ASSOCIATION OF PAIN AND OTHER CLINICAL FEATURES WITH DISEASES OF BREAST IN FEAMLES PRESENTING AT TERTIARY CARE HOSPITALS OF SAHIWAL

Waleeja Shamikha, Yasir Makki, Amjad Zafar*, Qurrat-Ul-Ain Tahir, Rabia Ikram**

District Head Quarter Teaching Hospital, Sahiwal Pakistan, *Mayo Hospital Lahore, Pakistan, **Sahiwal Medical College, Sahiwal Pakistan

ABSTRACT

Objective: To find association of clinical features in patients presenting to outdoor patient department with pathologies of breast.

Study Design: Cross sectional study.

Place and Duration of Study: Sahiwal Medical College Sahiwal, from Oct 2018 to Dec 2018.

Methodology: The cross sectional study was conducted at Sahiwal Medical College Sahiwal from 1st Oct 2018 to 31st Dec 2018 after approval from Institutional Review Board of Sahiwal Medical College Sahiwal. The Data was assessed by IBM-SPSS version 22. Significance of the associations was assessed by Fisher's Exact test.

Results: Median age of the female patients with breast related disorders was 27 ± 13. About 53% of the patients were included in mild pain category, 36% in moderate and 11% in severe pain category (table-I). Most of the patients with breast disorders were diagnosed of abscess (35%), mastitis (23%), fibrocystic changes (14%) and fibro adenomas and carcinomas (7% each) (table-II). The association of pain intensity was found out be statistically significant with different breast diseases (p=0.047) (table-III). Almost 49% of the patients presenting with abscess in breast were having mild pain while 71.4% of the patients diagnosed with carcinoma breast were also having mild pain. Of all the cases presented with breast abscess 77% were having non-cyclic breast pain while 23% of these patients were having non-cyclic extra mammary pain.

Conclusion: Hence it is concluded that the looking into different intensities of pain and other clinical features in patients can help us in making early diagnosis of pathologies related to breast.

Keywords: Breast related disorders, Intensity, Pain.

INTRODUCTION

Pain is the feeling of discomfort and uneasiness in a person[1]. It usually happens due to an underlying problem in human body[2]. It has different levels of intensities varying from mild to moderate and these intensities help the clinicians in making diagnoses accordingly[3]. Some societies also consider pain as blessing as they can address the problem before hand[4].

Breast disorders all around the world are alarming now-a-days as there is increase in prevalence of different diseases of breast[5]. Timely diagnosis of diseases of breast may lead to decrease in mortality of the population. Currently there is great awareness campaign going on in many countries generally[6]. But a lot more attention is needed on other pathologies related to breast as well. Literature review related to breast problems is many folded but a handful of articles are available if association of clinical features with breast related issues is concerned.

This study is targeted to find the association of pain and other clinical features with breast disorders in females. There are numerous testing options available for diagnosing breast related disorders but those are expensive investigations[7]. Rationale of this study is to help the clinicians in future to categorize pain according to breast related issues and reaching the diagnosis without help of expensive testing.

METHODOLOGY

The cross sectional study was conducted at Sahiwal Medical College Sahiwal, from October 2018 to December 2018 after approval from Institutional Review Board of Sahiwal Medical

Correspondence: Dr Yasir Makki, Department of Surgery, District Headquarter Teaching Hospital, Sahiwal Pakistan

Received: 10 Jan 2019; revised received: 26 Sep 2019; accepted: 07 Oct 2019

College Sahiwal. A validated questionnaire was filled by the patients after taking informed consent from them. Convenient sampling technique was used. Biopsies of the patients were also done.

Sample size was calculated according to following formula:

$$Sample\ Size = \frac{Z_{1-\alpha/2}2\ p(1-p)}{d^2}$$

Z1-a/2= is standard normal variant (at 5% type 1 error (p <0.05) it is 1.96. As in majority of studies

p-values are considered significant below 0.05 hence 1.96 is used in formula.

p = Expected proportion in population based on previous studies or pilot studies = 0.807.

d = Absolute error or precision= 0.08.

Sample size = 97.

The female patients presenting to surgical outpatient department of Tertiary care hospitals of Sahiwal with different breast related disorders were included in the study while the males and the patients with disorders other than those related to breast were excluded.

The Data was assessed by IBM-SPSS version 22. Frequency distributions of study participants were calculated. Significance of the associations was assessed by Fisher's Exact test. A p-value less than 0.05 was taken as statistically significant.

