

Original Research Article

CLINICAL AND DEMOGRAPHIC PROFILE OF PATIENTS PRESENTING WITH MASTALGIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Women frequently experience mastalgia, or breast pain, which is not typically an indication of breast cancer or another breast condition. Mastalgia is the most prevalent benign breast ailment and a major reason for women to be admitted to breast or general surgery clinics. Between 50 and 80 percent of women experience mastalgia at some point in their life, and the exact cause of the condition is still unknown. This study aims to evaluate the clinical and demographic characteristics of patients presenting with mastalgia.

Materials and Methods: A prospective cross-sectional study was conducted among 100 women presenting with mastalgia at the General Surgery outpatient department of a tertiary care teaching hospital. Eligible participants underwent detailed clinical evaluation, and data were collected using a structured questionnaire covering demographic characteristics, medical and family history, breast pain characteristics, reproductive and menstrual history, lactation status, and associated clinical findings. The collected data were analyzed descriptively to determine the clinical and demographic profile of patients with mastalgia.

Results: Most patients were married (76%), had completed schooling (64%), and were employed (69%). A history of breast pain was reported by 54%, and 4% had undergone previous breast surgery. Medical history was positive in 31%, trauma in 11%, hormonal contraception use in 64%, and family history of breast disease in 32%. Cyclical mastalgia was more common (76%) than non-cyclical (24%), with the left breast most frequently involved (48%). Pain was mostly gradual in onset (66%) and described as heaviness (42%). Precipitating factors were noted in 23% and relieving factors in 19%. Most patients were parous (78%), lactating (12%), and had irregular menstrual cycles (62%), with 12% having gynecological disorders. Generalized tenderness was seen in 58%, and 40% had a breast mass, predominantly left-sided. Lesions were diffuse in 58% of cases. Only 2% had visible shape changes, 10% had lymph node enlargement, and none had ulcers. Breast masses were usually under 2 cm (34%). Nipple discharge was present in 10%—unilateral (3 patients), bilateral (7 patients), and all 10 patients had serous discharge.

Conclusion: Mastalgia is a common benign breast complaint, most frequently seen in women aged 31–40 years, with cyclical pain being the most prevalent type. It is often associated with hormonal factors, reproductive history, and socio-demographic variables. Most patients presented with diffuse tenderness, small or no palpable masses, and minimal signs of malignancy. Nipple discharge was uncommon and mostly benign. Our findings align with previous studies, emphasizing the importance of thorough evaluation and reassurance to effectively manage mastalgia and reduce patient anxiety.

Keywords: Mastalgia, Mastodynia, mammalgia.

INTRODUCTION

Breast pain—referred to as mastalgia, mastodynia, or mammalgia—is the most commonly reported symptom among women visiting breast clinics. It affects approximately 60–70% of women at some point, with 10–20% experiencing severe discomfort. Patients often present with concerns about breast cancer or intense pain that disrupts daily life. However, mastalgia is rarely linked to serious pathology and is generally manageable with medical treatment. Therefore, it is essential for clinicians to rule out malignancy and provide reassurance.^[1,2,3]

Physiological mastalgia is most commonly associated with premenstrual tension syndrome (PMTS) and aberrations in normal breast development and involution (ANDI), necessitating a structured diagnostic and therapeutic approach. Potential underlying causes include fat necrosis, fibroadenosis-related nipple discharge, abscesses, infections such as periductal mastitis, cysts, malignancy, Mondor's disease, diabetic mastopathy, and fibroadenoma. Certain medications—such as methyl dopa, spironolactone, digitalis, chlorpromazine, and hormonal contraceptives—can also contribute to breast pain.^[4,5,6]

