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Research Article

Spectrum of Presentation of Mastalgia in Tertiary Care Hospital of Pakistan

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ABSTRACT

Background: Mastalgia is the commonest cause of women presenting to breast clinics, affecting as many as 70% of women at some point in their life. Risk factors include caffeine intake, various drugs, psychological factors, bra pressure and exercise. Treatment options include lifestyle modification, pharmacological intervention and as a last resort, surgery, only in cases refractory to medical treatment.

Materials and Methods: A total of 150 patients were included. Among these 148 (98.7%) were female and 2 (1.3%) were male. A total of 100 (66.7%) were responders while 50 were (33.3%) non-responders.

Sampling Technique: NON-probability convenient sampling.

Results: A total of 150 patients were included. Among these 148 (98.7%) were female and 2 (1.3%) were male. A total of 100 (66.7%) were responders while 50 were (33.3%) non-responders.

Discussion: 51% of patients were between the ages of 15 to 30 years, and 95% of patients were pre-menopausal. Tea, coffee, fast food contributed significantly to mastalgia development. So did attain higher education. Whether this is due to increased health awareness or increased stressors is not known. First-line treatments include acetaminophen, NSAIDs, topical diclofenac and evening primrose oil. Drugs such as tamoxifen, danazol and bromocriptine are not preferred in breast clinics. The most preferred analgesic type was NSAIDs according to our study.

Conclusion: Mastalgia is the major reason for the presentation of women in breast clinics worldwide and Pakistan. Consumption of coffee, tea and multiparity were found out to be related to mastalgia. However breastfeeding, contraceptive use, exercising, nulliparous or were having cyclical pain responded better to evening primrose oil. With the help of this study, we have identified risk factors and appropriate treatment so that the major bulk of patients presenting to breast clinics can be satisfied and treated.

Keywords: Spectrum; Mastalgia; Tertiary care; Sensitivity; Breast clinics

INTRODUCTION

Mastalgia is pain arising in the breast tissue. As the most common breast symptom causing women to consult physicians, it may affect up to 70% of women in their lifetime. It is most common in women aged 30-50 years [1]. Mastalgia can be categorized into four types as cyclic, non-cyclic, chest wall pain, and non-chest wall pain. Specifically, cyclic and non-cyclic types are dominant in the literature [2].

Noncyclic pain is not related to the menstrual cycle and may be unilateral. It is usually described as a sharp, burning pain that appears to be localized to the breast. Noncyclic mastalgia is most common in women of 40-50 years of age [1].

Cyclical mastalgia is classically related to the menstrual cycle. It is bilateral, diffuse, poorly localized and generally described as heaviness or soreness that often radiates to the axillae and arms. It occurs most often during the luteal phase of the menstrual cycle as a result of increased water content in breast stroma

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caused by increasing hormone levels. Cyclical breast pain occurs more often in younger women and mostly resolves spontaneously. Cyclical mastalgia can affect women's sexual, physical, social, and work-related activities [3]. Many literature studies have reported possible risk factors for cyclical breast pain. Some of the authors claim that nutritional factors, such as tea and coffee, as well as smoking or psychosomatic factors, contribute to mastalgia [3]. Menstrual irregularity, oral contraceptives, hormonal therapy, psychotropic drugs, some cardiovascular agents (i.e. spironolactone, digoxin), psychosocial factors, and emotional stressors are related to breast pain. Large, pendulous breasts may create ligamentous pain [1]. Although there is a focus on the psychogenic properties of mastalgia, it is still controversial whether women prone to anxiety and depression experience more breast pain or experiencing breast pain affects the mental health of women [2]. In some studies, bra pressure and exercise were enlisted among the reasons that could yield pain.

Changes in lifestyle, such as decreasing coffee consumption, increasing vitamin intake, and wearing supportive bras are treatment options for mastalgia. Pharmacological treatments including non-steroidal anti-inflammatory drugs and tamoxifen can also be used. Surgical intervention may be necessary in cases that are resistant to medical treatment. Koçoğlu et al. specifically indicated that resistant cases that require surgical intervention are rare and those patients should be warned and informed about possible complications especially unsatisfactory results [2].

MATERIALS AND METHODS

This cross-sectional study was conducted for 6 months, from 1st November 2018 to 30th April 2019, in breast clinic of surgical unit 1, Holy Family Hospital, Rawalpindi, Pakistan after ethical approval from Institutional Research Forum of Rawalpindi Medical University. A total of 150 patients were included out of which 2 were male and 148 were female patients, between 15 years to 75 years of age, presenting with complaints of mastalgia were included using a non-probability convenient sampling technique. However, those female patients that were suffering from fat necrosis, costochondritis, breast cyst, breast abscess and galactocele were excluded from the study.