RESULTS

The continuous variables of our data were having skewed distribution hence their median ± interquartile ranges were calculated. Median age of the female patients with breast related disorders was 27 ± 13. Gender frequency distribution was not calculated as all the patients were females. Majority were married (86%) while 13% were unmarried. The intensity of the pain in these patients was calculated by pain rating scale (PRS). The patients with score 0-3 were included in mild category of pain. Moderate pain category was given to patients with scores of 4-7 and patients with severe pain were given scores of 8-10. About 53% of the patients were included in mild pain category, 36% in moderate and 11% in severe pain category (table-I).

As far as the types of pain were concerned in these patients, 8% of them were having cyclic breast pain, 50% presented with non-cyclic breast pain and 42% were having non-cyclic extra mammary pain. Cyclic pain was associated with menstrual cycles while non-cyclic pain was independent of the menstrual cycles of the female patients. The causes of non-cyclic breast pain included trauma and surgery related to breast

Table-I: Frequency of demographic variables with percentages (n=100).

Variables	Groups	n (%)
Marital Status	Married	86 (86)
	Unmarried	13 (13)
	Divorced	1 (1.0)
Pain types	Cyclic	8 (8.0)
	Non-Cyclic Breast Pain	50 (50)
	Non-Cyclic extra mammary Pain	42 (42)
Pain Intensity	Mild	53 (53)
	Moderate	36 (36)
	Severe	11 (11)

Table-II: Frequency of different diagnosis with percentages (n=100).

Variables	Groups	n (%)
Diagnosis	Abscess	35 (35)
	Mastitis	23 (23)
	Fibrocystic Changes	14 (14)
	Musculoskeletal Disorders	14 (14)
	Carcinoma	7 (7)
	Fibro adenoma	7 (7)

while non-cyclic extra mammary pain was caused by musculoskeletal issues and cysts. Most of the patients with breast disorders were diagnosed of abscess (35%), mastitis (23%), fibrocystic changes (14%) and fibro adenomas and carcinomas (7% each) (table-II).

While doing the inferential statistics, the association of pain intensity was found out be statistically significant with different breast diseases (p=0.047). Almost 49% of the patients presenting with abscess in breast were having mild pain while 71.4% of the patients diagnosed with carcinoma breast were also having mild

pain. Same was the case with the patients diagnosed with fibro adenomas also having mild pain (71.4%). Fifty percent of the patients diagnosed with fibrocystic changes were having moderate pain. Patients diagnosed with mastitis and musculoskeletal disorders were also having their majority with mild pain categories (56.5% and 50% respectively) (table-III).

Table-III: Prevalence of breast diseases in patients presenting at tertiary care hospitals of sahiwal according to pain intensity (n=100).

Variable	Diagnosis						*p-value
Pain Intensity	Abscess 35 (35%)	Carcinoma 7 (7%)	Fibro Adenoma 7 (7%)	Fibro Cystic Changes 14 (14%)	Mastitis 23 (23%)	Musculoskel *et al* Disorders 14 (14%)	
Mild (n=53)	17 (48.6%)	5 (71.4%)	5 (71.4%)	6 (42.9%)	13 (56.5%)	7 (50%)	0.047
Moderate (n=36)	12 (34.3%)	1 (14.3%)	1 (14.3%)	7 (50%)	8 (34.8%)	5 (35.7%)	
Severe (n=11)	4 (17.1%)	1 (14.3%)	1 (14.3%)	1 (7.1%)	2 (8.7%)	2 (14.3%)	

**Calculated by Fisher's Exact Test*

Table-IV: Prevalence of breast diseases in patients presenting at tertiary care hospitals of sahiwal according to pain types (n=100).

Variable	Diagnosis						*p-value
Pain Types	Abscess 35 (35%)	Carci-noma 7 (7%)	Fibro adenoma 7 (7%)	Fibro Cystic Changes 14 (14%)	Mastitis 23 (23%)	Musculoskel *et al* Disorders 14 (14%)	
Cyclic Breast Pain (n=8)	-	-	2 (28.6%)	6 (42.9%)	-	-	NA*
Non-Cyclic Breast Pain (n=50)	27 (77%)	4 (57%)	2 (28.6%)	6 (42.9%)	11 (47.6%)	-	
Non-Cyclic Extra Mammary Pain (n=42)	8 (23%)	3 (43%)	3 (42.9%)	2 (14.3%)	12 (52.4%)	14 (100%)	

**Cannot be calculated as some variables have zero values*

Table-V: Prevalence of Breast Diseases in Patients presenting at Tertiary care Hospitals of Sahiwal According to Marital Status (n=100).