Mastalgia may sometimes be misinterpreted as non-breast-related pain. While its exact cause remains unclear, cyclical mastalgia is believed to involve hormonal imbalances, including hyperprolactinemia, progesterone deficiency, and elevated estrogen levels.^[7,8,9] Though studies have not consistently shown hormonal differences between patients and controls, low luteal phase progesterone and increased prolactin levels have been observed in women with mastalgia. Additionally, patients often report higher stimulated prolactin levels. Non-cyclical mastalgia may be linked to fibrocystic changes (ANDI), hormonal fluctuations during life stages such as puberty, pregnancy, or menopause, and in rare cases, alcoholism due to steroid metabolism disruption. Other causes include underlying breast pathology or referred pain from chest wall, musculoskeletal, cardiovascular, gastrointestinal, or respiratory conditions—such as ischemic heart disease, peptic ulcers, pleuritis, or costochondritis (Tietze's disease), and nerve-related pain from cervical spondylosis.^[10-13] This study aims to evaluate the clinical and demographic characteristics of patients presenting with mastalgia.

MATERIALS AND METHODS

This cross sectional prospective study was carried out on 100 women with symptoms of mastalgia who attended our general surgery out patient department in our college. The women of 20- 45yrs with symptoms of mastalgia were included in the study.

Exclusion Criteria

- Pregnant women
- Postmenopausal women
- Patients with breast malignancy
- Patient with psychiatric illness or under any anti-psychotic medications

Out of 150 participants, 100 were selected based on the inclusion and exclusion criteria. Ethical approval acquired from the institutional ethics commission. During the first visit a detailed clinical history and physical examination was done. Informed consent was obtained from all participants after explaining the purpose of the study. For those who chose to complete the survey using a hard copy, a signed consent was collected. Participation was entirely voluntary, with no coercion involved, and participants had the right to refuse or withdraw from the study at any point without any consequences.

Interventions

Questionnaire relating to breast pain were given to patients only after taking consent from them. The patients who agreed to participate in the study were requested to answer a questionnaire after assuring them of confidentiality. The questionnaire provides information about the age distribution, socio-economic data, surgery, treatment, family histories were taken. The data on pain type, pain characteristics, precipitating/relieving factors, lactation, menstrual, swelling and discharges were also taken.

RESULTS

Age Distribution

In our study, 20–30 years age group included 30 patients, making up 30% of the total. The majority of patients belonged to the 31–40 years age group, accounting for 55 patients (55%). The 41–45 years age group included 15 patients (15%). This indicates that mastalgia was more commonly observed among women in the middle reproductive age group.

Table 1: Age Distribution

Age group	No of patients	Percentage
20-30 YEARS	30	30%
31-40 YEARS	55	55%
41-45 YEARS	15	15%

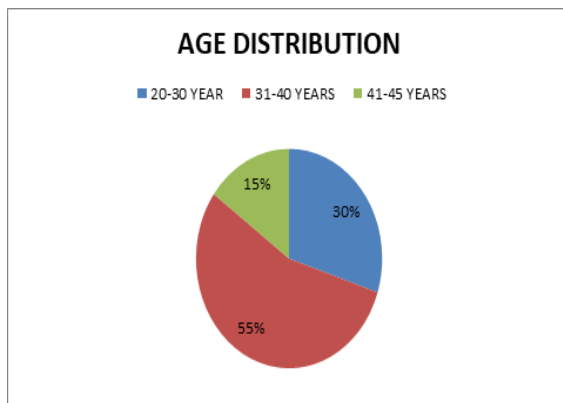


Figure 1: Age Distribution

Past History

Out of the 100 patients studied, 54 reported a history of breast pain, while 46 did not. A significant majority (96%) had no history of previous breast surgery. Regarding other medical conditions, 31 patients had relevant medical histories, whereas 69 had none. A smaller proportion (11%) reported a history of breast trauma. Hormonal contraception usage was noted in 64 patients, suggesting a potential hormonal influence, while 36 denied its use. Additionally, 32 patients had a positive family history of breast-related conditions, which may indicate a genetic or hereditary predisposition.

