

Fibromyalgia Syndrome among Iraqi Female Patients with Breast Cancer

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Abstract

Objective: To assess the prevalence of fibromyalgia syndrome (FMS) among Iraqi Female patients with Breast Cancer (BCA).

Patients and Methods: One hundred Iraqi Breast Cancer Female patients and 100 healthy controls were included in this study. Full history was taken and complete clinical examination was done for all patients. Disease characteristics [age, sex, onset of diagnosis of BCA, body mass index (BMI), waist circumference, social history and drug history] were documented. Laboratory analysis included complete blood count, erythrocyte sedimentation rate (ESR), C - reactive protein (CRP), and thyroid function tests. Individuals in both groups were assessed for FMS and the American College of Rheumatology 1990 criteria for fibromyalgia was applied for both groups.

Results: FMS was present in 3 (3%) breast cancer patients compared to 7 (7%) individuals of the control group (P<0.194). We found that onset of diagnosis of BCA was significant associate with FMS (P<0.046).

Conclusion: Prevalence of FMS was 3% among Iraqi Female patients with BCA.

Introduction

Fibromyalgia syndrome (FMS) is a chronic non-inflammatory and non-autoimmune painful musculoskeletal disorder composed of core features that are always present (wide spread pain and characteristic tender points present on physical examination).⁽¹⁾

The prevalence of FMS ranges from 0.66% to 10.5% , women are 10 times more commonly affected than men, and usual age of presentation is 20-50 years but has been diagnosed in children, adolescents and older people⁽²⁾

Previous studies have reported elevated levels of a nerve chemical signal (substance P) and nerve growth factor in the spinal fluid of fibromyalgia patients. Levels of the brain chemical serotonin are also relatively low in patients with fibromyalgia. Studies of pain in fibromyalgia have suggested that the central nervous system may be somehow supersensitive. Scientists noted a diffuse

disturbance of pain perception in patients with fibromyalgia and impaired non-rapid eye movement or non-REM sleep phase (which likely, at least in part, explains the common feature of waking up fatigued and unrefreshed in these patients). In addition, the onset of fibromyalgia has been associated with psychological distress, trauma, and infection.⁽³⁻⁵⁾

Breast cancer (BCA) is a malignant neoplasm originating from breast tissue, most commonly from the inner lining of milk ducts or the lobules that supply the ducts with milk.⁽⁶⁾ Breast cancer is by far the most common cancer diagnosed in women worldwide.⁽⁷⁾ The incidence varies greatly around the world: it is lowest in less-developed countries and greatest in the more-developed countries.⁽⁸⁾ Breast cancer comprises 10.4% of all cancer incidences among women. It is about 100 times more common in women than in men.⁽⁹⁾

Prevalence of FMS in BCA patients has been reported to be increased in 2 other studies.^(10,11) Because cancer is a serious health problem that affects the patients' quality of life and due to limited available data about prevalence of FMS in patients with BCA and to the best of our knowledge there was no previous study conducted in Iraq assessed FMS in patients with BCA so we evaluated prevalence of FMS among Iraqi patients with BCA.

Patients and Methods

A cross-sectional study was conducted on 100 patients with Breast Cancer who were randomly seen between December 2010 and April 2011 at the Breast Clinic of National Center for Early Detection of Cancer and Baghdad Teaching Hospital, Medical City, compared to 100 healthy individuals served as a control group who were randomly selected during the period of study; matched for age and sex of patient's group.

The clinical assessment was performed using a comprehensive protocol. Full history was taken from all individuals including: age, sex, marital status, BCA stages, onset of BCA diagnosis and type of treatment. Complete clinical examination and the American college of rheumatology (ACR) 1990 criteria for fibromyalgia were applied for individuals in both groups.⁽¹²⁾

Patients with BCA were excluded from the study if they had conditions mimic FMS like: autoimmune disorders, neurological disorders, endocrine disorders, hepatitis C, other malignancies & osteomalacia.

BCA was diagnosed by the surgeon clinically and confirm histologically⁽¹³⁾ and the stage classified according to TNM classification of BCA⁽¹⁴⁾.

Blood sample was obtained for measurement of erythrocyte sedimentation rate (ESR), C-reactive protein, packed cell volume (PCV), white blood cells count (WBC), blood urea, serum creatinine, total serum bilirubin, serum alkaline phosphatase, serum aminotransferase, hepatitis C virus antigens, and thyroid function tests (T3, T4, TSH). Body mass index (BMI) and waist circumference were measured. A signed consent was taken from individuals in both groups for admission in the study.

