

A Study of the Clinicopathological Characteristics of Breast Cancer Patients Undergoing Radiotherapy

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Abstract:

Background: Breast cancer is the most commonly diagnosed malignancy among women worldwide and remains a leading cause of cancer-related mortality. Clinicopathological characteristics play a crucial role in determining prognosis, treatment planning, and therapeutic outcomes, particularly among patients undergoing radiotherapy.

Aim: To evaluate the clinicopathological characteristics of breast cancer patients undergoing radiotherapy at a tertiary care center in Bihar, India.

Methodology: A hospital-based descriptive observational study was conducted at Darbhanga Medical College and Hospital (DMCH), Laheriasarai, Darbhanga, and Swami Vivekanand Cancer Asptal, Mabbi. A total of 83 histopathologically confirmed breast cancer patients receiving radiotherapy were enrolled consecutively over an eight-month period. Demographic, clinical, histopathological, staging, receptor status, and treatment-related data were collected from patient interviews and medical records. Data were analyzed using SPSS version 25.0 and presented using descriptive statistics.

Results: The mean age of patients was 51.8±10.6 years, with most patients belonging to the 41–60 years age group. The majority were multiparous and postmenopausal. Breast lump was the predominant presenting symptom and left-sided breast involvement was slightly more common. Invasive ductal carcinoma was the most frequent histological subtype, with Grade II tumors predominating. Most patients presented with Stage III disease and a substantial proportion had locally advanced breast cancer. Hormone receptor positivity was observed in nearly two-thirds of patients, while approximately one-quarter had triple-negative breast cancer. Most patients underwent modified radical mastectomy, chemotherapy, and adjuvant radiotherapy.

Conclusion: Breast cancer patients undergoing radiotherapy predominantly presented with locally advanced, hormone receptor-positive disease. The high burden of advanced-stage presentation highlights the need for improved awareness, early detection strategies, and multidisciplinary management to optimize treatment outcomes.

Keywords: Breast Cancer, Radiotherapy, Clinicopathological Characteristics, Hormone Receptor Status, Invasive Ductal Carcinoma, Locally Advanced Breast Cancer, Bihar, India.

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Introduction

Breast cancer is the most common type of cancer in women globally and a major cause of cancer death. It is a significant public health problem as it is becoming more common, has a high disease burden and has a significant impact on quality of life. Breast cancer is the most common cancer in women and has become the most common cancer worldwide after lung cancer [1]. Meanwhile, incidences of breast cancer have been steadily rising in recent decades in both developed and developing countries, including Asian countries [2]. Although the early detection, diagnosis and treatment of breast cancer have

improved, it still remains a major cause of cancer-related mortality in women worldwide [3].

The Global Cancer Observatory (GLOBOCAN) 2020 estimates that over 2.2 million new breast cancer cases were identified globally, which equates to 11.7% of diagnosed cancer cases worldwide and is the most common form of diagnosed cancer in the world. Breast cancer was also responsible for approximately 685,000 deaths globally, highlighting its significant contribution to cancer mortality. Worldwide, it was reported that breast cancer incidence was 47.8 per 100,000 women, and that breast

cancer death rate was 13.6 per 100,000 women. In particular, almost 45% of all new breast cancer cases were reported in Asia, and this is increasing in that area [4].

Breast cancer has seen a significant upsurge in the last few decades in India and is the most prevalent cancer in several urban areas and the 2nd most prevalent in rural areas for women. There has been a rising burden of breast cancer in India, and it has been attributed to the lifestyle changes, urbanization, delayed age of childbirth, decreased breastfeeding, obesity and extended life expectancy. In addition, demographic changes and greater awareness have resulted in better detection or diagnosis rates. Despite these advances, however, a large percentage of women in India still present with late-stage disease because of the lack of awareness and socioeconomic factors, poor screening programs, and limited access to specialized healthcare services. This leads to inferior clinical results in contrast to numerous developed countries [5].

The burden of breast cancer is of special importance in the eastern Indian states like Bihar, where healthcare infrastructure, cancer screening facilities and public awareness about breast health is relatively poor than in the metropolitan area. Bihar patients present to tertiary care centres with locally advanced disease and require multimodal therapy involving surgery, chemotherapy, hormonal therapy, targeted therapy and radiotherapy. Breast cancer patients in this area may have a different proportion with varied clinicopathological presentation compared to other areas of the country because of the differences in socioeconomic status, environmental factors, accessibility to health care services and population characteristics. Hence, a regional study is necessary in order to know the pattern of diseases and to develop proper management plans.

