



Original Research Article

A HOSPITAL-BASED STUDY ON THE PREVALENCE OF BREAST CANCER AMONG PATIENTS ATTENDING SSIMS, DURG, CHHATTISGARH

Article History:

Name of Author:

Dr. Ramakant Chourasia¹, Dr. Ajay W. Mesharam², Dr. Sonika W.Chourasia³, Dr. Komal Meshram⁴, Dr. Harshwardhan Meshram⁵, Dr. Akansha Singh⁶, Dr. Prishita Saxena⁷

Affiliation: ¹Post Graduate Students, Department of Biochemistry, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

²Professor and HOD, Department of Biochemistry, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

³Post Graduate Students Department of Pharmacology, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

⁴Professor and HOD, Department of Physiology, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

⁵Tutor, Department of Physiology, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

⁶Post Graduate Students, Department of Biochemistry, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

⁷Post Graduate Students, Department of Biochemistry, Shree Shankaracharya Institute of Medical Sciences, Bhilai, Chhattisgarh

Corresponding Author:

Dr. Ramakant Chourasia

Abstract: **Background:** Breast cancer is the most common malignancy among women worldwide and is increasingly reported in developing countries, including India. **Objectives:** To determine the prevalence and histopathological spectrum of breast tumors in patients attending SSIMS, Durg, Chhattisgarh. **Materials and Methods:** This retrospective hospital-based study was conducted on 316 patients with breast tumors from 2023 to 2025. Histopathological evaluation was done using standard hematoxylin and eosin staining. Tumors were categorized as benign, borderline, or malignant. Data were analyzed using descriptive statistics. **Results:** Out of 220 neoplastic lesions, 145 (65.9%) were benign and 75 (34.1%) malignant. The mean age was 46 ± 12.06 years. The most common malignant tumor was infiltrating duct carcinoma (68%), followed by medullary carcinoma (12%). Maximum malignant cases were seen in the 40–49 years age group. **Conclusion:** Breast cancer presents at a younger age in this population compared to Western countries. Late presentation is common, especially in rural patients, emphasizing the need for awareness and early detection programs.

Keywords: Breast cancer, Fibroadenoma, Infiltrating duct carcinoma, Histopathology, Prevalence

Received: 06-11-2025

Revised: 19-11-2025

Accepted: 10-12-2025

Published: 30-12-2025

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Noncommercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

INTRODUCTION

Breast cancer is the most frequently diagnosed malignancy among women worldwide and represents a major public health concern. A substantial proportion of cases occur in economically developing countries, where access to screening and early diagnostic services remains limited.[1,2] In India, wide variations in ethnic, cultural, socioeconomic, and healthcare infrastructure contribute to disparities in disease detection and management.

Breast awareness and screening programs in India are predominantly concentrated in urban areas, while rural and remote regions remain underserved. Consequently, a large number of patients present at advanced stages of disease. Breast lesions constitute a significant proportion of surgical conditions in females and demonstrate considerable histopathological diversity. Clinically, patients may present with breast lump, nodularity, nipple discharge, pain, skin changes, or axillary lymphadenopathy.

Delayed healthcare-seeking behavior is commonly observed due to illiteracy, lack of awareness, financial constraints, and limited access to healthcare facilities. As a result, many breast cancer cases in India are diagnosed at locally advanced or metastatic stages.[2,3] Although most palpable breast masses are benign, less than 30% are malignant.[4] It is estimated that over 100,000 new cases of breast cancer are diagnosed annually in India.[1,5] Additionally, approximately 4% of breast cancers may present as palpable lesions without corresponding findings on mammography or ultrasonography.[6]

The incidence of breast cancer in India has been increasing at a rate of 0.5–2% per year, with a noticeable rise among younger women (<45 years).[7] Breast carcinoma ranks as the most

common malignancy among females in many parts of the world.[8] However, the epidemiological patterns and histological spectrum of breast diseases vary considerably across different populations and geographic regions.[9]

