

Association of Mastalgia with Anxiety, Depression and Quality of Life in Adolescent Females

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ABSTRACT

Aim: For the association of mastalgia with anxiety, depression and quality of life in adolescent females.

Methodology: Cross-sectional prospective study was conducted in the Department of Surgery Special Unit, Services Hospital, Lahore and Department of Surgery, Hayat Memorial Hospital Lahore from 1st November 2022 to 30th April 2023. Fifty mastalgia patients after complete clinical diagnosis and confirmation of mastalgia (non-cyclic) and also 50 controls were enrolled. All adolescent females within the age group of 20-40 years were selected. Those adolescent females having no clinical history of breast disease or psychiatric illness were taken through volunteer approach as controls. All clinical information of patients and controls as well as the one related with qualitative variables were entered in a well-structured questionnaire.

Results: The mean age of the mastalgia patients was 27.23 ± 4.20 years while that of controls was 26.62 ± 4.53 years having no comparative difference between the two groups in accordance with the mean age. There was a significant variance within energy levels of both groups with an obvious reduction in the energy level of the mastalgia group in comparison to the health controls. Hamilton-Depression Scale (HDS), and Hamilton Anxiety Rating Scale (HARS) scoring method also presented a significant variance between females suffering from mastalgia in comparison to the normal control females.

Practical Implication: Mastalgia, or breast pain, significantly impacts patients' physical, general, and psychological health. It impairs physical functioning, reduces energy levels, and leads to depression and anxiety. A holistic approach, addressing both physical symptoms and psychological impacts, is crucial for improving patients' quality of life and promoting overall well-being.

Conclusion: Mastalgia has a significant impact on physical functioning, generalized health, body aching and psychological health.

Keywords: Mastalgia, Depression, Etiology, Psychological health

INTRODUCTION

Mastalgia, a common condition among women, is a leading cause for seeking admission to breast or general surgery clinics. It is also the most common congenial disorder affecting the breast. Approximately 50 to 80% of women experience mastalgia within any time of their fertility life, regardless of wide research, up to the present the comprehensive knowledge of its etiology remains indefinable¹⁻³.

Mastalgia may be apparent as cyclic or non-cyclic, irregular or continuous, and localized or widespread in nature. Non-cyclic mastalgia can initiate from breast tissue or the chest wall, presenting as intermittent or continuous discomfort.⁴ However, its presentation through chest wall has yet not been identified. Cyclic mastalgia is marked by intensive twinge during the premenstrual period. Physical causes are frequently indefinable, and therapeutic treatments output has inadequate support of literature. In 1949, Patey suggested for the first time probable psychological base in the majority of patients^{5,6}.

Although outstanding developments in radiology and medicine have been achieved, the precise cause of mastalgia remains slightly indefinite. Specified research says connection between mastalgia and depression, anxiety, and somatization disorders, mostly cases are resilient to medicinal. Moreover, high stress has also been related with mastalgia⁷⁻⁹.

The purpose of the present study is focused on highlighting the twofold association between mastalgia complaints and depression, and anxiety in women seeking medical attention for mastalgia. It is pertinent to understand that researches does not associate mastalgia effects on the life quality through pathological conclusions in clinical and radiological evaluation¹⁰, therefore making it highly significant to assess the psychosocial effect of mastalgia on females quality of life.

MATERIALS AND METHODS

This cross-sectional prospective study was conducted in the Department of Surgery Special Unit, Services Hospital, Lahore and Department of Surgery, Hayat Memorial Hospital Lahore from 1st November 2022 to 30th April 2023. After permission from Institutional Ethical Review Board, we enrolled 50 mastalgia patients after complete clinical diagnosis and confirmation of mastalgia (non-cyclic) and also 50 controls for comparative analysis between variables. All adolescent females within the age group of 20-40 years were enrolled. Those patients suffering from breast carcinoma, psychiatric illness, taking anti-depressant drugs, previously operated, having chest trauma in past month, breast cysts, breast abscess, pregnancy or were lactating mothers were excluded from the study. Females having mastalgia for more than 6 months were also excluded. All participants cases or controls were formally requested to give a written consent of participation in the study. The sample size of the study was estimated through relevance of the issue in general female adolescents and was estimated by using sample size calculator which applied 80% power of test with 95% confidence of interval and 5% margins of error. Those adolescent females having no clinical history of breast disease or psychiatric illness were taken through volunteer approach as controls. All clinical information of patients and controls as well as the one related with qualitative variables were entered in a well-structured questionnaire. All patients underwent pathological, and radiological imaging. Short Form 36 (SF-36), as well as Hamilton-Depression Scale (HDS), in addition to the Hamilton Anxiety Rating Scale (HARS) was applied for the assessment of anxiety, depression and psychosocial impacts of mastalgia on the quality of patient's life. The SF-36 is a self-reporting scale which assess under 8 dimensions including physical functioning and role, body aching, vitality, psychological health and generalized health with emotional impacts through scoring between 0-100. Higher score is a grantee of better quality of life. The HDS is applied for assessing depressive status including a 17 queries-based questionnaire between 0-14. Whereas the HARS determines anxiety levels and comprises of 14 questions. Each question is scored between 0-4 with a total score

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ranging within 0-56. Data was analyzed using SPSS-26.0 through t test with a p value <0.05 as significant.

RESULTS

The mean age of the mastalgia patients was 27.23 ± 4.20 years while that of controls was 26.62 ± 4.53 years having no comparative difference between the two groups in accordance with the mean age. Majority of the females within both groups were between 0-30 years (Table 1).