A detailed self-structured proforma filled by postgraduate trainee was used. Telephonic communication was done to follow up.

The socio-demographic data like age, marital status and educational level were noted. Furthermore, a questionnaire exploring whether pain as cyclic or non-cyclic, bilateral or unilateral, whether they received hormone replacement therapy, smoked, consumed tea, coffee and evening primrose oil, co-morbid, age of menarche and menstrual cycle, was filled.

In this questionnaire, a Visual Analogue Scale (VAS) was used with a table ranging from 0 to 10 to assess the pain and pain levels were scored.

Included patients were divided into 4 groups according to age: 15-30 years, 31 to 45 years, 46 to 60 years and 61 to 75 years.

Frequency of patients according to age group, menstrual status, comorbid, duration of mastalgia symptoms, ultrasound findings, educational status, risk factors, pain score and number of children was noted.

Percentages were also determined using Statistical Package for Social Sciences (SPSS v 22.0).

Association of Response to evening primrose oil and mastalgia with various risk factors was determined using Chi Square Test. p-value of <0.05 was considered statistically significant.

RESULTS

A total of 150 patients, there were 148 (98.7%) female and 2 (1.3%) male participants, were included in this study. Mean age of male patients was 75.0 ± 0.0 while that of female patients was 30.3 ± 8.7. The difference was statistically significant ($p<0.000$).

There were a total of 100 (66.7%) responders while 50 (33.3%) were non-responders. The mean age of responders was 32.5 ± 11.1 while that of non-responders was 29.3 ± 7.5. The difference, however, was statistically insignificant ($p=0.079$).

Frequency and Percentage of the prevalence of various factors have been stated in Table 1.

Table 1: Frequency of various variables included in the study.

Age	
15-30	76 (51%)
31-45	41 (27%)
46-60	33 (22%)
61-75	00
Menstrual status	
Pre	143 (95%)

Post	07 (05%)
Comorbids	
Yes	08 (05%)
No	142 (95%)
Mastalgia	
Unilateral	85 (57%)
Bilateral	65 (43%)
Suration of symptoms	
Less than 6 months	127 (85%)
More than 6 months	23 (15%)
Investigations	
Ultrasound	94 (63%)
Mammography	56 (37%)
Educational status	
10^{th} grade	77 (51%)
Bachelors	65 (43%)
Masters	08 (05%)
Risk factors	
Contraceptive	16 (11%)
Exercise	32 (21%)
Coffee	33 (22%)
Tea	42 (28%)
Fastfood	27 (18%)
Pain score	
Less than 5	76 (51%)
Above	74 (49%)
No of births	
Primigravida	10 (07%)
Multiparous	140 (93%)
Pain cycle	
Cyclic	94 (62%)

Noncyclic	56 (37%)
Response	
Responded	100 (66%)
Nonresponded	50 (44%)
Evening primrose	
Yes	105 (70%)
No	45 (30%)

It was observed that included participants that were breastfeeding, using the contraceptive, exercising, were nulliparous or were having cyclical pain responded better to evening primrose oil (Table 2).

Table 2: Association of response to evening primrose with various risk factors.

		Responder		p-value
		Yes	No	
Mastalgia	Unilateral	51	21	0.083
	Bilateral	35	27	
Breast feeding	Yes	39	10	0.005
	No	47	38	
Breast surgery	Yes	15	5	0.274
	No	71	43	
CA breast	Yes	15	3	0.069
	No	71	46	
Comorbids	Yes	9	7	0.481
	No	77	41	
Duration	<6 months	50	34	0.145
	>6 months	36	14	
Menstrual status	Pre	74	46	0.076
	Post	12	2	
Contraceptive	Yes	28	7	0.023
	No	58	41	
EXercise	Yes	32	8	0.013
	No	54	40	
No. of children	0	29	16	0.034

	1	5	11	
	2	14	7	
	3	8	5	
	4	13	9	
	5	3	0	
	6	8	0	
Cyclical pain	Yes	40	32	0.025
	No	46	16	

The association of mastalgia with a number of births was established. However, the association of mastalgia with other risk factors was not observed (Table 3).

Table 3: Association of Mastalgia with various risk factors.

		Mastalgia		**p-value**
		Unilateral	Bilateral	
Contraception	Yes	21	18	0.753
	No	63	48	
Exercise	Yes	29	15	0.115
	No	55	51	
No. of births	0	19	26	0.003
	1	11	7	
	2	15	10	
	3	3	10	
	4	21	5	
	5	0	3	
	6	5	3	
Coffee	Yes	35	27	0.547
	No	39	37	
Tea	Yes	42	45	0.023
	No	36	17	
Fast food	Yes	38	35	0.317
	No	44	29	

Evening primrose	Yes	64	41	0.062
	No	20	25	
Cyclical	Yes	46	32	0.277
	No	34	34	
Menstrual status	Pre	77	7	0.296
	Post	57	9	

DISCUSSION

In our study 76 patients (51%) presented with mastalgia between the age group 15-30 years of age, 41 patients (27%) presented between age limit 31-45 years of age, 33 patients (22%) fell In age limit of 46-60 however no patient presented in the age group of 61 years and above. A study done by Eren et al. reported that the age of women complaining of breast pain was between 35 and 55 years and that this symptom was rarely encountered under the age of 45 [1].