Breast cancer is a very heterogeneous disease and there is significant variability in the clinical presentation, pathological characteristics, molecular profile, treatment response and prognosis [6]. There are several clinicopathological factors that are important in predicting disease outcomes and therapeutic choices. This includes the age at diagnosis, menopausal status, tumour size, histological subtype, tumour grade, lymph node involvement, lymphovascular invasion, hormone receptor status, and the human epidermal growth factor receptor-2 (HER2) expression [7]. These features are of great importance not only for prognosis but also for determining the most suitable treatment options, such as radiotherapy.

Radiotherapy is an essential part of breast cancer treatment and has been shown to enhance the local control of breast cancer, disease-free survival and overall survival after breast-conserving surgery or mastectomy in high-risk cases with pathological

features [8]. Adjuvant radiotherapy is regularly used after breast-conserving surgery and often is recommended after mastectomy in patients with large primary tumors, positive lymph nodes or other poor prognostic factors. Several clinicopathological factors of the patient and tumor affect the effectiveness of radiotherapy. Therefore, it is crucial to be aware of these features in patients undergoing radiotherapy to plan best treatment, predict outcomes, and understand factors that lead to disease progression or recurrence.

Many studies have shown that there are significant geographical and ethnic differences in clinical and pathological profiles of breast cancer patients [9]. A number of differences have been noted between populations worldwide in terms of age distribution, tumour biology, receptor status, stage at diagnosis, and treatment patterns. These differences highlight the need to collect local data to gain an understanding of the disease behaviour of particular populations. The clinicopathological data of breast cancer patients undergoing radiotherapy is limited in India especially in the resource constrained areas like Bihar. The evidence available is frequently based on a single centre study with diverse methodologies and hence results may not be generalisable to the population.

Clinicopathological details obtained from breast cancer patients treated with radiotherapy could be useful to understand the presentation, treatment needs and prognosis of breast cancer. This type of data is required to inform cancer care planning and resource allocation decisions by clinicians, policy makers and healthcare administrators. Moreover, knowledge of the disease patterns in various regions can help inform the creation of targeted awareness campaigns and early detection systems, as well as evidence-based treatment plans, which can enhance patient care and outcomes.

Hence, the present study was conducted at a tertiary care centre at Bihar, India to assess the clinicopathological features of breast cancer patients undergoing radiotherapy. This study aims to add to the existing knowledge base and generate region-specific data that can help in better management and outcomes of breast cancer patients in Bihar and other healthcare settings.

Materials and Methods

Study Design: This hospital-based descriptive observational study was conducted to evaluate the clinicopathological characteristics of breast cancer patients undergoing radiotherapy. The study aimed to assess demographic profiles, clinical presentations, histopathological features, tumor characteristics, and receptor status patterns among breast cancer patients receiving treatment at a tertiary care center.

Study Area: The study was carried out at Darbhanga Medical College and Hospital (DMCH), Laheriasarai, Darbhanga, Bihar, India, and Swami Vivekanand Cancer Aspatal, Mabbi.

Study Duration: The study was conducted over a period of eight months from April 2025 to November 2025.

Sample Size: A total of 83 breast cancer patients undergoing radiotherapy were included in the study. All eligible patients who fulfilled the inclusion criteria during the study period were enrolled consecutively.

Study Population: The study population comprised histopathologically confirmed breast cancer patients who were registered at the Department of Radiation Oncology, Darbhanga Medical College and Hospital (DMCH), and received radiotherapy at Swami Vivekanand Cancer Aspatal, Mabbi, Darbhanga, Bihar. Both newly diagnosed and previously treated patients referred for adjuvant or definitive radiotherapy were considered for inclusion.

Data Collection: Data were collected using a pre-designed structured data collection form through direct patient interviews, review of medical records, pathology reports, imaging findings, and treatment documents. Information regarding socio-demographic characteristics, age at diagnosis, presenting symptoms, tumor laterality, clinical stage, histopathological subtype, tumor size, lymph node involvement, hormonal receptor status, HER2 status, and treatment-related variables was recorded.

Histopathological findings were obtained from biopsy or surgical specimens. Tumor staging was determined according to standard TNM classification guidelines available in-patient records.