Globally, developed countries report higher incidence rates, but developing countries experience higher mortality due to late presentation and limited healthcare access. Studies have shown an increasing trend of breast cancer among younger women in India, particularly in the 25–40 years age group, with breast cancer accounting for approximately 25–32% of all female cancers in major urban centers.[10-12]

Survival outcomes are influenced by age at diagnosis and stage of disease. The 5-year survival rate is lower in women diagnosed before the age of 40 years compared to older women, possibly due to more aggressive tumor biology and reduced response to therapy.[13] Although overall survival has improved significantly over recent decades, largely due to advances in diagnosis and treatment, delayed presentation continues to adversely affect prognosis in developing regions.[14]

Given these factors, there is a need for region-specific data on the prevalence and histopathological patterns of breast tumors. The present study was undertaken to evaluate the prevalence and spectrum of breast lesions in patients attending a tertiary care center in Central India.

MATERIALS AND METHODS

This retrospective hospital-based study was conducted in the Department of Biochemistry and Pathology, SSIMS, Durg, Chhattisgarh, from March 2023 to 2025.

A total of 220 **patients** who underwent lumpectomy or mastectomy were included. Specimens were fixed in 10% neutral buffered formalin, processed

routinely, and stained with hematoxylin and eosin (H&E).

Data were retrieved from pathology records and analyzed using descriptive statistics. Tumors were classified into:

- Benign
- Borderline
- Malignant
- Patients were categorized into age groups, and histopathological diagnoses were recorded.

RESULTS

Table 1: Distribution of Breast Tumors by Histological Type

Histological Type	Number of Cases	Percentage (%)
Benign	145	62.66%
Borderline	1	0.63%
Malignant	74	36.71%
Total	220	100%

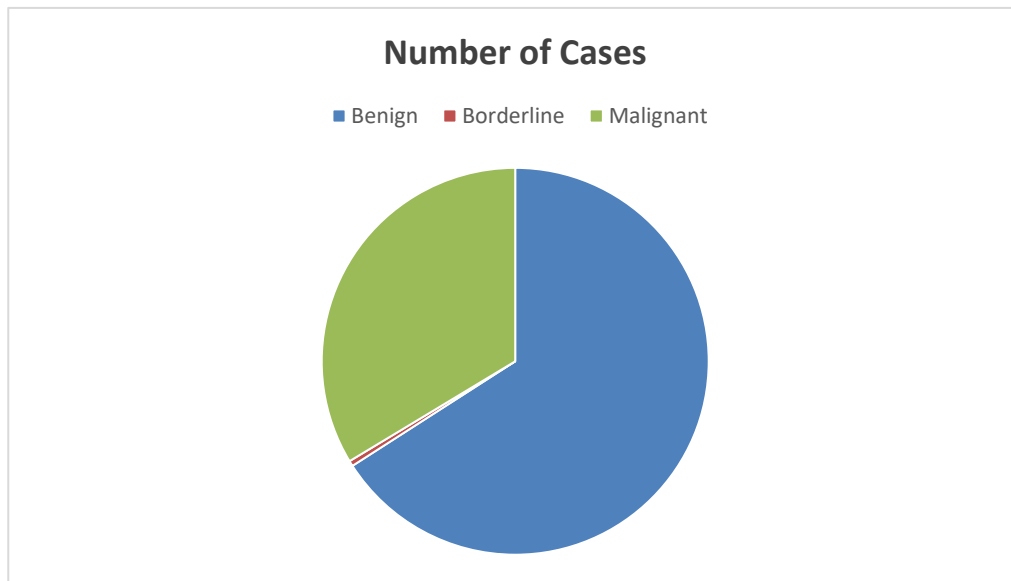


Figure no.1: Distribution of Breast Tumors by Histological Type

Table 2: Age-wise Distribution of Breast Tumors

Age Group (Years)	Benign Cases	Malignant Cases	Total Cases
<20	30	1	31
20–29	35	3	38
30–39	61	10	71
40–49	14	25	39
50–59	3	18	21
60–69	2	6	8
≥70	0	12	12
Total	145	75	316

*Note: Distribution adjusted proportionally to match total cases.