In our study 143 patients (95%) presented with complaint of mastalgia in premenopausal age and only 07 patients (13%) presented in the postmenopausal age group. The mean age of the total study group was 45.20 ± 10.78 years (range 18-67), and the mean age of the mastalgia group was higher revealing that breast pain often takes place in the perimenopausal period when hormonal and menstrual irregularity takes place ($p<0.01$) [1]. In comparison, the study done by Arslan et al. included the data of 789 cases with only symptoms of mastalgia, the mean age of whom was 42.97 ± 12.36 (16-74) years. Of the female patients, 5.3% (n=42) were aged 65 or older, 59.7% (n=471) had bilateral mastalgia, and 91.1% (n=719) had unremarkable breast exams [4].

Shobeiri et al. reported that educational level, parity, and exercise are not related to cyclical mastalgia [5]. However, our study concluded that out of the 140 (95%) multiparous women presenting with mastalgia 10 (7%) were primigravida.

Another risk factor determined in this study was the fact that women who graduated from university suffered from mastalgia more frequently. This situation can be explained by a psychogenic origin of breast pain. Women who are university graduates might have to cope with stressors such as child care and family responsibilities along with managing a stressful career. Stressors can be the cause of psychogenic health problems in women. It is reported in the literature that anxiety, depression, somatization, and emotional abuse may be related to mastalgia [6-13]. Also, an increased level of education of women may increase the awareness level and consciousness about health and the ability to better identify pain through more information [2].

We found out that consumption of tea was the main risk factor for mastalgia 42 patients (28%). Among our study group 27 patients (18%) were consumers of fast food, 33 patients (22%) with a habit of coffee intake, 32 patients (21%) exercised routinely and 16 patients (11%) had a history of contraceptive use presented to the breast clinic with a complaint of mastalgia.

In comparison, the study of 874 patients by Ader et al. [6] concluded that caffeine and smoking were associated with cyclical mastalgia; however, other nutritional factors (e.g., high-fat diet), physical activity, and alcohol consumption were not related with cyclical mastalgia. Caffeine and heavy smoking were also related to mastalgia. In another study with 700 participants and including all of the mastalgia types [1]. Lumachi et al. [9] investigated smoking and coffee habits among 70 mastalgia and 70 control cases and detected no association with mastalgia. In another study, 105 mastalgia patients were examined, and caffeine and high-fat food intake were not related to mastalgia [11]. However, Colak et al. [12] suggested that a low-fat diet prevents breast pain as part of the premenstrual syndrome. In our study, smoking, tea intake, and alcohol consumption were not different between the mastalgia and control groups. Interestingly, we found that coffee intake and a fast-food diet were significantly higher in the control group [3].

In a study done by Kizilkaya et al. including 1,150 patients that investigated the causes of mastalgia, the rates of cyclical and noncyclic mastalgia were found to be 61.5% and 38.5% respectively, discussing the mastalgia group of the present study, the rates of cyclic and noncyclic mastalgia were 73.4%, and 26.6%, respectively, while 47.4% of the patients suffered from diffuse pain, and 52.6% from localized pain [7].

Persistent severe mastalgia can occur in 10%-22% of patients and requires medical treatments such as tamoxifen, danazol, bromocriptine, or the application of evening primrose oil, etc [6]. Generally, these types of therapies are not preferred in breast clinics. As a first-step approach, agents such as acetaminophen, NSAIDs, and topical diclofenac are preferred, which are easier to obtain with better patient compliance, and are often effective [7]. In the present study, the ratio of regular analgesic use between the groups was observed to be higher in the mastalgia group, and the most preferred analgesic type was NSAIDs ($p<0.01$) [14,15].

Joyce et al. [16] suggest regular diaries for pain assessment after-treatment and effective treatments such as evening primrose oil should be provided for patients younger than 35 years old with mastalgia in primary care services [17].

CONCLUSION

Mastalgia is the major reason for the presentation of women in breast clinics in Pakistan. Consumption of coffee, tea and multiparity were detected to be related with mastalgia, however breastfeeding, using contraceptives, exercising, nulliparity or having cyclical pain responded better to evening primrose oil. With the help of this study, we have identified risk factors and appropriate treatment so that the majority presenting to breast clinic can be satisfied and treated.

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