ÖZGÜN ARAŞTIRMA ORIGINAL RESEARCH

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PERMANENT ATRIAL FIBRILLATION IS RELATED WITH AN INCREASE IN DEPRESSION AND ANXIETY DISORDER IN TURKISH POPULATION

TÜRK POPÜLASYONUNDA KALICI ATRİYAL FİBRİLASYON ARTAN DEPRESYON VE ANKSİYETE BOZUKLUĞU İLE İLİŞKİLİDİR

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Öz

Amaç

Bu çalışmanın amacı Türk popülasyonunda Kalıcı Atriyal Fibrilasyon (AF) ve depresyon/anksiyete bozukluğu arasındaki ilişkiyi araştırmaktır. AF hastaları ve ilişkili faktörler yanısıra anksiyete/depresyon üzerine etkileri sınırlı olduğundan daha fazla verinin keşfedilmeye ihtiyacı olduğunu düşündük.

Gereç ve Yöntem

Bu çalışmaya kalıcı AF'si olan ardışık 45 hasta ve 45 kontrol grubu (sinüs ritmi) dahil edildi. Tüm katılımcılar Beck Depresyon Ölçeği (BDÖ) ve Hamilton Anksiyete Ölçeği'ni (HAÖ) doldurdu. Duygudurum bozuklukları ve depresyonu değerlendirmek için BDÖ kullanıldı. Anksiyete düzeyinin şiddetini ve belirti dağılımını değerlendirmek için HAÖ kullanıldı. BDÖ ve HAÖ iki grup arasında karşılaştırıldı.

Bulgular

İki çalışma grubu arasında klinik ve demografik özellikler açısından fark yoktu. Kalıcı AF'li hastalarda ortalama BDÖ ve HAÖ skorları anlamlı olarak yüksekti (p< 001).

Sonuç

Çalışmamız, Kalıcı AF'li hastaların kontrol grubuna göre daha yüksek BDÖ ve HAÖ skorlarına sahip olduğunu göstermektedir. Bildiğimiz kadarıyla çalışmamız Türk popülasyonunda kalıcı AF ile depresyon/anksiyete bozukluğu arasındaki ilişkiyi inceleyen ilk araştırmadır.

Anahtar Kelimeler: Anksiyete bozukluğu, Atrial fibrilasyon, Depresyon

Abstract

Objective

The aim of this study was to explore the relationship with Permanent Atrial Fibrillation (AF) and depression/anxiety disorder in Turkish population. We thought that more data exploring needs of AF patients and the associated factors as well as the impact of anxiety/depression on needs are limited.

Material and Method

Forty-five consecutive patients with permanent AF and forty-five control group (sinus rhythm) were enrolled in this study. All participants completed Beck

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Depression Scale (BDS) and Hamilton Anxiety Scale (HAS). BDS was used to evaluate mood disorders and depression. HAS was used to evaluate severity of anxiety level and symptom distribution. BDS and HAS were compared between two groups.

Results
There was no difference between two study group in terms of clinical and demographic characteristics. Mean scores of BDS and HAS were significantly higher in patients with permanent AF (p< 001).

Conclusion
Our study demonstrates that patients with Permanent AF had higher BDS and HAS scores compared to control group. In our knowledge our study is the first research that examining the relationship between permanent AF and depression/anxiety disorder in Turkish population.

Keywords: Anxiety disorder, Atrial fibrillation, Depression

Introduction

Atrial fibrillation (AF) was determined more than a century and it is the most widespread cardiac arrhythmia in clinical practice in worldwide (1). AF affects 2.5-3.5% of populations in many countries, and the estimated prevalence of AF is 33.5 million individuals (2). In previous studies geographical variations were reported about AF. These studies showed that AF prevalence in countries with good socio-economic status was higher than lower ones (3). This rhythm disorder is more common in advanced ages (4). The most common AF type is permanent AF-40–50% of AF patients- about 20–30% of AF cases, it arises after the paroxysmal or persistent AF (5). Regardless of type, this arrhythmia is associated with high health care spendings (long hospitalizations and frequent admissions to the emergency department), uncontrolled hypertension (6), increased risk of cerebrovascular accidents (7), high morbidity and mortality (1, 5). Chronic process of AF including unexpected onset or repetitive events, different symptoms (shortness of breath, chest discomfort, palpitations), long and detailed treatment and several daily limitations may trigger anxiety and depression (8-10).

