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Evaluation of Symptoms, Depression and Anxiety Levels in Young Women with Idiopathic Granulomatous Mastitis

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Abstract

Idiopathic granulomatous mastitis (IGM) is a rare, chronic, inflammatory disease of the breast, and diagnostic and therapeutic procedures are challenging for patients. This study aimed to determine the psychiatric symptom levels of young women clinically diagnosed with IGM, to compare the age and sex-matched controls and to investigate the factors affecting depressive symptoms in patients with IGM. A total of 32 patients and 32 age and sex-matched volunteers were included in the study. The sociodemographic and clinical characteristics of the patients were recorded and Beck's depression and health anxiety inventory were applied. A significant difference was found between the Beck depression inventory and health anxiety inventory scores between the patient and control groups. There was a strong correlation between breast mass size and Beck depression inventory (r:0.83, p:0.01), also moderate correlation was found between breast mass size and health anxiety (r:0.39, p:0.05). In the logistic regression model (χ2:12.274, R2:0.469, p:0.01) created by the retrospective elimination method, presentation with fistula (OR:9.24), the bilateral lesion (OR:7.25) and disease duration (for each month OR:1.29) were found to be significant. In this study, it was determined anxiety and depression levels higher in patients with IGM and also clinical futures of IGM (fistula, bilateral lesions, and disease duration) affect depression levels at different levels. For this reason, it is thought that psychosocial evaluation of patients from the time of diagnosis, referring them to psychiatric treatment if necessary may improve the quality of life of the patients.

Research Article

INTRODUCTION

Idiopathic granulomatous mastitis (IGM) is a rare, chronic, inflammatory disease of the breast tissue, characterized by lobulocentric granuloma [1]. IGM is frequently seen in women of childbearing age with a recent history of pregnancy and breastfeeding [2]. In the etiology; autoimmunity, hormonal causes, localized immune response secondary to trauma, local irritants, alpha-1 antitrypsin deficiency, undetected organisms, viruses, antipsychotic drugs, hyperprolactinemia, smoking, and oral contraceptive use are among the reasons [3-5]. IGM usually presents with palpable tender breast mass, often accompanied by pain and lymphadenopathy [6]. Abscess formation, skin involvement, nipple retraction, and fistula may develop in the mass [7].

In the literature, studies on IGM and psychiatric symptoms are very limited. IGM's nature, diagnosis, and treatment phases are very complicated and the prognosis is hard to predict. The non-invasive diagnostic tool is not yet available to distinguish IGM from breast cancer and confirm the diagnosis. Biopsy and histopathological examination should be performed to rule out malignancy and to confirm the diagnosis [8]. IGM treatment is difficult due to a lack of consensus and the existence of a variety of options. IGM is clinically important because it requires long-term follow-up and can be seen with a high rate of relapse between 5% and 50% after treatment [9]. Glucocorticoids, immunosuppressive drugs, surgical and conservative treatment are used for the treatment of the disease [10]. These patients have many risk factors for delayed wound healing after surgical intervention, fistula formation, secondary infection and frequent postoperative recurrence for anxiety and depression [11]. Although IGM is a chronic, benign and long-term progressive mastitis type, it may cause severe fear and anxiety in patients because of its confusion with inflammatory type breast cancer due to its clinical and radiological appearance and the requirement for long-term treatment [12]. In inflammatory diseases, psychiatric symptoms correlate with the course of the disease [13-15], and it is important to examine these symptoms and guide patients with psychiatric symptoms to the appropriate treatment.

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In light of these studies, we hypothesized anxiety and depression levels are higher in patients with IGM due to the chronic nature of the disease and also clinical factors associated with patients and treatment may affect depressive symptoms.This study aimed to determine the psychiatric symptom levels of young women clinically diagnosed with IGM, to compare the age and sex-matched controls and to investigate the factors affecting depressive symptoms in patients with IGM.

MATERIALS and METHODS

Female patients aged 18-65 years with histopathologically proven IGM admitted to our Rheumatology Department between 1 February 2013 - 31 December 2019 were included in this study. The study was approved by the local ethics committee. Data of 32 patients were retrospectively reviewed and their sociodemographic and clinical characteristics were recorded. Psychiatric scales were applied to the patients individually. In the same period, a control group consisting of age and sex-matched people without any chronic disease from the health employees and their relatives was formed.