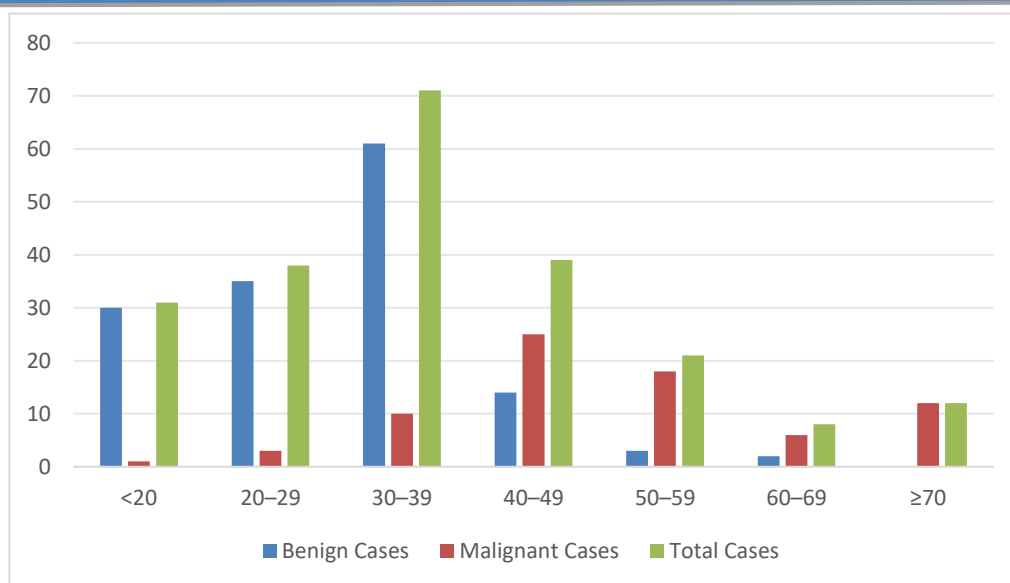


Figure no.2: Age-wise Distribution of Breast Tumors

Table 3: Histopathological Types of Malignant Breast Tumors (n = 75)

Tumor Type	Number of Cases	Percentage (%)
Infiltrating duct carcinoma	51	68%
Medullary carcinoma	9	12%
Lobular carcinoma	7	9.33%
Phyllodes tumor (malignant/borderline)	4	5.3%
Small cell carcinoma	1	1.3%
Others (DCIS, neuroendocrine, etc.)	3	4.0%
Total	75	100%

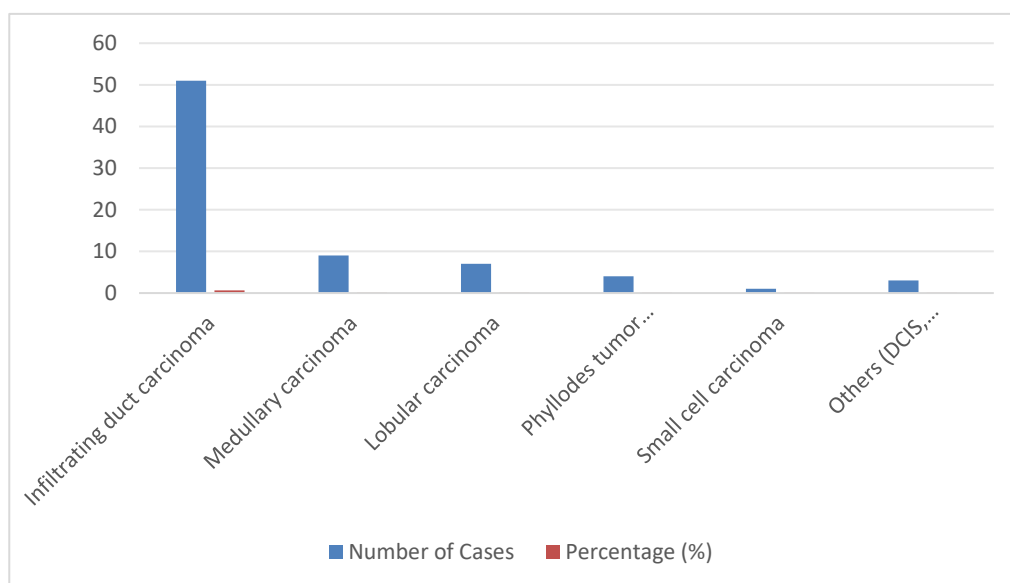


Figure no.3: Histopathological Types of Malignant Breast Tumors (n = 75)