Table 2: Past History

History	
History of breast pain	
History of breast pain +	54
History of breast pain -	46
Surgery history	
Surgery history +	4
Surgery history -	96
Medical history	
Medical history +	31
Medical history -	69
Trauma history	
Trauma history +	11
Trauma history -	89
Hormonal Contraception Usage	
Hormonal Contraception Usage +	64
Hormonal Contraception Usage -	36
Family History	
Family History +	32
Family History -	68

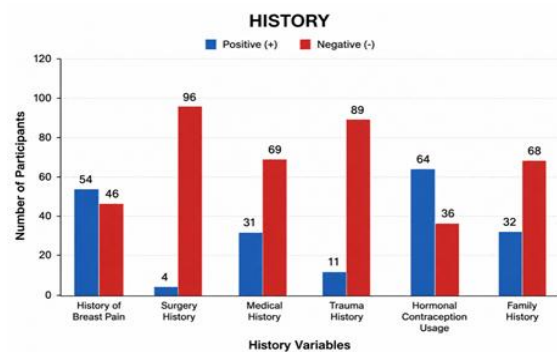


Figure 2: Past History

Socio-Economic Characteristics

Among the 100 patients studied, the majority were married (76%), while 14% were unmarried and 10% were either widowed or divorced. 64 patients had completed schooling, 20 were undergraduates, 12 had postgraduate degrees, and 4 held a PhD, indicating a diverse range of educational attainment. 69% of the patients were employed, whereas 31% were unemployed, reflecting varied socio-economic backgrounds within the study population.

Table 3: Socio-Economic Characteristics

SOCIO-ECONOMIC CHARACTERISTICS	
Marital status	
Unmarried	14
Married	76
Widowed/Divorced	10
Education	
School	64
Undergraduate	20
Post-graduate	12
PhD	4
Occupation	
Employee	69
Un-employed	31

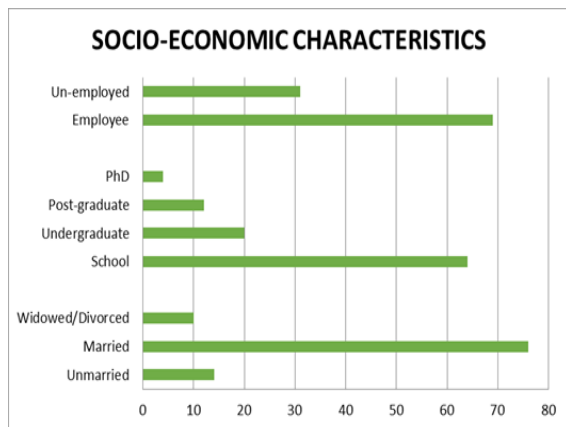


Figure 3: Socio-Economic Characteristics

Mastalgia Characteristics

Among 100 patients with mastalgia, 76% had cyclical pain and 24% had non-cyclical pain. The left breast was most commonly affected (48%), followed by the right (32%) and bilateral involvement (20%). Gradual onset was noted in 66%, and the most common pain nature was heaviness (42%). Precipitating and relieving factors were reported in 23% and 19% respectively. Most patients were parous (78%) and non-lactating (88%). Pain was predominantly premenstrual (50%) or menstrual (32%), with 62% having irregular menstrual cycles. Gynaecological disorders were present in 12% of cases.

Table 4: Mastalgia Characteristics

Mastalgia Characteristics	No. of. Patients
Pain Type	
Cyclical	76
Non-cyclical	24
Site of pain	
Left	48
Right	32
B/L	20
Onset of pain	
Gradual onset	66
Sudden onset	34
Nature of pain	
Pin prick pain	32
Heaviness	42
Crushing pain	20
Burning	6
Precipitating factors	
Precipitating factors +	23
Precipitating factors -	77
Relieving factors	
Relieving factors +	19
Relieving factors -	81
Obstetrical history	
Nulliparous	22
Parous	78
Timing of pain	
Pre-menstrual	50
Menstrual	32
Throughout	18
Menstrual cycle history	
Regular Menstrual Cycle	38
Irregular Menstrual Cycle	62
Gynaecological disorders	
Gynaec. Disorders +	12
Gynaec. Disorders -	88
Lactation	
Lactating	12
Non-lactating	88

