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Hidden details in cases with palpitation complaints: Type D personality depression and anxiety

Çarpıntı şikayeti ile başvuran olgularda gizli kalmış ayrıntılar: D tip kişilik depresyon ve anksiyete

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Abstract

Aim: In patients with complaints of palpitation and where an organic cause cannot be determined, the rate of type D personality and depression and anxiety scores are unknown. Knowing these may contribute to the understanding and treatment of the etiology of the palpitation.

Methods: Patients who applied to Cardiology Polyclinic with palpitation complaint, whose possible organic etiologies of the palpitation were excluded and those over 18 years old were included in the study. Sociodemographic data form, Type D Personality Scale, Hospital Anxiety and Depression Scale were used in the study.

Results: Depression scores were higher in the patient group ($p<0.05$). When the mean distribution of anxiety scores were examined, no significant difference was found between the groups. D type personality was detected in 60% of the patient group and 22% of the control group. When the results of Spearman's correlation analysis made for the relationship between type D presence of patient and control group and age, gender, marital status, depression and anxiety scores were examined, there was a negative, weak and significant relationship between type D presence and educational status in the patient group ($p<0.05$). There was a strong positive correlation between type D presence and depression and anxiety scores in the patient and control group subjects ($p<0.05$).

Conclusions: Knowing that type D personality and depression which are proven to affect many cardiologic diseases are also frequent in palpitation may help better understanding and treatment of palpitation.

Keywords: Anxiety, Depression, Palpitation, Type D personality

Öz

Amaç: Çarpıntı şikayeti olan ve organik bir neden tespit edilemeyen hastalarda, D tipi kişiliğin oranı ve depresyon, anksiyete puanları bilinmemektedir. Bunların bilinmesi çarpıntının etiyolojisini anlamada ve tedavisinde katkı sağlayabilir.

Yöntemler: Kardiyoloji Polikliniğine çarpıntı şikayeti ile başvuran, çarpıntının olası organik etiyolojileri ekarte edilmiş olan ve 18 yaşından büyük hastalar araştırmaya dâhil edilmiştir. Çalışmada sosyodemografik veri formu, D Tipi Kişilik Ölçeği, Hastane Anksiyete ve Depresyon Ölçeği kullanıldı.

Bulgular: Depresyon puanları hasta grubunda yüksek bulundu ($p<0,05$). Hasta grubundakilerin %60'ında, kontrol grubunun %22'sinde D tipi kişilik tespit edildi. Hasta ve kontrol grubu olguların D tipi varlığı ile yaş, cinsiyet, medeni durum, depresyon ve anksiyete puanları ilişkisi için yapılan Spearman korelasyon analizi sonuçları incelendiğinde D tipi varlığı ile; Hasta grubunda eğitim durumu arasında negatif yönde, zayıf ve anlamlı ilişki bulundu ($p<0,05$). Hasta ve kontrol grubu olgularda D tipi varlığı ile depresyon ve anksiyete puanları arasında güçlü, pozitif yönde ve anlamlı ilişki bulundu ($p<0,05$).

Sonuç: Birçok kardiyolojik hastalıkta etkili olduğu bilinen D tipi kişiliğin ve depresyonun, çarpıntıda da fazla olduğunun bilinmesi palpitasyonun etiyolojisini anlamada ve tedavisini yapmada katkı sağlayabilir.

Anahtar kelimeler: Anksiyete, Depresyon, Çarpıntı, Tip D kişilik

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Introduction

Type D personality was defined as a personality disorder associated with negative affectivity (depressive affect, anxiety, anger, aversion to hostility) and high levels of social inhibition [1]. Type D personality has a tendency to avoid social relations, have negative feelings, and to avoid these negative emotions. Type D individuals generally have weak personal ties with other people and tend to feel uncomfortable with strangers [2].

Type D personality in cardiac patients has been shown to be a cardiovascular risk marker in relation to mental health, quality of life, morbidity and mortality [2]. Individuals with type D personality are at risk of developing psychiatric and medical disorders. For this reason, type D personality can be considered as a psychopathological condition that can affect the health and life span and require psychological and or pharmacological treatment.

Patients with type D personality disorder have anxiety, depressive symptoms, somatic complaints and suicidal thoughts. Cardiac diseases are also common in patients with type D personality disorder and are independent predictors of cardiac symptoms [3]. The association between type D personality and cardiovascular disease has been examined and it is concluded that the type D personality is independently associated with Coronary Heart Disease and hypertension. Studies have shown that people with coronary artery disease with type D personality may be expected to develop depressive symptoms which can be persistent [4,5].

Palpitations are defined as rapid, strong, or irregular pulses that are felt on the head and are a common symptom among outpatients. Etiology includes heart diseases (43%), psychiatric causes (31%), other causes (10%) and unknown reasons (16%) [6,7]. Panic disorder and anxiety disorders are the main psychiatric disorders that cause palpitation [8]. Even when there is a physical illness to explain the palpitation, the intensity of palpitation felt and expressed in the cases accompanied by a psychiatric disorder appears to be increasing.