Statistical analysis was done by Statistical Package for Social Sciences version 18 (SPSS 18). Discrete variables presented as numbers and percentages. Continuous variables presented as mean and standard deviation (SD). To test the significance of difference between two variables; t test of two independent variables used if variables were normally distributed and Mann-Whitney test used if the distribution was not normally distributed. Chi square test for independence used to test the association between discrete variables. P value used was asymptotic and two sided for all tests. Findings with P value less than 0.05 considered significant.

Results

One hundred patients with BCA, 100 females and no males, their mean age (48.7 ± 9.7) years, and one 100 healthy females served as control group, their mean age was (48.4 ± 10.4) years were included in this study. The age and sex of patients and control showed no statistical differences (p-value = 0.839 and 1.000 respectively, Table 1)

Fibromyalgia syndrome (FMS) was present in 3 (3%) BCA patients, and absent in 97 (97%) of them, while it was present in 7(7%) healthy individuals and absent in 93(93%) controls and (p-value = 0.194) which was statistically not significant in (Table 2).

In patients with BCA, the associated features as sleep disturbance was present in 60 (60%) and in control was present in 57 (57%) with P value (0.667), headache was present in 58 (58%) patients and 69 (69%) controls with P value (0.106), fatigue was present in 76 (76%) patients and 71 (71%) controls (P = 0.423), anxiety was present in 53 (53%) patients and 43 (43%) controls with P value (0.157), depression was present in 33 (33%) patients and 22 (22%) controls with P value (0.082), irritable bowel was present in 61 (61%) patients and 56 (56%) controls with P value (0.473), tender points was present in 57 (57%) patients and 63 (63%) controls with P value (0.386), the association between these associated features in patients and controls was statistically not significant, while numbness was present in 38 (38%) patients and in 52 (52%) controls with P value (0.047). The association was statistically significant as shown in table 3.

In Table 4, only onset of diagnosis of BCA is a significant associate with presence of fibromyalgia syndrome (FMS) in patients group. Increased age & waist circumference may be associated with increase prevalence of FMS but

without reaching significant differences. Sex, body mass index (BMI), stages of BCA, family history of FMS, drug history, educational level and marital status are not predictors for prevalence of FMS in patients with BCA.

Table1: Demographic characteristics of 100 patients with BCA and 100 controls.

Characteristics	Breast Cancer	Control	P
	N = 100 (100%)	N = 100 (100%)	
Age (year), M ± SD	48.7 ± 9.7	48.4 ± 10.4	0.839
Sex			
Male, n(%)	0 (0.0)	0 (0.0)	1.000
Female, n(%)	100 (100.0)	100 (100.0)	

N; number, P; P value, %; percent, M; mean, SD; standard deviation.

Table2: Distribution of FMS in 100 patients with breast cancer and 100 Controls

Fibromyalgia Syndrome	Breast Cancer	Control	P
	N = 100 (100%)	N = 100 (100%)	
Present	3(3.0)	7(7.0)	0.194
Not	97(97.0)	93(93.0)	

N; number, P; P value, %; percent.

Table 3: Distribution of fibromyalgia features in 100 BCA patients and 100 Controls.

Features	Breast Cancer	Controls	P
	N =100 (100%)	N =100 (100%)	
Sleep disturbance	60 (60%)	57 (57%)	0.667
Headache	58 (58%)	69 (69%)	0.106
Fatigue	76 (76%)	71 (71%)	0.423
Numbness	38 (38%)	52 (52%)	0.047*
Anxiety	53 (53%)	43 (43%)	0.157
Depression	33 (33%)	22 (22%)	0.082
Irritable bowel	61 (61%)	56 (56%)	0.473
Tender points	57 (57%)	63 (63%)	0.386

*P-value is significant, N; number, %; percent.

Table4: Relationship between FMS and demographic and characteristic features of 100 patients with breast cancer.