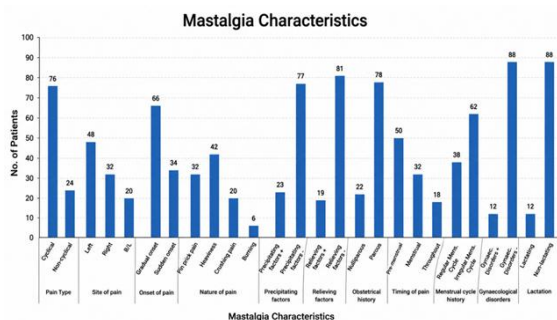


Figure 4: Mastalgia Characteristics

Clinical Characteristics

In our study, Among the 100 patients assessed, 58% had generalised breast tenderness, while 42% had localised tenderness. The lumpiness was present in 40% of patients, with left-sided lumpiness being most common (19%), followed by right-sided (16%) and bilateral (5%). The majority (60%) had no palpable mass. Lesions were diffuse in 58% of cases, with others located across various quadrants. Only 2% showed visible shape changes. Lymph

node enlargement was observed in 10% of patients, and none had breast ulcers.

Table 5: Clinical Characteristics

Characteristics	No. of. Patients
Tenderness	
Localised Tenderness	42
Generalised Tenderness	58
Breast mass	
Right side mass	16
Left side mass	19
B/L mass	5
Absent	60
Quadrant	
Diffuse	58
upper outer quadrant	12
lower outer quadrant	9
upper inner quadrant	10
lower inner quadrant	11
Shape Change	
Shape change +	2
Shape change -	98
Lymph Nodes	
Lymph Nodes +	10
Lymph Nodes -	90
Ulcers	
Ulcers +	0
Ulcers -	100

Discharge Characteristics

Out of 100 patients, **10%** presented with breast discharge, while **90%** did not. Among those with discharge, **3 patients** had unilateral (U/L) discharge,

and **7 patients** had bilateral (B/L) discharge. In terms of appearance, **10 patients** had **serous** discharge.

Table 6: Discharge Characteristics

Characteristics	No. of. Patients
Discharge	
Right side discharge	8
Left side discharge	9
B/L discharge	7
No Discharge	90
Breast Discharge Side	
U/L	3
B/L	7
Colour	
Serous discharge	10

DISCUSSION

In our study, the 20–30 years age group included 30 patients, making up 30% of the total. The largest proportion was observed in the 31–40 years age group, comprising 55 patients or 55%. The 41–45 years age group had 15 patients (15%). Shah M et al state from their study on mastalgia that the mean age of patients in their study was 33 years. Nirhale DS et al,^[14] state that 42 patients (52.5%) out of 80 complaining of mastalgia were in the age group of 31–40 years, followed by 28 patients (35%) below the age of 30 years.

Out of the 100 patients studied, 54 reported a history of breast pain, while 46 did not. Four patients (4%) had a history of previous breast surgery. Regarding other medical conditions, 31 patients had relevant medical histories, whereas 69 had none. A smaller proportion (11%) reported a history of breast trauma. Hormonal contraception usage was noted in 64 patients, suggesting a potential hormonal

influence, while 36 denied its use. Additionally, 32 patients had a positive family history of breast-related conditions, which may indicate a genetic or hereditary predisposition. Ali AA et al,^[16] Among the 150 patients studied, 49.3% reported a history of breast pain, while 7.3% had a history of breast mass. Breast trauma was uncommon, noted in only 4% of cases. Drug use was reported by 42% of patients, while smoking was rare (4.7%). Hormonal contraception was used by 43.3% of the patients. Additionally, 40% had a family history of breast diseases, indicating a notable proportion with potential genetic predisposition.

Among the 100 patients studied, the majority were married (76%), while 14% were unmarried and 10% were either widowed or divorced. 64 patients had completed schooling, 20 were undergraduates, 12 had postgraduate degrees, and 4 held a PhD, indicating a diverse range of educational attainment. 69% of the patients were employed, whereas 31% were unemployed, reflecting varied socio-economic

backgrounds within the study population. Similar to our study, Ali AA et al,^[16] state that 52% were unemployed while 48% were employed. The majority were married (82.7%), with 13.3% single and 4% widowed. In terms of education, most had schooling up to the school level (61.3%), while others had attended institutes (12.7%), university (12%), or had higher education (14%), indicating a diverse educational background among the study population.