The most common psychiatric disorders in routine clinical practice are depression and anxiety disorders. These disorders occur more frequently in patients with somatic disease and often accompany each other (8). Decreased quality of life (QoL), inadequate functional capacity, and metabolic damage directly caused by organic diseases such as AF are the main causes of depression. (7). We thought that there is insufficient data about the association with permanent AF and depression /anxiety disorders. The purpose of this study is to explore the relationship with AF and depression, anxiety disorder in Turkish population.

Material And Method

Patients Selection
Forty-five patients with permanent AF and forty-five control group with sinus rhythm (SR) were enrolled in this study consecutively. The patients were followed up between October 2022 and November 2022 prospectively. Persistent AF was defined as AF that was long-standing, usually lasting more than one year, and that could not be restored to sinus rhythm or cardioversion had not been attempted (11). All patients and controls answered the Beck Depression Scale (BDI) and Hamilton Anxiety Scale (HAS). All study patients were questioned in terms of age, gender, smokers, and comorbidities (hypertension, hyperlipidemia, diabetes mellitus). Those under the age of 18 or those under follow-up with any major psychiatric disorder or using any psychiatric medication were excluded from the study.

Complete blood count and biochemical parameters were examined, electrocardiogram and echocardiogram were performed in all patients and control group. The participants were given detailed information about our research by us. Then, an informed consent form was signed by the participants. The study was prepared in accordance with the Declaration of Helsinki and was approved by the ethics committee for clinical research at Suleyman Demirel University Medical Faculty (Date: 27/10/2022, No: 291).

Beck Depression Scale
BDS is one of the frequently used scales in the evaluation of mood disorders and depression (10). BDS consists of 21 questions. 15 of these questions are related to emotional stress and 6 of them are related to psychosomatic symptoms and this questionnaire is filled by the patient. The scoring of each question is between 0 and 3. Higher BDS scores on the scale indicate more severe depression (10).

Hamilton Anxiety Scale
HAS calculates the prevalence of anxiety symptoms and the severity of the anxiety levels. It is a test made by the researcher and includes 14 questions including mood and psychosomatic symptoms. In HAS, each item is scored with a 5-point Likert-type scale ranging from 0 to 4. Patients should perform the test within 72 hours of admission (6).

Statistical Analysis
Statistical Package for Social Sciences software (SPSS 22, Chicago, Illinois) was used for statistical evaluation. Continuous variables were represented as mean ± standard deviation. Categorical variables were represented as numbers and percentages. The normal distribution test of the candidates included in the study was performed using Kolmogorov-Smirnov. Chi-square, paired-sample correlations, and t-tests were used to compare related variables with each other. Differences were considered significant at a P value of <0.05.

Results

A total of 90 patients (47 women; mean age 69.5 ± 7.4 years) were included in the study. 45 patients with permanent AF and 45 patients with SR as control group. Table 1 shows basic demographic and clinical characteristics of all study patients. There is no significant difference in the demographic and the clinical characteristics of two groups (p >0.05). Table 2 shows the laboratory parameters of study patients. There is no significant difference between groups in laboratory findings (p >0.05). Table 3 shows comparison of mean values of BDS and HAS in the study groups. Mean scores of BDS (16.1 ± 4.2 vs 10.7±2.8, P < .001) and HAS (16.7 ± 4.1 vs 12.2 ± 3.6, P < .001) were significantly higher in patients with permanent AF.

Table 1 Demographic and Clinical Characteristics of Study Participants.

Variables	Permanent AF group (n=45)	Control group (n=45)	p value
Age, years	70.3 ± 9.4	68.8 ± 4.9	0.341
Female, n (%)	23 (51.1)	24 (53.3)	0.833
Smoking, n (%)	3 (6.7)	4 (8.9)	0.694
Hypertension, n (%)	27 (60)	19 (42)	0.092
Hyperlipidemia, n (%)	8 (17.8)	7 (15.6)	0.777
Diabetes Mellitus, n (%)	7 (15.6)	4 (8.9)	0.334

Table 2 Laboratory Parameters of Study Participants.

