atrial Fibrillation Knowledge Questionnaire (JAKQ) was used for the collection of data after getting written approval from its author.
Results: Only 6 out of 90 patients had good knowledge of AF, with a significant relationship between the level of patients' knowledge and their socio-demographic characteristics such as age, level of education, and occupation.
Conclusion: 62.2% of patients exhibited poor knowledge about AF. Patients who were aged less than 30, those with high education, and those who were employers demonstrated improved knowledge than other patients.
Keywords: Knowledge, Atrial Fibrillation, Anticoagulants.

INTRODUCTION

Atrial fibrillation can be defined as the most common type of arrhythmia that occurs in the upper chamber of the heart and is characterized by the generation of irregular and abnormal pulse, atrial fibrillation is associated with a twofold increased risk of mortality, and a fivefold increase in the risk of stroke development (1,2). The importance of the current study comes from the increased incidence and prevalence of atrial fibrillation over the world (3). In the last 50 years, the prevalence of AF has increased threefold according to FHS (Framingham Heart Study) statistics (4).

In 2016, the Global Burden of Disease research projected that 46.3 million people globally had atrial fibrillation (5). Patients who believe that they have a good level of understanding of AF will experience fewer symptoms, improving AF control, and decreasing distress to AF. According to new study suggestions, the atrial fibrillation burden can be minimized by improving the understanding of patients about arrhythmia, and also educating them about the importance of changing behaviors, and adopting a healthy lifestyle (6).

The statistics of the Ministry of Health in Iraq demonstrated that the prevalence of arrhythmia in Thi-Qar city increased from 693 in 2015 to 1109 in 2018, So this study is aimed at determining patients' knowledge gap, so that educational programs can be designed later to fill these gaps for achieving a better outcome.

The evidence suggests that patient compliance with mediation is improved if they knew the reason for prescription of that drug, what does it act in their bodies, what will happen if they do not comply with it according to the instruction of the doctor, its side effect, and any factor that interfere with its efficacy, while management of AF is optimized when the patient know what is the nature of his/her disease and its consequences (7)

METHODOLOGY

A descriptive cross-sectional study was carried out at Al-Nasiriya Heart Center which is a specialized cardiology center in Thi-Qar city, and it receives AF patients from all southern governorates as it is the most advanced center in the south of Iraq for the treatment of arrhythmia, where electrophysiological study and catheter ablation are conducted. The study started from the period of 13th October 2021 to 25th April 2022. Non-probability purposive sampling was used to select 100 AF patients on oral anticoagulant medications. Later, only 90 questionnaires were valid and statistically usable, and 10 questionnaires were invalid either because of a mistake in filling the questionnaire or because some questions had not been answered. The study instrument was

Jessa Atrial Fibrillation Knowledge Questionnaire (JAKQ) which was developed by researchers at Hasselt University in Belgium, the questionnaire was adopted and translated into the Arabic language after getting written approval for using it in the current study (8).

The JAKQ is a 16-item questionnaire. It consists of 8 questions about AF in general, 5 questions about oral anticoagulation therapy, and either 3 questions about vitamin K antagonists (VKA) or 3 about non-vitamin K antagonist oral anticoagulants (NOACS). The final three questions that are specific to the type of oral anticoagulant used were excluded from this study because they contain questions that did not fit the nature of the Iraqi population, as the prevalence of AF is increased in older adults who have difficulty in reading diagnostic tests in English language or know what does it means, so the final copy of the questionnaire consists of 13 questions only.

JAKQ consists of four multiple-choice for each specific question. One of them is the correct answer, two are distractors' answers, and one answer is the 'I do not know' (for not forcing the patients to guess the correct answer). Responses to the JAKQ should be dichotomized, so correct answers are scored 2 points, while 'I do not know' and incorrect answers are scored 1 point. To identify the overall patients' knowledge, the Mean score was divided into three levels (Poor = 13-17.33, Moderate =17.34-21.66, Good =21.67-26). A pilot study was done on 10 AF patients who were recruited from Al-Nasiriya Heart Center between the 10th to the 20th of January, 2022. The sample of the pilot study was excluded from the total study sample. The reliability of the study instrument was determined by using Cronbach's alpha coefficient which revealed that r = 0.71.

SPSS ver-20 and Microsoft Excel (2010) program were used to analyze this data and deal with it statistically, to find the relationships between the level of knowledge and socio-demographic variables, and obtain the final results of the research based on a set of statistical tests.