Scales

1. Sociodemographic and Clinical Data Form: Created by us to record the socio-demographic information of the participants. The form includes the participant's age, educational status, educational status, occupational information, economic income level, medical history and whether there is any psychiatric disorder in history or at present. Breast mass size, localization, presenting symptoms and surgical and pharmacological treatments were recorded as clinical features.

2. Beck Depression Scale: Beck et al. [16] were developed and translated into Turkish by Hisli [17]. This scale consists of 21 questions, each of which is scored between 0-3, and measures emotional, somatic, cognitive and motivational indicators of depression. The maximum score is 63 and the cut-off point is 17. The question areas evaluated on the Beck depression scale were; unhappiness, self-blame, feeling of failure, irritability, crying, social withdrawal, changes in body image, uncertainty, fatigue, insomnia, loss of appetite, weight loss, somatic occupations and decreased libido.

3. Health Anxiety Scale: It was developed by Salkovskis et al. [18] and its validity and reliability study was done by Aydemir et al. [19]. It is a self-report scale consisting of 18 items. Each item contains 4 different options and the patient is expected to choose the one that suits him/her the most. The scoring of the scale is between 0-3 in each item and the high score indicates a high level of health anxiety. The scale consists of two factors, the first factor includes the first 14 items of the scale and is called the body dimension, which represents the hypersensitivity and anxiety dimension to physical symptoms. The second factor includes the last 4 items of the scale and is called the dimension associated with the negative consequences of the disease.

Statistical Method

Statistical analysis was performed with SPSS v19. Mean and standard deviation values were calculated for sociodemographic and clinical data. Variables in each group were subjected to normal distribution suitability tests (Kolmogorov-Smirnov and histograms), then were compared with the Student-test and Chi-Square test. Pearson correlation test was used for correlation analysis. Patients were grouped at the cut-off point for depression test and the risk factors for the depressive disorder were evaluated by logistic regression by using the retrospective elimination method. Breast mass size, localization, presenting symptoms (mass, fistula, erythema), surgical (drainage, excision), steroid doses and treatment duration added to the regression model as independent variables. P-value was accepted as 0.05.

RESULTS

A total of 32 patients and 32 age and sex-matched volunteers were included in the study. A significant difference was found between the Beck depression inventory and health anxiety inventory scores between the patient and control groups. Age, gender, clinical characteristics and comparison of the patient's psychiatric scale scores are shown in Table 1.

In the patient group, a correlation analysis was made between psychiatric scales and breast mass size, duration of disease, sedimentation, CRP levels, and steroid doses that were hypothesized to affect psychiatric symptoms. A strong correlation was found between breast mass size and Beck depression inventory (r: 0.83, p: 0.01) and moderate correlation was found between breast mass size and Health Anxiety inventory (r: 0.39, p: 0.05) (Table 2).

Table 1. Comparison of sociodemographic and clinical characteristics of idiopathic granulomatous mastitis and control group

Study Parameter		Idiopathic Granulomatous Mastitis Group	Control Group	Test statistics	p
Age		38.6 ± 7.7	39.3 ± 7.1	T: 0.435	0.637
Gender		100.0 % female	100.0 % female	χ2:1.000	1.000
Breast mass size (mm)		31.5±5.5	-	-	-
Duration of disease (month)		11.0±2.7	-	-	-
Steroid dose		21.6±13.4	-	-	-
Localization	Unilateral	29	-	-	-
	Bilateral	3	-	-	-
Presentation symptom	Mass	32 (%100)	-	-	-
	Fistula	13	-	-	-
	Erythema	7	-	-	-
Surgical treatment	Abscess drainage	8			
	Wide local excision	2			
Psychiatric scale scores	Beck Depression Inventory	14.5±9.0	9.3±5.4	T:2.220	0.031
	Health Anxiety Inventory	21.7±8.3	11.9±5.2	T: 5.480	0.001

Table 2. Correlation of clinical symptoms and psychiatric symptoms of idiopathic granulomatous mastitis group

Study Parameter	Breast Mass Size	Duration of Disease	ESR	CRP	Steroid dose
Beck Depression Inventory	0.83[b]	0.35	-0.18	0.08	-0.19
Health Anxiety Inventory	0.39[a]	-0.29	-0.83	-0.28	0.32

