Assessment of Awareness Levels About Anticoagulants in Patients With Atrial Fibrillation Presenting to Emergency Department

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Abstract

Atrial fibrillation (AF) is a rhythm disorder observed mostly amongst adults. AF has been regarded as one of the most important medical problems because it leads to thromboembolism and paralysis risks. Although warfarin has been used in the past to cope with this health problem, new oral anticoagulant medicines have replaced it in the last few years. The new oral anticoagulants, namely, dabigatran etexilate, rivaroxaban, and apixaban, are currently being used in daily clinical practice and treatment guidelines. Since AF patients are supposed to receive long-term oral anticoagulant therapy, it is extremely important to provide them with accurate information and appropriate training regarding the treatment to decrease oncoming complications.

This is a prospective study involving 168 patients who were admitted to the emergency department with AF and who were using oral anticoagulants. Findings indicate a lack of awareness in the patients regarding the effects and side effects of the drugs they take despite having been informed by the prescribing physician. We believe that informed action by patients with regard to the oral anticoagulants and their side effects will have an impact on the reduction in hospitalization observed. It will also make a substantial contribution to the quality of life of AF patients and to their use of medical services.

Introduction

Atrial fibrillation (AF) is a rhythm disorder observed mostly among adults. Also referred to as supraventricular arrhythmia, AF is an important medical problem, as it may result in stroke and thromboembolism. Warfarin, which has been used in the treatment of atrial fibrillation in the past, is being replaced by a new generation of oral anticoagulants [1]. The clinical use of warfarin is plagued by difficulties and restrictions because it requires dose adjustments, routine monitoring of patients’ international normalized ratio (INR) measurements, and is dependent on food-drug interactions. For this reason, a new generation of oral anticoagulants without any drug interactions has been developed that can be easily managed up in the follow-up of patients. Research has led to a new generation of oral anticoagulants, such as dabigatran etexilate (Pradaxa), rivaroxaban (Xarelto), and apixaban (Eliquis), which are currently used in daily clinical practice and treatment guidelines. While these drugs are as effective as warfarin, they don’t need additional dosage monitoring and have minimal food-drug interactions [2].

Guidelines recommend initiating warfarin or the new-generation oral anticoagulants in patients with atrial fibrillation who have a stroke risk. The common recommendation is to use the CHA2DS2-VASc (congestive heart failure, hypertension, age ≥ 75 years, diabetes mellitus, stroke or transient ischemic attack [TIA], vascular disease, age 65 to 74 years, sex category) scoring system to determine the risk of stroke and to initiate antithrombotic therapy when drug therapy is initiated [3]. The CHA2DS2-VASc score is a validated tool to predict the risk of stroke and systemic emboli in patients with non-valvular atrial fibrillation. Since patients with AF will have to receive oral anticoagulant medication for the rest of their lives, it is important that they are informed about warfarin and other new-generation oral anticoagulant therapy. It is also important that their skills regarding the same are increased. In this way, there is a significant decrease in the complications caused by the drugs [4]. The aim of our study is to examine the awareness about anticoagulant drugs taken in patients with atrial fibrillation admitted to the emergency room of a university hospital.

Materials And Methods

This is a prospective study of 168 patients with a diagnosis of atrial fibrillation, taking oral anticoagulants, who were admitted to a university hospital in the Çanakkale province. After obtaining the approval of the ethics committee, a questionnaire was administered to the patients in the emergency department by an emergency medicine specialist. The participants were interviewed face to face after giving them information about the purpose and content of the study. The questionnaire included 28 questions, including the duration
of oral anticoagulant medication taken, the side effects and interactions they experienced, and demographic data. Data were analysed using Statistical Package for the Social Sciences software, version 19.0 (IBM Corp., Armonk, New York, USA). Numbers, percentages, averages, standard deviations, minimums, and maximums have been used to present the metadata. Results were considered statistically significant if p<0.05.