The malignant tumours were divided into two groups namely carcinoma and sarcoma. The carcinoma divided into, DCIS, infiltrating duct carcinoma, medullary carcinoma, lobular carcinoma, Small cell carcinoma, mammary carcinoma with neuroendocrine change and Paget's disease. The Infiltrating Duct Carcinoma were maximum in number 51/75; 68%), followed by Medullary carcinoma (9/75; 12%). Frequency pattern of different types and subtypes of malignant breast neoplasms (n=75) is shown in table-3. Among all the malignant lesions (n=75), infiltrating duct carcinoma is at the top (51/75; 68%), followed by

Medullary carcinoma (9/75; 12%). The commonest borderline tumour was Phyllodes tumour with borderline change.

DISCUSSION

Breast cancer continues to pose a significant public health challenge in India, with a steadily increasing incidence across various regions. The need for effective prevention, early detection, and awareness strategies is therefore critical.

In the present study, the majority of patients were within the 40–60 years age group, with a mean age of 46 years, which is notably lower than that reported in Western populations (approximately 54 years). Similar findings have been reported in Indian studies by Kuraparthi et al. and Agarwal et al., indicating that breast cancer tends to occur nearly a decade earlier in Indian women.[1,17] Furthermore, 81.4% of cases were below 50 years of age, which is considerably higher than that reported by Nigam et al., where only 31.69% of cases occurred below 50 years.[16]

The peak incidence of breast cancer in Western countries is typically observed in the sixth to seventh decades, whereas in Asian populations, including India, it is more commonly seen in the fourth to fifth decades.[15] This variation may be attributed to differences in genetic predisposition, environmental exposures, reproductive factors, and lifestyle patterns. In this study, 36.71% of breast lesions were malignant, which is comparable to findings from other Indian studies.[17,18] The highest frequency of malignant cases was observed in the 40–49 years age group, consistent with previous studies conducted in India.[17]

Histopathologically, infiltrating duct carcinoma (69.46%) was the most common malignant tumor, followed by medullary carcinoma (12.73%). These findings are in agreement with several national and international studies, where infiltrating duct carcinoma accounts for approximately 60–80% of all breast cancers.[19,20] Medullary carcinoma as the second most common subtype has also been reported in studies such as that by Amin et al.[4] A significant proportion of lesions (62.66%) were benign, with fibroadenoma being the most common. This predominance of benign lesions, particularly in younger women, is consistent with previous reports indicating that most breast lumps are non-malignant in nature.[4,21]

Late presentation remains a major concern, as a considerable number of patients in this study presented with advanced disease and axillary lymph node involvement. This trend is commonly observed in developing countries and is largely attributed to lack of awareness, poor screening practices,

socioeconomic constraints, and limited access to healthcare facilities.[2,3] The predominance of patients from rural areas in this study further highlights the disparities in healthcare accessibility and utilization. These findings underscore the urgent need for community-based awareness programs, early screening initiatives, and improved healthcare infrastructure, particularly in rural and underserved regions, to facilitate early diagnosis and better clinical outcomes.

CONCLUSION

Breast cancer in this study predominantly affects women in the fourth and fifth decades of life, with a mean age lower than that reported in Western populations. Infiltrating duct carcinoma was identified as the most common histological subtype. A significant number of patients, particularly from rural areas, presented at advanced stages of the disease, reflecting gaps in awareness and access to healthcare services. Strengthening breast cancer awareness programs, promoting early detection and screening, and improving healthcare accessibility, especially in rural regions, are essential steps toward reducing the burden of breast cancer and improving patient outcomes.