Variable	Diagnosis						*p-value
Marital Status	Abscess 35 (35%)	Carcinoma 7 (7%)	Fibro adenoma 7 (7%)	Fibro cystic Changes 14 (14%)	Mastitis 23 (23%)	Musculoskel *et al* Disorders 14 (14%)	
Married (n=86)	30 (85.7%)	6 (98.6%)	5 (71.4%)	12 (71.4%)	19 (73.9%)	13 (98.6%)	0.297
Unmarried (n=13)	4 (11.4%)	1 (1.4%)	2(28.6%)	2 (28.6%)	4 (21.7%)	1 (1.4%)	

**Calculated by Fisher's Exact Test*

Of all the cases presented with breast abscess 77% were having non-cyclic breast pain while 23% of these patients were having non-cyclic extra mammary pain. None was having cyclic breast pain, fifty seven percent of the patients diagnosed with carcinoma breast also presented with non-cyclic breast pain. Those diagnosed with fibro adenoma forty two (point nine percent were having non-cyclic extra mammary pain. An equal percentage (42.9%) of the patients diagnosed with fibrocystic changes was having cyclic and non-cyclic breast pain. Patients with mastitis presented with non-cyclic extra mammary pain with the percentage of 52.2%. All the patients with musculoskeletal disorder presented with non-cyclic extra mammary pain. A *p*-value cannot be computed because more than one variable have values of zero (table-IV).

When inferential statistics was calculated with reference to the marital status non- significant results (p=0.297) were found. Though it was seen that 85.7%of the patients with abscess belonged to married category yet all the patients with carcinoma breast also belonged to the same category. Majority (71.4%) of those diagnosed with fibro adenoma were also married. Same was the

case with patients of fibrocystic changes. Majority of those with musculoskeletal problems and mastitis were also married (98.6% & 73.9% respectively) (table-V).

DISCUSSION

More than 200 patients daily present at tertiary care hospitals of Sahiwal in outpatient department of general surgery. We collected our data across three months and focused on the patients presenting with complains of pain in chest particularly. Before selection we ruled out any emergency issue related to pain in chest, i.e. myocardial infarction. Detailed history and informed consent was taken from the patients before filling out the questionnaire.

Majority of the females were married (86%) who presented with chest pain which showed high frequency of breast related disorders in married females. A previous study done abroad also showed high prevalence of breast related disorders in married people though their study also included males with breast pathologies[8]. Literature review also suggested that in two of previous studies, the intensity of pain was of moderate category in most of the patients[9] which was in contrary to our findings which showed that majority belonged to mild pain category. Occurrence of pain in relation to menstrual cycle was also asked in the questionnaire. A previous study showed that cyclic breast pain was the main presentation in their study subjects[10] which was again in contrary to our results. Fifty percent of our sample population was having non cyclic breast pain. As far as the diagnosis of the study subjects was concerned, in addition to local physical examination we did chest x-ray, mammography and ultrasounds. If a lump was found on ultrasound then BIRADS category scale[11] was used for further assessment. If BIRADS score was between 3 to 5 then further tissue diagnosis was donethrough biopsies taken by fine needle aspiration cytology and Trucut techniques. Abscess and mastitis were two major diagnoses made in our study participants (35% and 23% respectively).

We found out statistically significant results when intensities of pain was cross tabulated with different diagnosis made by above mentioned investigations (p=0.47). A previous study showed that the patients diagnosed with abscess were majority in severe category of pain according to pain rating scale[12] which was in contrary to our result which showed that majority of our patients with abscess presented with mild pain. Another previous study reported that patients with both abscess and mastitis were in moderate pain while presenting at hospital[13].

When the disorders of breast were computed with cyclic and non-cyclic types of pain, the majority of the patients with breast abscess, CA breast and fibrocystic changes were having non-cyclic breast pain. The patients with mastitis and musculoskeletal disorders were majorly having non-cyclic extra mammary pain. A previous literature showed that cyclic breast pain was most common feature presented in patients with CA breast[14].

Though we did not find significant results while finding the association between different breast disorders and marital status of the study participants but we found out that the patients of all the diagnosed disorders were mostly married. An equal percentage of the study participants belonging to married and unmarried categories were seen in patients diagnosed of CA breast and mastitis[15-18].

ACKNOWLEDGEMENT

The authors are deeply indebted to Dr. Akhtar Mehboob, Associate professor and Head, Department of Surgery, Sahiwal Medical College Sahiwal for his motivation to initiate and complete this project successfully.