Among 100 patients with mastalgia, 76% had cyclical pain and 24% had non-cyclical pain. The left breast was most commonly affected (48%), followed by the right (32%) and bilateral involvement (20%). Gradual onset was noted in 66%, and the most common pain nature was heaviness (42%). Precipitating and relieving factors were reported in 23% and 19% respectively. Most patients were parous (78%) and 12 patients were lactating. Pain was predominantly premenstrual (50%) or menstrual (32%), with 62% having irregular menstrual cycles. Gynaecological disorders were present in 12% of cases. Ali AA et al,^[16] state that 63.8% had bilateral pain and 67.1% had gradual onset. Progressive pain was noted in 57.3%, with moderate severity most common (62.7%). Pain was mainly described as heaviness (40%) or pin-prick (31.3%). Relieving factors were present in 64%, while 25.3% had precipitating factors. Most were parous (73.3%), had regular menstruation (66%), and no gynaecological disorders (84.7%). Cyclical pain was more frequent (60.4%) and 79.3% had a history of lactation. Nirhale DS et al,^[14] state that that cyclical mastalgia is more common in women aged ≤ 40 years, especially in the 31–40 age group. Non-specific mastalgia occurs exclusively in women > 40 years, while non-cyclical mastalgia is seen across all age groups. Doğan Y et al,^[2] state that non-cyclic pain (51.5%) was more common than cyclic pain (42.5%) and this difference was statistically significant, with pain most frequently localized to the right breast (53.5%), followed by bilateral (23.8%) and left breast (17.8%) pain ($p < 0.001$). 57.5% had regular cycles and nipple discharge was present in 13.75% of the participants. Shah M et al,^[15] found that 72% of mastalgia cases were cyclical and 28% non-cyclical. Left-sided pain was most frequent (48 cases), followed by bilateral pain (20), with 12 patients experiencing referred pain to the arms and neck. The most common pain type was pricking (60%), followed by burning and sharp/stabbing pain (10% each), heavy throbbing ache (5%), and severe splitting/gnawing pain (15%). Pain typically occurred two weeks before menstruation in 53 patients, during menstruation in 32, and was continuous in 15 cases.

In our study, Among the 100 patients assessed, 58% had generalised breast tenderness, while 42% had localised tenderness. Lumpiness was present in 40% of patients, with left-sided being most common

(19%), followed by right-sided (16%) and bilateral (5%). The majority (60%) had no palpable mass. Lesions were diffuse in 58% of cases, with others located across various quadrants. Only 2% showed visible shape changes. Lymph node enlargement was observed in 10% of patients, and none had breast ulcers. Ali AA et al,^[16] state from their study that 28% had a palpable breast mass, while 72% did not. Shape changes were rare, observed in only 2%, and no patients had breast ulcers. Lymph node enlargement was noted in 3.3% of cases. Pain distribution was mostly diffuse in both breasts—71% on the right and 72.7% on the left. Quadrant-specific pain was less common, with the upper outer quadrant most frequently affected on both sides. Out of 100 patients, 10% presented with breast discharge, while 90% did not. Among those with discharge, 3% (3 patients) had unilateral (U/L) discharge, and 7% (7 patients) had bilateral (B/L) discharge. In terms of appearance, 10 patients had serous discharge. Ali AA et al,^[16] state from their study that 9.3% had nipple discharge, more commonly from the right side (9.3%) than the left (6%). The most common types of discharge were whitish (45.4%), suggestive of prolactinoma, and greenish (45.4%), associated with fibrocystic changes. Bloody discharge, indicative of possible malignancy, was observed in 9.2% of the cases with discharge. Doğan Y et al,^[2] state nipple discharge was present in 13.75% of the participants.