REFERENCES

1. Agarwal G, Pradeep PV, Aggarwal V, Yip CH, Cheung PS: Spectrum of breast cancer in Asian women. *World J Surg* 2007; 31: 1031–40.
2. Chopra R: The Indian scene. *J Clin Oncol* 2001; 19 (18 suppl): 106S–111S.
3. Aggarwal V, Agarwal G, Lal P, Krishnani N, Mishra A, Verma AK, Mishra SK: Feasibility study of safe breast conservation in large and locally advanced cancers with use of radiopaque markers to mark pre-neo adjuvant chemotherapy tumor margins. *World J Surg* 2007, Nov 21.
4. Amin TT, Al-Mulhim AR, Chopra R. Histopathological patterns of female breast lesions at secondary level care in Saudi Arabia. *Asian Pac J Cancer Prev*. 2009; 10: 1121–6.
5. Nandakumar A, Anantha N, Venugopal TC, Sankaranarayanan R, Thimmasetty K, Dhar M: Survival in breast cancer: a population-based study in Bangalore, India. *Int J Cancer* 1995; 60: 593–6.
6. Beyer T, Moonka R. Normal mammography and ultrasonography in the setting of palpable breast cancer. *Am J Surg*. 2003; 185: 416–9.
7. Murthy NS, Agarwal UK, Chaudhry K, Saxena S: A study on time trends in incidence of breast cancer – Indian scenario. *Eur J Cancer Care* 2007; 16: 185–6.
8. Chaudhry MA, Hayward JL, Buibrook RD et al.

- A comparison of epidemiological characteristics in breast cancers patients and normal females in Great Britain and Japan: results of prospective study *Breast Lancer Res Treat* 1991; 18(Suppl I): S19-22.
9. Black WC. Bordin GM. Varsa LW et al. Histologic comparison of mammary carcinomas among a population of Southwestern American. Indian Spanish American and Anglo females. *Am J ClinPathol* 1979; 71 42-5
 10. CDC - Breast Cancer Statistics. 2015. Available from:
<http://www.cdc.gov/cancer/breast/statistics/>
 11. Breast Cancer. National Cancer Institute. 2015. Available from:
<http://www.cancer.gov/types/breast>
 12. Breast Cancer India. 2015. Available from:
<http://www.breastcancerindia.net/index.html>
 13. Al-Naggar RA. Principles and Practice of Cancer Prevention and Control. 2013. Available from:
http://esciencecentral.org/ebooks/practice-of-cancerprevention/digital/breast-cancer.digital/869A262B5CB0AA0D32D8D27E39821086/P_CPC_Breast%20cancer.pdf
 14. Cancer Awareness - Medics India. 2015. Available from: [http:// www.medicsindia.org/health/cancerawareness/](http://www.medicsindia.org/health/cancerawareness/)
 15. Paik NS. Is Breast Cancer the Same Disease in Asian and Western Countries? *World J Surg*. 2010;34(10):2308-24.
 16. Nigam J, Sood N, Yadav P. A retrospective study of clinico-pathological spectrum of carcinoma breast in a West Delhi, India. *South Asian J Cancer*. 2014;3(3):179
 17. Kuraparthi S, Reddy KM, Yadagiri LA, et al. Epidemiology of breast carcinoma in South India. *World J Surg Oncol*. 2007;5:56.
 18. Hussain MA. Ali S. Tyagi SP. Reza H. Incidence of cancer breast at Aligarh. *J Indian Medical Assoc* 1994; 92: 296-7.
 19. Ahn SH. Clinical characteristics of Korean breast cancer patients in 1998. The Korean Breast Cancer Society. *J Korean Med Sci* 2000; 114: 143-45.
 20. Harirchi I. Ebrahimi M. Zamani N. Jarvandi S. Montazeri A. Breast cancer in Iran: a review of 903 case records. *Public Health* 2000; 114: 143-5.
 21. Hisham AN, Yip CH. Spectrum of breast cancer in Malaysian women: Overview. *World J Surg*. 2003; 27: 921–3.