CONCLUSION

Hence it is concluded that the looking into different intensities of pain and other clinical features in patients can help us in making early diagnosis of pathologies related to breast. As we had limited sample size so a detailed study in future can be done with extended sample size.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Hamood R, Hamood H, Merhasin I, Keinan-Boker L. Chronic pain and other symptoms among breast cancer survivors: prevalence, predictors, and effects on quality of life. Breast Cancer Res Treat 2018; 167(1): 157-69.
2. Mafu TS, September AV, Shamley D. The potential role of angiogenesis in the development of shoulder pain, shoulder dysfunction, and lymphedema after breast cancer treatment. Cancer Manag Res 2018; 10(1): 81-88.
3. Hashemi DA, Brown-Joel ZO, Tkachenko E, Nelson CA, Noe MH, Imadojemu S, et al. Clinical features and comorbidities of patients with necrobiosislipoidica with or without diabetes. J Am Med Assoc Dermatology 2018; 155(4): 455-59.
4. Polgár C, Ott OJ, Hildebrandt G, Kauer-Dorner D, Knauerhase H, Major T, et al. Late side-effects and cosmetic results of accelerated partial breast irradiation with interstitial brachytherapy versus whole-breast irradiation after breast-conserving surgery for low-risk invasive and in-situ carcinoma of the female breast: 5-year results of a randomised, controlled, phase 3 trial. Lancet Oncol 2017; 18(2): 259-68.
5. Casarin Costa JR, Virgens AR, de Oliveira Mestre L, Dias NF et al. Sweet syndrome: clinical features, histopathology, and associations of 83 cases. J Cutan Med Surg 2017; 21(3): 211-16.
6. Syrowatka A, Motulsky A, Kurteva S, Hanley JA, Dixon WG, Meguerditchian AN, et al. Predictors of distress in female breast cancer survivors: a systematic review. Breast Cancer Res Treat 2017; 165(2): 229-45.
7. Thronicke A, Kröz M, Merkle A, Matthes H, Herbstreit C, Schad F. Psychosocial, cognitive, and physical impact of elaborate consultations and life review in female patients with non-metastasized breast cancer. J Complement Med Res 2018; 25(2): 92-101.
8. Holbrook AI, Moy L, Akin EA, Baron P, Didwania AD, Heller SL, et al. ACR Appropriateness Criteria® Breast Pain. J Am Coll Radiol 2018; 15(11): S276-82.
9. Ho PJ, Hartman M, Gernaat SA, Cook AR, Lee SC, Hupkens L, et al. Associations between workability and patient-reported physical, psychological and social outcomes in breast cancer survivors: a cross-sectional study. Support Care Cancer 2018; 26(8): 2815-24.
10. Evans A, Trimboli RM, Athanasiou A, Balleyguier C, Baltzer PA, Bick U, et al. Breast ultrasound: recommendations for information to women and referring physicians by the European Society of Breast Imaging. Insights Imaging 2018; 9(4): 449-61.
11. Stephens KE, Levine JD, Aouizerat BE, Paul SM, Abrams G, Conley YP, et al. Associations between genetic and epigenetic variations in cytokine genes and mild persistent breast pain in women following breast cancer surgery. Cytokine 2017; 99(1): 203-13.
12. Purkayastha D, Venkateswaran C, Nayar K, Unnikrishnan UG. Prevalence of depression in breast cancer patients and its association with their quality of life: A cross-sectional observational study. Indian J Palliat Care 2017; 23(3): 268.
13. Costa WA, Monteiro MN, Queiroz JF, Gonçalves AK. Pain and quality of life in breast cancer patients. Clinics 2017; 72(12): 758-63.
14. Kushwaha AC, Shin K, Kalambo M, Legha R, Gerlach KE, Kapoor MM, et al. Overutilization of health care resources for breast pain. Am J Roentgenol 2018; 211(1): 217-23.
15. Jokich PM, Bailey L, D'Orsi C, Green ED, Holbrook AI, Lee SJ, et al. ACR Appropriateness Criteria® breast pain. J Am Coll Radiol 2017; 14(5): S25-33.
16. Chetlen A, Kapoor MM, Watts MR. Mastalgia: Imaging Work-up Appropriateness. Academic Radiol 2017; 24 (3): 345-49.
17. Howard MB, Battaglia T, Prout M. The effect of imaging on the clinical management of breast pain. J Gen Intern Med 2012; 27: 817–24.
18. Cho MW, Grimm LJ, Johson KS. Focal Breast Pain: Does Breast Density Affect the Need for Ultrasound? Academic Radiol 2017; 24(1): 53-59.