Inclusion Criteria

1. Histopathologically confirmed cases of breast cancer.
2. Patients registered at the Department of Radiation Oncology, DMCH, Darbhanga, and undergoing radiotherapy at Swami Vivekanand Cancer Aspatal, Mabbi, Darbhanga.
3. Patients aged 18 years and above.
4. Patients willing to participate and provide informed consent.
5. Patients with complete clinicopathological and treatment-related records.

Exclusion Criteria

1. Patients with incomplete clinical or pathological records.
2. Patients who did not receive radiotherapy during the study period.
3. Patients unwilling to participate in the study.
4. Patients with recurrent malignancies lacking adequate baseline clinicopathological information.

Procedure: After obtaining informed consent, eligible patients were enrolled consecutively during the study period. Demographic and clinical information was recorded at the time of presentation. Histopathological diagnosis was confirmed from pathology reports. Tumor characteristics including histological subtype, tumor size, lymph node status, and disease stage were documented.

Immunohistochemical (IHC) evaluation of estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) status was performed on formalin-fixed paraffin-embedded tissue sections using standard laboratory protocols. Nuclear staining in more than 1% of tumor cells was considered positive for ER and PR expression. HER2 positivity was defined as an IHC score of 3+. Cases with equivocal HER2 expression (IHC score 2+) were further evaluated using fluorescence in situ hybridization (FISH) whenever available to confirm HER2 gene amplification. All clinicopathological parameters were compiled and analyzed to determine the distribution of disease characteristics among breast cancer patients undergoing radiotherapy.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) software version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation (SD) or median with range, as appropriate. Categorical variables were summarized using frequencies and percentages. Associations between clinicopathological variables were assessed using Chi-square test or Fisher's exact test wherever applicable. A p-value of less than 0.05 was considered statistically significant."

Result

Table 1 presents the baseline demographic characteristics of the 83 breast cancer patients included in the study. The mean age of the patients was 51.8 ± 10.6 years, with the largest proportion belonging to the 41–50 years age group (33.7%, n=28), followed by 51–60 years (27.7%, n=23) and 31–40 years (16.9%, n=14). Patients aged 61–70 years accounted for 15.7% (n=13), while only 2.4% (n=2) and 3.6% (n=3) were aged 21–30 years and over 70 years, respectively. The median age at menarche was 13.1 years (range: 10–16 years), and the mean age at first childbirth was 22.4 years (range: 17–34 years). With regard to parity, the vast majority of patients were multiparous (86.8%, n=72), whereas 8.4% (n=7) were uniparous and 4.8% (n=4) were nulliparous. Additionally, 59.0% (n=49) of the patients were postmenopausal at the time of diagnosis. These findings indicate that breast cancer predominantly affected middle-aged women, most of whom were multiparous and postmenopausal.

Table 1: Baseline Demographic Characteristics of the Patients (N=83)

Variables	N (%)
Age (mean±SD) in years	51.8±10.6
Age groups (years)	
21-30	2 (2.4)
31-40	14 (16.9)
41-50	28 (33.7)
51-60	23 (27.7)
61-70	13 (15.7)
>70	3 (3.6)
Median age at menarche, years (range)	13.1 (10–16)
Mean age at first childbirth, years (range)	22.4 (17–34)
Parity	
Nulliparous	4 (4.8)
Uniparous	7 (8.4)
Multiparous	72 (86.8)
Postmenopausal status	49 (59.0)

Table 2 presents the clinical presentation of the 83 breast cancer patients included in the study. The left breast was more commonly affected, accounting for 56.6% (n=47) of cases, while 43.4% (n=36) involved the right breast. Regarding presenting symptoms, a breast lump was by far the most common clinical manifestation, reported by 91.6% (n=76) of patients. Other symptoms included breast pain in 25.3% (n=21), nipple retraction in 21.7% (n=18),

and skin ulceration in 13.3% (n=11) of cases. Redness of the breast was observed in 10.8% (n=9) of patients, while nipple discharge or bleeding was the least common presentation, occurring in 4.8% (n=4) of cases. These findings indicate that a palpable breast lump was the predominant presenting complaint, with a notable proportion of patients also exhibiting signs suggestive of locally advanced disease, such as nipple retraction and skin ulceration.