In patients with complaints of palpitation and where an organic cause cannot be determined, the rate of type D personality and depression and anxiety scores are unknown. Knowing these may contribute to the understanding and treatment of the etiology of the palpitation. We also think that this study will contribute to the literature because of the absence of another study that examines palpitation and type D personality in the World.

Materials and methods

Patients over 18 years old who applied to out-patient clinic of Cardiology with palpitation complaint were included in the study. During the study, the possible organic causes of palpitation were eliminated with the exclusion of patients with anemia, hypothyroidism, hyperthyroidism, diagnosed arrhythmia, and those who have pathological findings in their ECO-ECG and 24-hour ECG Holter records. Patients under psychiatric treatment were excluded from the study. Sociodemographic data form, Type D Personality Scale, Hospital Anxiety and Depression Scale were given to the subjects and

they were asked to fill these forms. The results were evaluated by a psychiatrist.

This prospective case-control study has been approved by the ethics committee of our university. Informed consent was received from the patients included in the study. This research was conducted according to the principles of the World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects".

Data Collection Tools

Sociodemographic Data Form: It is a patient evaluation form prepared by the researcher that includes demographic findings such as age, gender, marital status, educational status, chronic illness history, smoking and alcohol use.

Type D Personality Scale DS-14: Type D Personality Scale (DS-14) is developed to assess Negative Affectivity (NA), Social Inhibition (SI) and Type D. DS-14 scale includes 14 items and it is composed of two sub-scales measuring NA and SI. Each item is a Likert type scale scored between 0-4 [9]. Both sub-scales have a cut-off point ≥ 10 . Test-retest validity is good and internal validity is high in both sub-scales. The Cronbach α values were 0.88 for NA and 0.86 for SI. The psychometric quality and prognostic power of the scale were statistically proven in Belgian cardiac patients. Structural and internal consistency of NA and SI subscales was confirmed in studies conducted in Danish and German cardiac patients [10,11].

Hospital Anxiety Depression Scale (HAD-S): It is a self-assessment scale developed by Zigmond et al. [12] to determine the risk in terms of anxiety and depression in patients, and measure the level and severity change. Validity and reliability of Turkish form was done by Aydemir et al [13].

Statistical Analysis

SPSS 15.0 program was used for statistical analysis of the data. Pearson Chi-Square and Fisher's Exact test were used to compare categorical data among the groups. For comparing data between the groups, independent sample t test was used for normal data and Mann Whitney U tests were used for non-normal data. The relationship between type D presence and other variables was assessed with Spearman's rho. $p < 0.05$ was considered statistically significant.

Results

There were 31 female and 19 male patients in the patient group and 28 female and 22 male volunteers in the control group. The mean age of the patient group was 38.8 ± 10.8 and the mean age of the control group was 39.9 ± 11.2 . There was no significant difference between the mean age of the patients and control group ($p > 0.05$) (Table 1). There was no significant difference between groups in terms of gender, education and marital status ($p > 0.05$).

When HAD-S scores of the groups were examined, there was no significant difference between male and female depression scores ($p > 0.05$). The depression scores of the patient group were significantly higher than the depression scores of the control group ($p < 0.05$). When the mean distribution of anxiety scores according to gender of patients and control group were examined, there was no significant difference between the groups ($p > 0.05$) (Table 2).

Table 1: Sociodemographic characteristics of the study and control groups

	Study group (n:50)	Control group (n:50)	p
Age (Mean±SD)	38.8±10.8	39.9±11.2	0.618
Sex			
Female	31	28	0.542
Male	19	22	
Marital status			
Married	35	38	0.499
Single	15	12	
Education			
Preliminary school	24	26	0.938
High school	24	22	
University	2	2	
Type D Personality			
Present	30	11	<0.001*
Absent	20	39	

SD: Standard deviation, * p<0.05

Table 2: Comparison of depression and anxiety scores of the study and control groups

	Study group (n:50) Mean±SD	Control group (n:50) Mean±SD	p
Depression Scores	6.1±2.7	4.5±2.6	0.003*
Anxiety Scores	6.1±3.1	4.9±2.8	0.121

SD: Standard deviation, * p<0.05

Type D personality was detected in 60% of the patient group and 22% of the control group. When the results of Spearman's correlation analysis made for the relationship between type D presence of patient and control group and age, gender, marital status, depression and anxiety scores were examined, there was a negative, weak and significant relationship between type D presence and educational status in the patient group (p<0.05) (Table 3). There was a strong positive correlation between type D presence and depression and anxiety scores in the patient and control group subjects (p<0.05) (Table 3).