RESULTS OF THE STUDY

Table (1) represents that 26 (28.9%) of patients were within the age group (50-59 years), and 25 (27.8%) of patients were within the age group (60-69), while only 8 (8.9%) were older than 70 years. The female's record-high percentage of 46 (51.1%) as compared with those who are male patients 44 (48.9%). The level of patients' education demonstrated that 24.3 %of them graduated from elementary school 22 (24.3%), and a small percentage were recorded among those who are a diploma of 8 (8.9%). The housewives composed one-third of the studied sample 32 (35.6%),

followed by employer patients who were 17 (18.9%), while students got the lowest percentage which was 1 (1.1%). More than half of the study sample were urban residents 54 (60%).

Table 1: Descriptive Statistic of Sample Characteristics (N=90 AF patients)

Sociodemographic variables	Classification	F	%
Age/years	Less than 30 years	2	2.2
	30-40 years	8	8.9
	40-50 years	21	23.3
	50-60 years	26	28.9
	60-70 years	25	27.8
	70 and over	8	8.9
	Total	90	100.0
	Mean (std. deviation) 53.42 ∓ 11.52		
Gender	Male	44	48.9
	Female	46	51.1
	Total	90	100.0
Education level	Read and write	14	15.6
	Elementary school	22	24.3
	Secondary school	16	17.8
	Preparatory school	15	16.7
	Diploma	8	8.9

	Bachelors and above	15	16.7
	Total	90	100.0
Occupation	Employer	17	18.9
	Housewife	32	35.6
	Self -employ	27	30.0
	Retired	13	14.4
	Students	1	1.1
	Total	90	100.0
Residents	Urban	54	60.0
	Rural	36	40.0
	Total	90	100.0

F: Frequency, %: Percentage

Table 2: Overall Patients' Knowledge about Atrial Fibrillation

Knowledge	Freq.	%	M ± SD
Poor	56	62.2	
Moderate	28	31.1	6.71±2.756
Good	6	6.7	
Total	90	100.0	

F: Frequency, %: Percentage, MS: Mean of Scores, SD: Standard deviation

Table (3) Findings illustrated that (62.2%) of patients exhibited poor knowledge of atrial fibrillation at a Mean (±SD) = 16.71 (±2.756). Moderate level of knowledge was exhibited by (31.1%)of patients.

Table 3: The statistical relationship between the level of patients' knowledge and their sociodemographic characteristics.

Knowledge	Source of variance	Sum of Squares	d.f	Mean Square	F	Sig.
Age	Between Groups	.551	5	.110	2.679	.027
	Within Groups	3.452	84	.041		
	Total	4.003	89			
Educational level	Between Groups	1.209	5	.242	7.272	.000
	Within Groups	2.794	84	.033		
	Total	4.003	89			
Occupation	Between Groups	.477	5	.119	2.876	.028
	Within Groups	3.526	84	.041		
	Total	4.003	89			
Knowledge	Gender	Mean	SD	t-value	d.f	Sig.
Gender	Male	1.2850	.21982	.022	88	.983
	Female	1.2860	.20683			
Knowledge	Place of resi.	Mean	SD	t-value	d.f	sig
Place of residence	Urban	1.3177	.21760	1.785	88	.078
	Rural	1.2372	.19665			

SD: Standard deviation, t: t-test, d.f: Degree of freedom, p: Probability value≤ 0.05, F: F-statistic.

Table (4) demonstrated that there were significant differences in patients' level of knowledge with their age groups (p=0.027), as patients aged under 30 years significantly increased knowledge about atrial fibrillation. Findings demonstrated that there were significant differences between level of patients' knowledge (p=0.000) and their level of education, as patients with diploma degrees had improved knowledge than other levels of graduation. Concerning the occupation, findings demonstrated that there were significant differences between level of patients' knowledge (p=0.028) and their occupation, as Patients who are employers or students were significantly improved knowledge toward atrial fibrillation, unlike patients who are housewives. There were no significant relationships between patients' level of knowledge and their gender (p= 0.983) or place of residence (p=0.078).

DISCUSSION

A total number of (90) AF patients were included in the current study, the Mean of their age was 53.42∓11.52, with the most of patients 26(28.9%) were in the age group of (50-59) years. While patients aged between 60 and 69 years constituted 25 (27.8%) of the study sample. This result was agreed with a result of a study done in Egypt by Ellateef in which most participants were aged between (50 to 60) years (9). Our results differ from the results of a previous study which stated that about (50 %) of the participants were aged ≥ 60 years, and the Mean of their age was 56.2∓ 10.3 (7).