Table 2: Clinical Presentation of Breast Cancer Patients (N=83)

Variables	N (%)
Laterality	
Left Breast	47 (56.6)
Right Breast	36 (43.4)
Presenting Symptoms*	
Breast lump	76 (91.6)
Breast pain	21 (25.3)
Nipple retraction	18 (21.7)
Skin ulceration	11 (13.3)
Redness of breast	9 (10.8)
Nipple discharge/bleeding	4 (4.8)

Table 3 presents the histopathological characteristics of the 83 breast cancer patients included in the study. Invasive ductal carcinoma was the predominant histological type, accounting for 94.0% (n=78) of cases, while invasive lobular carcinoma was observed in 4.8% (n=4) of patients. Other histological variants were uncommon, comprising only 1.2% (n=1) of cases. Regarding tumor grade, Grade II

tumors were the most frequently encountered, representing 59.0% (n=49) of patients, followed by Grade III tumors in 27.7% (n=23) and Grade I tumors in 13.3% (n=11) of cases. These findings indicate that invasive ductal carcinoma was overwhelmingly the most common histological subtype and that the majority of patients had moderately differentiated (Grade II) tumors at diagnosis.

Table 3: Histopathological Characteristics of the Patients (N=83)

Variables	N (%)
Histological Type	
Invasive ductal carcinoma	78 (94.0)
Invasive lobular carcinoma	4 (4.8)
Other histological variants	1 (1.2)
Tumor Grade	

Grade I	11 (13.3)
Grade II	49 (59.0)
Grade III	23 (27.7)

Table 4 presents the tumor characteristics of the 83 breast cancer patients according to the AJCC 8th Edition staging system. Regarding tumor size (T stage), T3 tumors were the most common, accounting for 39.8% (n=33) of cases, followed by T2 tumors in 32.5% (n=27) patients. T4 tumors, indicating locally advanced disease, were observed in 18.1% (n=15) of patients, while T1 tumors constituted only 9.6% (n=8) of cases. For nodal status, N1 disease was the predominant category, present in

49.4% (n=41) of patients, followed by N0 in 30.1% (n=25), N2 in 14.5% (n=12), and N3 in 6.0% (n=5) of cases. With respect to distant metastasis, the majority of patients had M0 disease (92.8%, n=77), whereas 7.2% (n=6) presented with M1 disease. These findings indicate that most patients had relatively large primary tumors with regional lymph node involvement but without distant metastasis, reflecting a predominance of locally advanced breast cancer in the study population.

Table 4: Tumor Characteristics According to AJCC 8th Edition (N=83)

Variables	N (%)
T Stage	
T1	8 (9.6)
T2	27 (32.5)
T3	33 (39.8)
T4	15 (18.1)
N Stage	
N0	25 (30.1)
N1	41 (49.4)
N2	12 (14.5)
N3	5 (6.0)
M Stage	
M0	77 (92.8)
M1	6 (7.2)

Table 5 presents the clinical stage distribution of the 83 breast cancer patients at the time of diagnosis. The majority of patients were diagnosed with Stage III disease, accounting for 53.0% (n=44) of cases, followed by Stage II disease in 34.9% (n=29) patients. Stage IV disease was observed in 7.2% (n=6) of patients, while only 4.8% (n=4) were diagnosed at Stage I. Additionally, locally advanced breast

cancer (LABC) was identified in 43.4% (n=36) of patients, indicating a substantial burden of advanced disease at presentation. These findings suggest that most patients presented with intermediate to advanced-stage breast cancer, with Stage III disease being the predominant clinical stage in the study population.

Table 5: Clinical Stage Distribution of the Patients (N=83)

Clinical Stage	N (%)
Stage I	4 (4.8)
Stage II	29 (34.9)
Stage III	44 (53.0)
Stage IV	6 (7.2)

Locally Advanced Breast Cancer (LABC): 36 (43.4%)

Table 6 presents the hormonal receptor and HER2 status of the 83 breast cancer patients included in the study. The most common molecular profile was ER/PR-positive and HER2-negative, observed in 45.8% (n=38) of patients, followed by ER/PR-negative and HER2-negative (triple-negative breast cancer, TNBC) in 25.3% (n=21). ER/PR-positive and HER2-positive tumors accounted for 16.9% (n=14)

of cases, while ER/PR-negative and HER2-positive tumors were identified in 12.0% (n=10) patients. Overall, 62.7% (n=52) of patients were positive for estrogen and/or progesterone receptors, indicating hormone-responsive disease, whereas 28.9% (n=24) demonstrated HER2 positivity. These findings suggest that hormone receptor-positive breast cancer was the predominant subtype in the study population, while approximately one-quarter of patients had triple-negative disease, a subtype generally associated with a more aggressive clinical course.