**Results**

The study included 168 patients, 88 (52%) women, and 80 (47.6%) men. The average age was 70.1±10.3 years (min 38, max 89). Of the study group, 116 (69%) had completed primary school, 82 (48.8%) were housewives, 101 (60.1%) were non-smokers, and 126 (75.0%) had never tried alcohol before (Table 1).

| Variable   | n (%)       |
|------------|-------------|
| Education  |             |
| Illiterate | 27 (16.1%)  |
| Primary School | 116 (69.0) |
| High School | 19 (19.3)   |
| University | 6 (3.6)     |
| Occupation |             |
| Housewife  | 82 (48.8)   |
| Retiree    | 70 (41.7)   |
| Employee   | 16 (9.5)    |
| Smoking    |             |
| Smokers    | 15 (8.9)    |
| Non-Smokers| 101 (60.1)  |
| Ex-smokers | 52 (31)     |
| Drinking   |             |
| Drinker    | 10 (6.0)    |
| Non-Drinker| 126 (75.0)  |
| Ex-Drinker | 32 (19)     |

**TABLE 1: Demographic data**

Of the study group, 38 (22.6%) took 5 mg warfarin and 31 (18.5%) took 2 mg rivoraksaban. Of all patients, 43 (25.6%) had received anticoagulant treatment for 6-12 months, 26 (15.5%) for 1-6 months, and seven (4.2%) for one week to one month (Table 2).
### TABLE 2: Distribution of anticoagulant drugs

| Variables                  | n (%)   |
|----------------------------|---------|
| Warfarin 5 mg              | 38 (22.6) |
| Rivaroxaban 20 mg          | 31 (18.5) |
| Dabigatran 150 mg          | 22 (13.1) |
| Rivaroxaban 15 mg          | 22 (13.1) |
| Apixaban 5 mg              | 21 (12.5) |
| Dabigatran 110 mg          | 19 (11.3) |
| Apixaban 2.5 mg            | 15 (8.9)  |
| Duration of anticoagulant use |         |
| 1 week–1 month             | 7 (4.2)  |
| 1–6 months                 | 26 (15.5) |

Of all doctors who provided information about anticoagulant treatment, 131 (78%) were prescribing doctors, 18 (10.7%) were the doctor at the time of hospital admission, 18 (10.7%) were the doctor during outpatient control, and one (0.6%) was a family doctor. Of all patients, 114 (49.5%) suffered from hypertension, 37 (16.0%) suffered from diabetes mellitus, and 36 (15.6%) suffered from heart failure. Of all patients, 152 (90.5%) were receiving drugs in addition to anticoagulant treatment. Overall, 139 (82.7%) patients had no knowledge of the side effects of other drugs when taken with anticoagulants. Of all patients, 142 (82.0%) observed no side effects while receiving anticoagulant treatment, while eight (4.6%) reported excessive gingival and nasal bleeding, and eight (4.6%) observed large bruises and bumps on their bodies in the absence of any impact (Table 3).

### TABLE 3: Side effects observed during anticoagulant treatment

| Variables                                           | n (%)   |
|-----------------------------------------------------|---------|
| No side effects                                     | 142 (82.0) |
| Excessive gingival and nasal bleeding               | 8 (4.6)  |
| Large bruises and bumps in the absence of any impact on the body | 8 (4.6)  |
| Vomiting and oral bleeding, red in colour and in the form of coffee grounds | 4 (2.3)  |
| Fecal bleeding or tar-like bleeding                 | 4 (2.3)  |
| Cough and oral bleeding in the form of a pinkish foam | 3 (1.8)  |
| Excessive long-lasting genital bleeding with plenty of clots | 2 (1.2)  |
| Hematuria                                           | 1 (0.6)  |
| Allergic reactions                                  | 1 (0.6)  |

Ninety-nine patients (57.6%) forgot what effects they may encounter if the drug dose is forgotten, while 114 (67.9%) patients knew nothing about the consequences of excessive doses. Of patients in the study, 153 (91.1%) had no idea about the effects of other drugs on bleeding when taken with anticoagulant drugs, 159 (94.6%) knew nothing about how long it takes for the drug to be effective after being taken orally, and 158 (94.0%) had no idea when the duration of action would end after the drug was stopped. Of the patients, 28 (16.1%) stated that anticoagulant treatment is necessary for vascular diseases, 2 (1.1%) for heart failure, 10 (5.7%) for prosthetic heart valves, and 68 (39.2%) for cardiac rhythm disturbances. In total, 66 (37.9%) patients stated that they had no diseases that required anticoagulant therapy. 92.7% (n = 114) of patients using warfarin or using warfarin earlier were regularly monitored for INR. Of patients whose INR was regularly monitored, 95 (77.2%) had their levels checked once a month, while the remaining 12 (9.8%) had...
Conclusions