Concerning gender, the female got the highest participation rate (51%) than the males'. This is consistent with the result of a study in which the female participants were more than male 55.7% (10). Contraindicated the result of a study in which the male participants were (53.4% of) the study sample (11). Related to the educational level, the highest percentage of participants were patients who graduated from primary school (24.3%) followed by patients who graduated from secondary school (16.8%). These findings are greed with the findings of a study done by Bereznicki et al., in which patients who graduated from primary school (35.8%) were higher than in other graduation categories (12). Regarding the occupation of the study participants, most of the patients were housewives which represent (35.6%) of the study participants. The same result was obtained by Ibrahim et al., who found that the majority of participants were housewives (13).

Table 2 illustrated that only (31.1 %) of patients had a moderate level of knowledge about AF and their anticoagulant medications, while (62.2%) of patients exhibited poor AF knowledge. These findings are supported by a previous survey conducted by Hendriks who revealed that the level of understanding of atrial fibrillation and its management among patients was poor and insufficient (14). The results of our study are in contrast with the result of a study done in Egypt by Ibrahim et al., who stated that the majority of patients(80%) demonstrated a fair level of knowledge about atrial fibrillation and its self-care (13). This low level of knowledge may be related to decrease cognitive capabilities, especially in older adult patients, or a lack of

A. K. Al-Hameed, R. I. Abd, A. S. Handel

educational or instruction programs that aimed to increase patients' knowledge and awareness of AF.

Table 3 demonstrated a significant difference in the patients' level of knowledge with their age groups (p=0.027). The patient's age is considered an influencing factor in patients' level of knowledge about their AF. As being the patients aged less than 30years were recorded with the highest Mean score as compared with other age groups, while patients aged between 60 and 69 years recorded the lowest Mean score. These differences in the level of knowledge between young and old adults may be related to the good cognitive and understanding capacity in young adults, so they use technology such as searching on the website about their illness or the use of mobile health applications designed for AF, but this capacity is reduced in old adults because of cognitive impairment which develops with advancement in age. Another reason is that elderly patients may suffer from chronic illnesses, in addition to AF, and therefore it is difficult for them to keep up with all information about chronic illnesses they had. This finding came in conjugation with the finding of a previous study which revealed that the Mean knowledge score of patients who were middle age and young adults was significantly higher than those of patients who were older adults (13).

The education level had an impact on the patients' knowledge. There is a significant difference between the patient's level of knowledge and level of education (p=0.000), as patients with diploma degrees had the highest level of knowledge. These findings came in conjugation with the findings of a study in which the Mean score of knowledge in the highest education group was significantly higher than those in the lowest education group (9).

There was a significant relationship between the patient's occupation and the level of knowledge (p=0.028). Knowledge about AF was improved in patients who were employers, unlike housewives patients. This result came in agreement with the result of a study done in Egypt which revealed that patients who work demonstrated a high level of knowledge about atrial fibrillation in comparison with those who were housewives(9).

CONCLUSION

1   Male patients were more than females**.** The patients aged between 50 and 59 years were more than other age groups. The highest rate of participation was from patients with Elementary school graduation. Concerning occupation, one-third of patients were housewives. Patients from urban areas were more than those living in rural areas. More than one-third of patients had persistent AF. Most of the patients were at high risk of stroke.

2   Concerning patients' knowledge, the majority of patients had poor knowledge about atrial fibrillation.

3   There were significant differences between the patients' level of knowledge and their age, level of education, and occupation. Patients who aged less than thirty had more knowledge than the elderly, while patients with high diplomas exhibited more knowledge than other education groups. Patients who were employers or students were significantly more improved knowledge than housewives.

4   There was no statistically significant difference in patients' level of knowledge between males and females, and also their place of residence.

Recommendations: Based on the findings of the current study and its conclusions, the recommendations are:

1   An educational program, booklets, and in-person education sessions that focus on patients' knowledge about atrial fibrillation should be developed. These educational programs must take into account the differences between the patients' level of knowledge and their sociodemographic characteristics, so they should focus on some groups such as older patients, patients with a low level of education, patients who were housewives, or self-employer, and patients with paroxysmal atrial fibrillation as they demonstrated poor level of knowledge.

2   Increase focus on the role of nurses in providing patients teaching and develloping a plan of care upon discharge of the patient from hospital with emphasis on the importance of compliance with their medication and follow up visits.

3   Increase the focus on the role of the official media in developing audio and visual educational programs through TV or Radio to increase awareness of patients with atrial fibrillation and improve their attitude toward their AF.