Table 6: Hormonal Receptor and HER2 Status of the Patients (N=83)

Hormone Profile	N (%)
ER/PR positive and HER2 negative	38 (45.8)
ER/PR positive and HER2 positive	14 (16.9)
ER/PR negative and HER2 positive	10 (12.0)
ER/PR negative and HER2 negative (TNBC)	21 (25.3)
Overall ER/PR positive	52 (62.7)
Overall HER2 positive	24 (28.9)

Table 7 presents the treatment characteristics of the 83 breast cancer patients who underwent radiotherapy. The majority of patients had undergone modified radical mastectomy prior to radiotherapy, accounting for 73.5% (n=61) of cases, while 20.5% (n=17) underwent breast-conserving surgery. A small proportion of patients (6.0%, n=5) received definitive radiotherapy without prior surgery. Regarding systemic treatment, adjuvant chemotherapy was the most commonly administered modality, received by 55.4% (n=46) of patients, followed by

neoadjuvant chemotherapy in 33.7% (n=28). Only 10.9% (n=9) of patients did not receive chemotherapy. In terms of radiotherapy intent, the vast majority were treated with adjuvant radiotherapy (90.4%, n=75), whereas 9.6% (n=8) received palliative radiotherapy. These findings indicate that most patients underwent multimodality treatment consisting of surgery, chemotherapy, and adjuvant radiotherapy, reflecting the standard management approach for breast cancer.

Table 7: Treatment Characteristics of Breast Cancer Patients Undergoing Radiotherapy (N=83)

Variables	N (%)
Type of Surgery Prior to Radiotherapy	
Modified Radical Mastectomy	61 (73.5)
Breast Conserving Surgery	17 (20.5)
No Surgery (Definitive RT)	5 (6.0)
Chemotherapy Received	
Neoadjuvant	28 (33.7)
Adjuvant	46 (55.4)
No Chemotherapy	9 (10.9)
Radiotherapy Intent	
Adjuvant	75 (90.4)
Palliative	8 (9.6)

Discussion

The present study evaluated the clinicopathological characteristics of 83 breast cancer patients undergoing radiotherapy and demonstrated that breast cancer predominantly affected middle-aged and older women, with a mean age of 51.8 ± 10.6 years. The age group 41–50 years had the highest percentage (33.7%), followed by the age group of 51–60 years (27.7%). These results are similar to those of some studies conducted in India which have found that the average age at which breast cancer is diagnosed is younger than in the West. In Indian women with breast cancer, the mean age was reported at 52.5 years by Poddar et al., 2019 [2] which is close to the present study. A contrasting figure from North America and Europe is between 60 and 65 years old which means that the age at diagnosis of breast cancer is about a decade earlier for women of South Asian origin. This is an early onset and could be due to variation in reproductive patterns, genetic susceptibility, lifestyle and population variables. The mean age of first childbirth in the present study was 22.4 years similar to what has been observed in Indian populations, and significantly lower than reported in

the western cohorts where delayed childbearing is more prevalent.”

In terms of reproductive status, most of the patients in the current study were multiparous (86.8%) and 59.0% of them were postmenopausal at diagnosis. Several Indian investigators have noted an excess of postmenopausal women in breast cancer cases, even though parity is thought to be relatively high among women in India. While multiparity has been recognised as a protection against breast cancer, in the developing countries, rising life expectancy, urbanisation, obesity and change in the hormonal environment after menopause are factors likely to be responsible for the increasing incidence of breast cancer in postmenopausal women. Our findings of median age of menarche of 13.1 years is also similar to earlier Indian studies.

The main clinical presentation observed in this study consisted of the existence of a palpable breast lump (91.6%). Such rates have been reported in other low- and middle-income countries in which breast self-awareness and screening rates are low and India. Nipple retraction (21.7%), breast pain (25.3%) and

skin ulceration (13.3%) were significantly less common presenting symptoms. More than half of breast masses are symptomatic, reflecting the fact that most patients do not seek medical care until they have a clinically detected disease. In addition, the involvement of the left breast (56.6%) was marginally more prevalent than the right (43.4%) which has also been seen in other epidemiological studies, but which is not supported by any biological explanation.

Histopathological examinations showed that the overwhelming majority of cases (94.0%) were of invasive ductal carcinoma (IDC). This result is in line with the previous reports which show that IDC represents around 70-90% of all breast cancers in the world. Similarly, infiltrating ductal carcinoma was found to be the most frequent histological type in Indian patients with breast cancer by Poddar et al., 2019 [2]. The percentage, however, found in the current study was a little higher than the commonly reported range, and invasive lobular carcinoma was only 4.8%. The results confirm the widely accepted knowledge that IDC is still the predominant pathological type among various populations.