The short form 36 scoring presented significant decrease in physical functioning and body aching as well as reduced feeling of generalized health and psychological well being in patients suffering from mastalgia in comparison to controls. There was a

significant variance within energy levels of both groups with an obvious reduction in the energy level of the mastalgia group in comparison to the health controls (p value 0.007). The overall quality of life was scored lower and poor in cases verses to the controls of the study (Table 2).

Hamilton-Depression Scale (HDS), and Hamilton Anxiety Rating Scale (HARS) scoring method also presented a significant variance between females suffering from mastalgia in comparison to the normal control females wherein a higher value of HDS and HARS as 11.4 ± 1.01 and 12.7 ± 1.19 was observed respectively. This presented higher levels of depression and anxiety in the mastalgic females (Table 3)

Table 1: Comparison of Age between cases and controls (n=100)

| Age (years) | Mastalgia group | Control group | P value |
|---------------|------------------|------------------|---------|
| 20-30 | 30 (60%) | 32 (64%) | |
| 31-40 | 20 (40%) | 18 (36%) | |
| Mean \pm SD | 27.23 ± 4.20 | 26.62 ± 4.53 | 0.61 |

Table 2: Group wise short form 36 comparison within cases and controls

| SF-36 | Mastalgia group | Control group | P value |
|----------------------|------------------|------------------|---------|
| Physical functioning | 70.74 ± 3.61 | 79.0 ± 1.85 | 0.03 |
| Physical protagonist | 58.13 ± 5.31 | 66.25 ± 4.52 | 0.25 |
| Body aching | 57.81 ± 2.77 | 68.3 ± 2.57 | 0.01 |
| Generalized health | 55.18 ± 2.47 | 61.87 ± 1.93 | 0.02 |
| Social functioning | 64.69 ± 2.61 | 72.18 ± 4.8 | 0.21 |
| Energy level | 44.55 ± 3.64 | 57.1 ± 2.55 | 0.007 |
| Emotional character | 53.83 ± 2.22 | 57.5 ± 2.46 | 0.26 |
| Psychological health | 50.81 ± 5.98 | 64.94 ± 5.06 | 0.08 |

Table 3: Comparison of the depression and anxiety scale scores among cases and controls

| Scale | Mastalgia group | Control group | P value |
|-------|-----------------|-----------------|---------|
| HDS | 11.4 ± 1.01 | 9.40 ± 0.57 | 0.05 |
| HARS | 12.7 ± 1.19 | 8.61 ± 0.81 | 0.04 |

DISCUSSION

The aetiology of mastalgia researches remains ongoing. Certain factors like caffeine, cigarette smoking, high plasma fatty acids, prolactin, and acute stress have been suggested to have probable impact on the etiology of mastalgia. Past studies described that mastalgia without clinical or radiological symptoms having no association with psychoneurotic disorders. Though, depression observed consistently around 44% of cases. Moreover, it has been observed that patients with least concerned to attain treatment are often tend to have higher score of anxiety and depression. Previous researches show that mastalgia patients have some other psychological disorders which may cause loss of confidence, vulnerability, and depression¹¹⁻¹⁴. Two groups were formed in a demonstration, one group consisted with mastalgia patients without primary breast pathology and other group comprised of healthy volunteers. After the comparison, study indicates that patient's group had higher levels of anxiety than the healthier volunteers' group. Difference in depression levels between the groups was not statistically significant¹⁵⁻¹⁸.

Existing Literature reveals that increasing the fear of breast cancer among women in daily life is related to severe mastalgia. about 70% of patients led to attain successful treatment when appropriate suggestion and assurance given them that the symptoms are not related to cancer^{17,18}.

Breast cancer is a significant concern for women around the world, but its association with mastalgia has long been a subject of debate. According to recent studies, only 0.4% of patients who experience mastalgia are diagnosed with breast cancer. Surprisingly, it has not found vibrant relationship between mastalgia and development of breast cancer in the years following initial symptoms. A study conducted by Plu-Bureau et al indicates an increased risk of breast cancer in patients with benign breast pathology and mastalgia¹⁸.

Further investigation into the possible links between mastalgia and breast cancer, especially in cases where organic

pathology is present, there was no data found on the scope to mastalgia without organic pathology may be linked with breast cancer. It is found that these individuals had lower functional status scores and significant depression scores compared to those without mastalgia during the preoperative period. This proposes that mastalgia might have significant impact on the mental comfort of breast cancer patients^{14,19,20}.

A significant study revealed effects of cyclic mastalgia on several characteristics of women's lives. It impacted sleeping status by 10%, physical activity by 36% and sexual activity by 48%²⁰. The study included participants with benign breast diseases. It lacked a control group. Additionally, chronic or repetitive mastalgia intensely affects women's quality of life. Effective and consistent drugs are still unavailable yet¹⁴.

Numerous studies have concentrated on evaluating the quality of life in relation to cancer surgery or renovation. Radical surgeries have been found to decrease the quality of life however rehabilitative surgeries tend to improve it²⁰.

In our study, we observed significant decreases in four out of eight SF-36 scales (physical functioning, bodily pain, general health, and energy) within the patient group.

CONCLUSION

Mastalgia has a significant impact on physical functioning, generalized health, body aching and psychological health. It drastically effects the energy levels of the patients in comparison to the healthy controls. It also causes a significant depression and anxiety among patients.

Authorship and contribution declaration: Each author of this article fulfilled following Criteria of Authorship:

1. Conception and design of or acquisition of data or analysis and interpretation of data.
2. Drafting the manuscript or revising it critically for important intellectual content.

3. Final approval of the version for publication.

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