Variables	FMS	No FMS	Total	P
	N = 3 (3%)	N = 97 (97%)	N=100(100%)	
Age (year), M ± SD	54.7 ± 6.1	48.5 ± 9.7	48.7 ± 9.7	0.279
Sex				
Male, n (%)	0 (0.0)	0 (0.0)	0 (0.0)	1.000
Female, n (%)	3(3.0)	97 (97.0)	100 (100.0)	
Onset of Diagnosis breast cancer (year), M ± SD	48.0 ± 20.8	24.3 ± 30.5	25.0 ± 30.5	0.046*
Body Mass Index (kg/m ²), M ± SD	30.5 ± 6.1	29.2 ± 5.1	29.2 ± 5.1	0.657

Waist circumference (cm), M ± SD	109.3 ± 10.1	101.8 ± 13.7	102.0 ± 13.6	0.347
Stage of breast cancer, n(%)				
Stage 1	0 (0.0)	6 (6.0)	6 (6.0)	0.680 ^A
Stage 2	2 (2.0)	47 (47.0)	49 (49.0)	
Stage 3	1 (1.0)	38 (38.0)	39 (39.0)	
Stage 4	0 (0.0)	6 (6.0)	6 (6.0)	
Family history of FMS/MSK, n(%)	1 (1.0)	21 (21.0)	22 (22.0)	0.630
Drug History, n(%)				
Chemotherapy	3 (3.0)	79 (79.0)	82 (82.0)	0.410
Hormonal therapy	0 (0.0)	18 (18.0)	18 (18.0)	0.410
Educational Level, n(%)				
Not Educated	0 (0.0)	28 (28.0)	28 (28.0)	0.666 ^B
Primary	2 (2.0)	17 (17.0)	19 (19.0)	
Intermediate	0 (0.0)	19 (19.0)	19 (19.0)	
Secondary	1 (1.0)	15 (15.0)	16 (16.0)	
Diploma & Collage	0 (0.0)	18 (18.0)	18 (18.0)	
Marital state, n(%)				
Single	0 (0.0)	12 (12.0)	12 (12.0)	0.340 ^C
Married	3 (3.0)	64 (64.0)	67 (67.0)	
Widow	0 (0.0)	20(20.0)	20 (20.0)	
Divorced	0 (0.0)	1 (1.0)	1 (1.0)	

FMS; fibromyalgia syndrome, N; number, *P; P value is significant, %, percent, M; mean, SD; standard deviation.

^A after condensing rows into (stage I –II) & (stage III –IV).

^B after condensing rows into (not educated/primary), (intermediate/secondary) & (Diploma/college)

^C after condensing rows into (married) and (others).

Discussion

The present study revealed no significant association between BCA and FMS which is in agreement with another study done by Dreyer⁽¹⁵⁾ but in contrast to Warner et al study.⁽¹⁶⁾ This may be explained by the fact that in Warner et al study⁽¹⁶⁾ patients might have already symptoms of FMS before diagnosis of breast cancer.

To our knowledge, this is the first cross-sectional descriptive study investigating FMS in Iraqi female patients with BCA.

In this study, the prevalence rate of FMS among female Iraqi patients with breast cancer was 3 % of the sample studied compared to 7% of healthy individuals, (P-value=0.194) indicating non significant association between the two conditions. Possible explanation of not reaching the level of significance

may be the small sample size.

In comparison to the prevalence of FMS in other malignant diseases, the prevalence of FMS in the present study was slightly lower than its prevalence in lung cancer patients (4.8%)⁽¹⁵⁾ and hospitalized cancer patients (solid and hematological malignancy) (10.7%)^(16,17).

Although Fibromyalgia syndrome was higher among healthy control group but it was not significant.

In this study, we found that onset of diagnosis of BCA was a significant associate with presence of fibromyalgia syndrome (FMS) among our patient however it was not highly significant.

Increased age and waist circumference may increase the prevalence of FMS but it was insignificant.

Sex, body mass index (BMI), stages of BCA, family history of FMS, drug history, educational level, and marital status were not significant associates with prevalence of FMS in patients with BCA.

Recently it has been found that post chemotherapy some patients developed features of arthralgia and myalgia of hands, feet, knees, and ankles.⁽¹⁸⁾ The small sample size might be a limitation of the study, however the strength of the study included all sample size were taken, being cross-sectional not case control, and it was not retrospective.

Because there is no specific treatment for FMS, the management of FMS is multifaceted program including education, stress management, and aerobic exercise to help the patients cope with their symptoms and improve their quality of life.⁽¹⁹⁾

In conclusion, prevalence of FMS was 3% among Iraqi female patients with BCA. Large prospective studies may be needed to confirm these results.

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