The majority of tumors were Grade II (59.0%) with Grade III (27.7%) and Grade I (13.3%). Similar distributions have been seen in several institutional studies from India where intermediate grade tumours are the commonest type of breast cancer diagnosis. The majority of the patients had grade II disease, indicating that the majority of the tumors were moderately differentiated and moderately biologically aggressive. However, the high percentage of Grade III tumors in the present study suggests that a high percentage of biologically aggressive diseases with intensive multimodality therapy were being managed.

The high stage of presentation was one of the most important results from this research. T3 tumors occurred in 39.8% of patients and T4 tumors in 18.1%. In addition, there was a high incidence of nodal involvement, where 49.4% of the patients had N1 disease. There was a greater proportion of patients with stage III disease (53.0%) than stage II (35.3%), and the smallest proportion of patients in stage I disease (4.8%). These results are in line with the earlier Indian study reporting late diagnosis and presentation in an advanced state as compared to developed countries. Locally advanced breast cancer in India is reported to be high due to poor screening programs, limited awareness, poor socioeconomic factors, and delayed healthcare access by the patients [2]. Mammographic screening has led to earlier diagnosis in Western countries, leading to a higher proportion of Stage I and Stage II cancers at diagnosis. The incidence of locally advanced breast cancer (LABC) in this study was 43.4% which is similar to the reported Indian incidence of approximately 40-45%. Likewise, 7.2% of the women had metastatic disease,

similar to earlier studies reporting on the metastatic presentation rates of 5-10% in newly diagnosed breast cancer cases in India.

The molecular characteristics of the tumors in this study were highly variable. Overall, 62.7% of patients had hormone receptor positivity and the most prevalent tumor-receptor subtype was hormone receptor-positive/HER2-negative (45.8%). This result is similar to that observed by Poddar et al., 2019 where 62.9% were receptor positive [2]. But the levels are slightly less than what is seen in Western populations, where estrogen receptor positivity is often above 70%. A total of 25.3% cases in the current study were triple negative breast cancer (TNBC), which is similar to the observations made at Tata Memorial Hospital and other Indian series reporting the prevalence of TNBC ranging from 20% to 30% [10]. Similarly, patients with HER2 positivity were 28.9% which is slightly higher than the 15–25% reported in Indian literature [11,12] in general. The higher incidence of both HER2-positive and triple-negative breast cancers in India indicates more aggressive disease pattern as compared to Western countries. These molecular features are clinically relevant for their implications in therapies; in fact, anti-HER2 therapy might be useful in the treatment of tumors that are HER2-positive, while TNBC is linked to a worse prognosis and fewer therapeutic options involving anti-HER2 therapy.

The treatment patterns seen in this study are representative of current multidisciplinary treatment of breast cancer. The most popular surgical procedure was modified radical mastectomy, and breast-conserving surgery was done in just 20.5% of the patients. This is probably due to the percentage of patients with locally advanced disease. The same trend has been observed in various cancer hospitals in India where the high stage of disease does not make breast conservation possible. Moreover, chemotherapy was also an important part of treatment, 33.7% received neoadjuvant chemotherapy and 55.4% received adjuvant chemotherapy. Radiotherapy was used mainly for curative purpose – 90.4% of patients received adjuvant radiotherapy after surgery. These results support the need for a multimodality approach to breast cancer treatment with surgery, systemic therapy and radiotherapy to ensure best disease management and the best long-term results for breast cancer patients.

Conclusion

This study highlights the clinicopathological profile of breast cancer patients undergoing radiotherapy in a tertiary care setting. Breast cancer mainly occurred in middle-aged and postmenopausal women and usually presented as a palpable breast lump. Most of the tumors had intermediate histological grade, and invasive ductal carcinoma was the most common histological type; most of the tumors were diagnosed

at locally advanced stage. A significant portion of patients were found to be hormone receptor positive, and there was a significant number of patients with HER2 disease and triple-negative breast cancer. The majority of patients received multimodality therapy including surgery, chemotherapy and/or adjuvant radiotherapy. The results highlight the ongoing high proportion of people with advanced disease at diagnosis and the need for early detection, timely diagnosis, and multidisciplinary treatment which involves several specialties for patients receiving radiotherapy treatment for breast cancer.

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