This is in line with other studies that the education given to the patient by the healthcare team has a positive contribution in informing the education related to warfarin and its side effects observed. Another study showed that patients' average information score rose to 8.1±1.2 from 4.7±2.8 after education on warfarin use, when patients were properly trained, a reduction in side effects was been in 17% of patients taking warfarin. In a study indicating the importance of patients receiving information patients had no side effects from taking new-generation oral anticoagulants. No side effects were reported prescribing physicians did not have much information about the use of new-generation oral anticoagulants comprising the study population and the advanced age group. Yaylacı et al. showed in their study that to appear, and when the effects would pass. This may be due to the low education level of the group have any information about the effects of the anticoagulant drugs they took, the time it took for the effects affected if they forgot to take their pills or take too high a dose. Similarly, we observed that they did not the patients were unaware of the interactions of the oral anticoagulants they used, and how they would be effect profiles, interactions with other drugs, and applying to the emergency department. Studies show that these three new-generation oral anticoagulants used to prevent stroke and systemic endpoints of AF do not cause worse outcomes than warfarin. It has been shown that new-generation oral anticoagulants are not affected by age, gender, or body mass index. It has also been suggested that they will be the first choice for anticoagulant treatment unless there is a contraindication. New-generation oral anticoagulants also do not require adjustment of the drug dose. In our study, we found that more than half of the patients had been using new-generation oral anticoagulants for more than one year.

In long-term oral anticoagulant treatment, it is important to raise the awareness of patients about side effect profiles, interactions with other drugs, and applying to the emergency department. In our study, we observed that 78% of the patients were informed by the doctor who prescribed the drug. However, most of the patients were unaware of the interactions of the oral anticoagulants they used, and how they would be affected if they forgot to take their pills or take too high a dose. Similarly, we observed that they did not have any information about the effects of the anticoagulant drugs they took, the time it took for the effects to appear, and when the effects would pass. This may be due to the low education level of the group comprising the study population and the advanced age group. Yasilac et al. showed in their study that prescribing physicians did not have much information about the use of new-generation oral anticoagulants and warfarin and the side effects of anticoagulant drugs used for treatment. In our study, 82% of the patients had no side effects from taking new-generation oral anticoagulants. No side effects were reported in 17% of patients taking warfarin. In a study indicating the importance of patients receiving information and education on warfarin use, when patients were properly trained, a reduction in side effects was been observed. Another study showed that patients' average information score rose to 8.1±1.2 from 4.7±2.8 after education related to warfarin and its side effects. In a study conducted with warfarin, it was shown that the education given to the patient by the healthcare team has a positive contribution in informing the patient. This is in line with other studies. In severe clinical conditions caused by warfarin, the new-generation oral anticoagulants can safely be used as an alternative in treatment.
Guidelines updated by the American Heart Association specify that warfarin (proof level I-A), dabigatran (proof level I-B), rivaroxaban (proof level IIa-B), and apixaban (proof level I-A) are drugs of preference in AF treatment. In addition, European guidelines state that new-generation anticoagulants are superior to warfarin (proof level II-A). Informing the patient about the oral anticoagulants they take and their side effects will reduce hospitalization as well as contribute to a better quality of life and medical service use of AF patients. When patients start taking oral anticoagulants, information about the drug should be given and educational activities should be continued during the controls. The continuity of the education provided should be ensured. In particular, the awareness of patients about warfarin use should be increased. If the targeted INR cannot be achieved and complications arise, then the use of new-generation oral anticoagulants should be considered instead of warfarin therapy.

**Additional Information**

**Disclosures**

**Human subjects:** Consent was obtained or waived by all participants in this study. Clinical Research Ethics Committee, Çanakkale Onsekiz Mart University Rectory issued approval 18920478-050.01.04/E.135445. Karar Tarihi: 15.11.2017 14:00 Karar No: 2017-18 Karar-04)2011-KAEK-27/2017-E.116347 no’lu araştırma ile ilgili olarak, proje yürütücüsü Yrd. Doç. Dr. Canan AKMAN‘ın çalışması Etik Kurul tarafından değerlendirilmiş olup; yapılan oylamada ‘ETİK KURUL ONAYINI ALIR’ kararı verilmiştir. Prof. Dr. Öztürk ÖZDEMİR Başkan. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the three previous years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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