4   Emphasis on the role of health promotion units and nurses in the hospitals and cardiac centers, so that their role is not limited to providing dietary restrictions, but also should include instructions about unhealthy behaviors that contribute to the deterioration of the AF patients' condition, with a focus on the importance of adopting a healthy lifestyle for controlling AF and achieving positive treatment outcome.

REFERENCES

1.   Chiang CE, Wu TJ, Ueng KC, Chao TF, Chang KC, Wang CC, et al. 2016 Guidelines of the Taiwan Heart Rhythm Society and the Taiwan Society of Cardiology for the management of atrial fibrillation. J Formos Med Assoc [Internet]. 2016;115(11):893–952. Available from: http://dx.doi.org/10.1016/j.jfma.2016.10.005
2.   Smet L, Heggermont WA, Goossens E, Eeckloo K, Vander Stichele R, De Potter T, et al. Adherence, knowledge, and perception about oral anticoagulants in patients with atrial fibrillation at high risk for thromboembolic events after radiofrequency ablation. J Adv Nurs. 2018;74(11):2577–87.
3.   Kornej J, Börschel CS, Benjamin EJ, Schnabel RB. Epidemiology of Atrial Fibrillation in the 21st. 2020;4–20.
4.   Schnabel RB, Yin X, Gona P, Larson MG, Beiser AS, Mcmanus DD, et al. 50 year trends in atrial fi brillation prevalence , incidence , risk factors , and mortality in the Framingham Heart Study : a cohort study. Lancet [Internet]. 2015;6736(14):1–9. Available from: http://dx.doi.org/10.1016/S0140-6736(14)61774-8
5.   Chamberlain AM. Heart Disease and Stroke Statistics — 2019 Update A Report From the American Heart Association. 2019. 1–473 p.
6.   Griffin JM, Stuart-Mullen LG, Schmidt MM, McCabe PJ, O'Byrne TJ, Branda ME, et al. Preparation for and Implementation of Shared Medical Appointments to Improve Self-Management, Knowledge, and Care Quality Among Patients With Atrial Fibrillation. Mayo Clin Proc Innov Qual Outcomes. 2018;2(3):218–25.
7.   Xu W, Sun G, Lin Z, Chen M, Yang B, Chen H, et al. Knowledge, attitude, and behavior in patients with atrial fibrillation undergoing radiofrequency catheter ablation. J Interv Card Electrophysiol. 2010;28(3):199–207.
8.   Desteghe L, Engelhard L, Raymaekers Z, Kluts K, Vijgen J, Dilling-Boer D, et al. Knowledge gaps in patients with atrial fibrillation revealed by a new validated knowledge questionnaire. Int J Cardiol [Internet]. 2016;223:906–14. Available from: http://dx.doi.org/10.1016/j.ijcard.2016.08.303
9.   Ellateef SA, Mohamed H, Soliman M. EVALUATION OF WARFARIN KNOWLEDGE IN PATIENTS WITH CHRONIC ATRIAL FIBRILLATION IN OUTPATIENT CARDIOVASCULAR CLINICS AT SPECIALIZED MEDICAL Mohamed Elsayed Hamed Elzeky , 2 Wafaa Ismail Sherief , 3 Amany Mohamed Abstract : Introduction : I : 2015;2(1).
10.   Crivera C, Nelson WW, Schein JR, Witt EA. Attitudes toward anticoagulant treatment among nonvalvular atrial fibrillation patients at high risk of stroke and low risk of bleed. Patient Prefer Adherence. 2016;10:795–805.
11.   Janion-Sadowska A, Sadowski M, Konieczyńska M, Skonieczny G, Metzgier-Gumiela A, Chrapek M, et al. Polish regional differences in patient knowledge on atrial fibrillation and its management as well as in patterns of oral anticoagulant prescription. Kardiol Pol. 2019;77(4):437–44.
12.   Bereznicki LRE, Chalmers L, Lee K, Bereznicki BJ. Anticoagulation knowledge in patients with atrial fibrillation : An Australian survey. 2018;(September 2017):1–14.
13.   Ibrahim RA, Allah N, Ahmed G. Knowledge and Self-care of Patients Recently Diagnosed With Atrial Fibrillation. 2019;6(2):23–45.
14.   Hendriks JML, Crijns HJGM, Tieleman RG, Vrijhoef HJM. The atrial fibrillation knowledge scale: Development, validation and results. Int J Cardiol [Internet]. 2013;168(2):1422–8. Available from: http://dx.doi.org/10.1016/j.ijcard.2012.12.047