CONCLUSION

Our study highlights that mastalgia is a prevalent complaint among women, particularly in the 31–40 age group, consistent with findings from previous studies. The majority of patients presented with cyclical pain, commonly affecting the left breast, with a gradual onset and moderate severity. Hormonal factors, reproductive history, and socio-demographic variables such as marital status and education were closely associated with the presentation of mastalgia. Most cases were linked to benign conditions and showed no signs of malignancy, with diffuse tenderness and small, non-palpable masses being common. Nipple discharge was present in a minority of patients and was predominantly non-bloody and non-foul-smelling, though a small number of cases with bloody discharge raised concerns for malignancy.

REFERENCES

1. Kataria K, Dhar A, Srivastava A, Kumar S, Goyal A. A systematic review of current understanding and management of mastalgia. *Indian J Surg*. 2014;76(3):217–22. doi:10.1007/s12262-013-0813-8.
2. Doğan Y, Dede AM, Çapar M, Coşkun SS, Dede EC. Assessing and managing benign breast lesions leading to mastalgia: A review of 840 patients. *Turk J Surg*. 2025 Jun;41(2):160–7. doi:10.47717/turkjsurg.2025.6451.
3. Tahir MT, Vadakekut ES, Shamsudeen S. Mastalgia. [Updated 2025 Feb 6]. In: StatPearls [Internet]. Treasure

- Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK562195/>
4. Raghu TG. Clinical presentation and management of mastalgia: a cohort study. *J Clin Diagn Res.* 2020 Nov;14(11):PC10–13. doi:10.7860/JCDR/2020/46227.14319.
 5. Smith R, Pruthi S, Fitzpatrick L. Evaluation and management of breast pain. *Mayo Clin Proc.* 2004;79(3):353–72. doi:10.4065/79.3.353.
 6. Olawaiye A, Withiam-Leitch M, Danakas G, Kahn K. Mastalgia: a review of management. *J Reprod Med.* 2006;50(12):933–9.
 7. Rungruang B, Kelley JL. Benign breast diseases: epidemiology, evaluation, and management. *Clin Obstet Gynecol.* 2011 Mar;54(1):110–24.
 8. Stachs A, Stubert J, Reimer T, Hartmann S. Benign breast disease in women. *Dtsch Arztebl Int.* 2019 Aug 9;116(33-34):565–74.
 9. Practice Bulletin No. 164: Diagnosis and management of benign breast disorders. *Obstet Gynecol.* 2016 Jun;127(6):e141–56.
 10. Jaafamejad F, Adibmoghaddam E, Emami SA, Saki A. Compare the effect of flaxseed, evening primrose oil and Vitamin E on duration of periodic breast pain. *J Educ Health Promot.* 2017;6:85.
 11. Hubbard TJ, Sharma A, Ferguson DJ. Breast pain: assessment, management, and referral criteria. *Br J Gen Pract.* 2020 Aug;70(697):419–20.
 12. Hafiz SP, Barnes NLP, Kirwan CC. Clinical management of idiopathic mastalgia: a systematic review. *J Prim Health Care.* 2018 Dec;10(4):312–23.
 13. Minton JP, Foecking MK, Webster DJ, Matthews RH. Response of fibrocystic disease to caffeine withdrawal and correlation of cyclic nucleotides with breast disease. *Am J Obstet Gynecol.* 1979 Sep 1;135(1):157–8.
 14. Nirhale DS, Dhende M, Shingade P, Chavan S, Sonawane T, Kulkarni G. A study on clinical profile and management of mastalgia. *Int Surg J.* 2018;5:1889–93.
 15. Shah M, Thakur N, Parray FQ, Wani KA, Hussain R, Andrabi FA, Zaieem M, Ahanger MA. Living with mastalgia. *J Med Sci Clin Res.* 2017 Apr;5(4):20420–5. doi:10.18535/jmscr/v5i4.111.
 16. Ali AA, Faraj FH. Clinicopathological profile of mastalgia in females: incidence, types, and pathological correlations. A cross-sectional study. *Ann Med Surg (Lond).* 2023;85(10):4764–72. doi:10.1097/MS9.0000000000001159.