Table 3: The association of type D presence, age, gender, marital status and depression and anxiety scores between study and control groups

	Study group		Control group	
	r	p	r	p
Age	0.188	0.190	0.095	0.510
Gender	0.135	0.351	0.113	0.435
Education	-0.285	0.045*	-0.046	0.753
Marital status	0.089	0.538	-0.041	0.779
Depression	0.773	<0.001*	0.655	<0.001*
Anxiety	0.683	<0.001*	0.674	<0.001*

* p<0.05

Discussion

Personality traits are considered a strong predictor of medical outcomes of cardiac diseases [14]. Type D individuals have been reported to be more prone to heart disease in particular. It has been shown that Type D personality affects cardiac disease susceptibility and prognosis, regardless of the person's emotional state [4,15].

Type D personality is characterized by a tendency to negative feelings and by controlling these feelings by avoiding social relationships [1]. The suppression of feelings has been found to be associated with an increase in cardiovascular

reactivity and a decrease in heart rate variability [16,17]. We thought that having a Type D personality may be involved in the etiology of palpitations in the patients applied to cardiology polyclinic with palpitation complaints and where a cause could not be found. We found that the rate of type D personality was significantly higher in the study group than in the control group, and that there was a strong correlation between palpitation complaints and type D personality. Palpitations can lead to anxiety and low quality of life, and vice versa; That is, anxiety and low quality of life can trigger palpitations. The relationship between psychological status and cardiovascular reactivity has been shown in the pathogenesis of many cardiovascular diseases such as coronary artery disease and hypertension. Significant changes are observed in blood pressure and heart rate, and there is also an important relationship between the level of anxiety and arrhythmia [18].

Studies have shown that the prevalence of type D personality in healthy groups may reach up to 32% [10]. In the control group of our study this rate was 22% and in the study group it was 60%.

When we look at the relationship between type D personality and gender; some studies indicate that type D personality is seen more often in women, while others say that type D personality is not significantly related to sex [2]. In our study, there was no statistically significant relationship between gender and type D personality even though Type D personality presence was more in females in the study group and more in males in the control group.

Our study shows that type D personality may be an independent risk factor for palpitations. Type D increases the level of cortisol in the individual and also increases alertness and sleepless time. Type D personality has been associated with increased levels of inflammatory biomarkers in patients with cardiovascular disease [20-22] and decreased endothelial function [23]. It has been observed that there is an increase in proinflammatory cytokine levels and activities in type D personality and disorders in cytokine network [21]. Cytokines with increased activity and amount, increased levels of cortisol, and elevated cardiac oxidative stress causes imbalances in heart rate and rhythm which lead to inappropriate tachycardia and bradycardia in patients with type D. We think that patients may have a complaint of feeling pulse more due to increased heart output independent of heart rate, which are called palpitations. There are also studies showing that individuals with type D personality have increased heart rates, increased ventricular arrhythmia and cardiac output [24,25].

Biological factors such as inflammation and endothelial dysfunction may cause depression [26]. There are different opinions about the relationship between depression and inflammation. First, depressive symptoms can be seen with the cause of the disease resulting from the inflammation. Second, proinflammatory cytokines resulting from inflammation may cause depressive symptoms [26]. In our study, depressive symptoms were more frequent in people who showed D personality traits. It supports the results of our study.

Exaggerated symptoms of patients with type D personality may be the result of incorrect illness perceptions. People with personality traits that are characterized by high

negative mood emotions tend to exaggerate normal body sensations [27]. In addition, these people tend to believe that their illness will be more severe [28]. The reason for this may be deterioration of the health condition, or it may be a result of non-self-management behavior. Type D Personality is associated with an unhealthy lifestyle [29]. Smoking, alcohol consumption, sedentary lifestyle is frequent in these people. These are important risk factors for cardiac diseases. Psychosocial and behavioral interventions to change functional illness beliefs and health behaviors can lead to the improvement of mental and physical conditions of type D patients.

There are some limitations in our study. Electro-physiologic examinations to detect very rare causes of disease-related disturbance (because it is not routinely lightening the etiology of the trauma and is an invasive method) have not been applied. When the hospital anxiety and depression scale scores were examined, the depression score of the study group was higher than the control group and this was statistically significant. Anxiety scores were not significantly different between the two groups. There was a negative, weak and statistically significant relationship for educational status in the study group; That is, as the level of education increases, the personality type D decreases. To support this hypothesis, there is a need for studies with larger populations to study the relationship between education and type D personality.

In conclusion, additional information has been given that type D personality increases risk of organic heart failure such as heart failure, atrial fibrillation, coronary heart disease, and worsens the prognosis. People with type D personality without organic heart failure also suffer from palpitations and possibly by increasing the frequency of arrhythmia. We think that type D personality should be kept in mind as an independent cause in palpitations etiology and should be considered when approaching palpitations. In those who have palpitations, both type-D personality ratios and depression scores are higher. To identify that Type D personality and depression -which are known to be effective in many cardiovascular diseases- are also highly effective in palpitations may help to understand and treat the etiology of palpitations. In patients who apply with palpitation complaint, after excluding the possible organic etiologies of the palpitation, it is important to determine the appropriate treatment modality with detailed mental status examination and a study to probe a psychiatric disorder, and to avoid unnecessary advanced, expensive examinations and to prevent deterioration of the quality of life of the patient.

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