Variables	Permanent AF group (n=45)	Control group (n=45)	p value
Fasting glucose, mg/dL	103.1±16.2	101.5±11.5	0.58
Blood urea nitrogen, mg/dL	16.0±3.7	15.7±3.9	0.67
Creatinine, mg/dL	0.96±0.17	0.94±0.14	0.59
Hemoglobin, g/dL	14.1±1.4	13.9±1.4	0.56
Thyroid stimulating hormone, mg/dL	1.24±0.67	1.03±0.63	0.13
Ejection Fraction, (%)	62.8 ± 3.5	63.9± 2.2	0.080

Table 3 Comparison of BDS and HAS in Study Patients

Variables	Permanent AF group (n=45)	Control group (n=45)	p value
Beck Depression Scale	16.1±4.2	10.7±2.8	<0.001
Hamilton Anxiety Scale	16.7±4.1	12.2±3.6	<0.001

p < 0.05 was accepted as statistically significant

Discussion

The present study was showed that patients with permanent AF, mean score of BDS and HAS questionnaire was significantly more than control group.

Depression is seen as one of the most common psychiatric diseases seen in routine clinic and causing significant morbidity. It is an important clinical condition that increases the mortality rate and hospitalization rate in patients with other clinical conditions (11). The prevalence of major depression in studies was found to be 9% to 16% in outpatients and 5% to 10% in inpatients with organic disorders (12). Depression was more frequent in our study patients with permanent AF.

It may be related to the decrease in eating and drinking, deterioration in the amount of sleep quality, fatigue and limitation of physical activity, psychosomatic and psychological problems such as anxiety and depression, especially in the follow-up of patients who have undergone cardiac surgery, within 6 months after discharge (13).

The relationship between biobehavioral physiological stress and clinical cardiac arrhythmias has been studied previously (14, 15). The patients with persistent and paroxysmal AF have significantly lower QoL compared to normal healthy controls (16, 17). In another study, 30 percent of patients with AF had higher depression and anxiety scale scores, and depression-related symptoms were the strongest independent risk factor for future QoL in these patients (18). Moreover, Eaker et al. found that hypertension in male patients was significantly related to the burden of AF. Also, anxiety was significantly associated with total mortality (19).

In addition, Sang et al. were showed that there was a positive correlation with Increase of depression, anxiety, and QoL and AF therapies especially catheter ablation in such patients (20).

Most studies evaluate depression and anxiety in patients with heart disease have been conducted in a chronic coronary syndrome population (21, 22). Our patients had no known coronary artery disease. Depression and anxiety rates are high in chronic diseases (hypertension, diabetes, etc.) (21). In our study, the rate of chronic disease was similar between the groups.

Dabrowski et al. also demonstrated that patients with AF have higher rates of depression disorder than general population by Using the BDI. In our study, level of depression scores was higher in patients with permanent AF. Dabrowski et al. also founded that women have AF significantly effected from depression, sleeping disorders, and physical symptoms than males (23). But in our study, there is no statistical significant difference in gender groups.

There is a complicated relationship between depression, anxiety, and AF (8). AF can cause depression and anxiety, whereas depression and anxiety may create such an environment where AF will be more easily established. We think that further studies are needed because of the complexity of this situation.

Conclusion

Our study demonstrates that patients with AF had higher BDS and HAS scores compared to control group. This study, which is one of the limited numbers of studies examining the relationship between permanent AF and depression/anxiety disorder in Turkish population.

Main Points

1.Atrial fibrillation is the most common cardiac arrhythmia in cardiology practice.

2.There are many somatic diseases like atrial fibrillation that can lead to depression and anxiety disorders.

3.Patients with atrial fibrillation have higher Beck Depression and Hamilton Anxiety Scales scores.

4.We recommend that patients with atrial fibrillation be consulted to the psychiatry department for the evaluation of depression and anxiety disorders.

Acknowledgment
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Conflict of Interest Statement
The authors have no conflicts of interest to declare.

Ethical Approval
Süleyman Demirel University Faculty of Medicine Clinical Research Ethics Committee was approved this study (27.10.2022/No: 291). The study was conducted in line with the principles of the Helsinki Declaration.

Consent to Participate and Publish
Written informed consent to participate and publish was obtained from all individual participants included in the study.

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Availability of Data and Materials
Authors can confirm that all relevant data are included in the article.

Authors Contributions
B.A.U: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Validation; Visualization; Writing-original draft.

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