Significant as a level of [a]p<0.05, significant as a level of [b]p<0.01
ESR: Erythrocyte sedimentation rate, CRP: C-reactive protein

In the IGM group, patients were grouped by taking 17 cut-off points in the Beck depression inventory and risk factors of clinically depressive disorder were investigated. In the logistic regression model (χ2: 12.274, R2: 0.469, p: 0.01) created by the retrospective elimination method, clinical findings such as presentation with fistula (OR: 9.24), the bilateral lesion (OR: 7.25) and disease duration (for each month OR: 1.29) were detected (Table 3)

Table 3. Logistic regression model based on retrospective elimination of clinical and sociodemographic characteristics effecting depression

Study parameter	χ2	R^2	p	OR	95% CI
	12.274	0.469	0.01		
Presentation with fistula			0.04	9.24	4.93-65.12
Bilateral			0.12	7.25	3.27-29.14
Duration of Disease (For each month)			0.20	1.29	1.12-3.89

OR: Odds ratio; CI: Confidence Interval.

DISCUSSION

In this study, we aimed to investigate anxiety and depressive symptoms also clinical, pharmacological and surgical factors affecting depressive symptoms in patients with IGM. We found a significant difference was found between the Beck depression inventory and health anxiety inventory scores between the patient and control groups. There was a strong correlation between breast mass size and depression scores, also moderate correlation was found between breast mass size and health anxiety. In the logistic regression model presentation with fistula (OR:9.24), the bilateral lesion (OR:7.25) and disease duration (for each month OR:1.29) were found to be significant.

IGM is a mentally challenging disease for patients because of its rarity, its confusion with breast cancer and its long-term treatment duration. In this study, 32 patients with

IGM were evaluated. The patients had a mean disease duration of 11.2 months and all of them presented with mass. It was found that patients with IGM had higher rates of depression and health anxiety than healthy controls. Studies show that patients with IGM experience severe anxiety and have a high risk of developing depression [20], similar in breast cancer even though the method and assessment tools are different than breast cancer. IGM may lead to problems with mental and body perception in young women since it threatens the breasts symbolizing femininity and sexuality as similarly in breast cancer, furthermore mental evaluation is important for these patients.

A positive correlation was found between breast mass size and depression and health anxiety scores in this study. The relationship between breast mass size and anxiety is perceived as a threat to the body which leading intense anxiety same as breast cancer which is reported in the literature [21, 22]. And also, patients with large masses have to face the fear of breast cancer and they undergo a process ranging from severe deformity, deformation of the breast to total mastectomy as a result of applied surgical treatments due to the lack of a clear treatment protocol.

Presentation with fistula and bilateral mass were found to be factors that increase the risk of depression in patients. A fistula usually occurs in chronic stages of the disease and causes serious deformity. In the presence of a fistula, it is reported that extensive local excision or even mastectomy if necessary may be performed [23]. Both deformity and surgery are highly stressful for patients. Bilateral mass is seen in 5% -25% of IGM and the right-left breast involvements are at similar rates [9, 24]. Although bilateral involvement creates a perception of 'high-grade' disease and the perception that two breasts will be lost in patients, there is no data about this in the literature.

It was determined that the longer the duration of the disease, the higher the probability of depressive disorder. This disease, especially seen in young and sexually active women, which is frequently misdiagnosed as breast cancer and overlooked by many physicians because of its rarity, and tried to be treated with aggressive and corrosive methods as well as its frequent recurrence rates up to 50% after treatment [25] may be highly damaging for patients psychologically. Steroid treatments that are used frequently and long term as another treatment method also decrease the quality of life of the patient due to their side effects such as obesity, secondary diabetes and hyperlipidemia [26].

To the best of our knowledge, this is the first study to have investigating depression and anxiety levels in patients with IGM. The major limitation of our study was the relatively small sample group. This may have led to potential relationships between other factors (marriage, sexual partner status, body-self image after surgery, attempting to conceive) and pharmacological treatments being overlooked. Further research with a larger sample investigating these factors beneficial with respect to understanding depressive symptoms and also guiding surgical and pharmacological treatment goals.

In conclusion, IGM causes intense stress in young female patients both during diagnosis and treatment and their anxiety and depression levels were found to be high. If it is necessary to evaluate the patients psychosocially from the time of diagnosis, referring them to psychiatric treatment will significantly improve the quality of life of the patient by affecting the clinic of long-term disease.

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