

Breast Cancer: A Retrospective analysis of Age Distribution, Comorbidities, Treatment Regimen, and Laterality

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ABSTRACT

Background: Breast cancer is a serious global health issue since it greatly increases the morbidity and mortality linked to the disease.

Objective: The purpose of this retrospective study was to look at the age distribution, comorbidities, Treatment regimen, and laterality of patients with breast cancer.

Methods: The Medical data of 43 breast cancer patients treated at a private hospital between 2022 to 2024 were reviewed.

Results: According to our data, a higher proportion of patients were between the ages of 51 to 60. The most prevalent comorbidities were hypertension and diabetes mellitus. The most often used chemotherapeutic medication was doxorubicin, and the most widely utilized treatment method was surgical adjuvant chemotherapy. A higher percentage of patients had breast cancer.

Conclusion: This study offers important new information about the clinical and demographic characteristics of individuals with breast cancer. The results of this study can help improve patient outcomes and guide the creation of individualized treatment plans.

Keywords: Breast cancer, age distribution, comorbidities, treatment regimen, laterality.

I. INTRODUCTION

Worldwide, breast cancer is one of the leading causes of cancer morbidity and mortality¹. Breast cancer is the most common cancer detected worldwide in females, as per GLOBOCAN 2022. Breast cancer is the fourth leading cause of cancer death around the world².

Breast cancer deaths in the Southeast Asia region are expected to increase to 61.7% by 2040. Breast cancer is the most common cancer in India, accounting for 28.2% of all female cancers, with an estimated 216,108 cases by 2022. A recent

SURVCAN-3 study (Cancer Survival in Countries in Transition) published in 2023 found that the 3-year median survival for breast cancer across countries was 84%, whereas in India, it was 68%.⁶ According to the CONCORD-3 study (2010–2014), India has a 5-year breast cancer survival rate of 66.1%. In 2017, a population-based cancer survival study was initiated for breast cancer (females) across 25 Population-Based Cancer Registries (PBCRs)³.

The purpose of this retrospective study was to look into the age distribution, comorbidities, treatment regimen, and laterality of patients with breast cancer.

II. METHODS AND MATERIALS:

Study Design:

This retrospective study investigated the medical records of breast cancer patients treated at secondary care centers in Kanchipuram, Tamilnadu between 2022 to 2024.

Patient Selection:

Patients between the ages of 31-90 who had a confirmed diagnosis of breast cancer were included. Patients with missing information or incomplete medical records were excluded.

Data Collection: We gathered clinical and demographic information on laterality, treatment regimen, comorbidities, and age. We also looked at the drug use and chemotherapy schedules of the individuals.

Age Distribution Analysis: Seven age categories were used to group the patients: 31–40, 41–50, 51–60, 61–70, 71–80, 81–82, and 83–90.

Comorbidity Analysis: Among the patients, we found concomitant conditions such as hypothyroidism, diabetes mellitus, and hypertension.

Treatment Analysis:

We examined how individuals responded to various forms of treatment, such as chemotherapy, medication use, and surgery.

Laterality Analysis:

We looked at the laterality of breast cancer, which includes bilateral, right, and left breast cancer.

Materials:

- Patients' medical records
- Chemotherapy regimens and drug usage pattern.

III. RESULTS AND DISCUSSION:

The present study's findings indicate that breast cancer is most prevalent among women aged 51-60 years, accounting for 34.88% of all cases. This age distribution pattern is consistent with previous studies, which have reported a higher incidence of breast cancer in this age group^{[4][5]}. The study found that 51.35% of patients with breast cancer had hypertension.

The treatment patterns observed in this study, with surgical adjuvant chemotherapy being the most frequently selected treatment option

(30.23%), are consistent with current clinical practice guidelines. The findings showed that compared to the left breast, the right breast was more frequently afflicted. The right side accounted for 51.16% of the cases, while the left side accounted for 41.86%.

Chemotherapeutic drugs like doxorubicin are utilized 31.73% of the time. Of them, doxorubicin-90mg was used more frequently for treatment (75mg-2 patients, 80mg-3 patients, 90mg-20 patients, and 100mg-8 individuals). Total 35 patient treated with multiple drug regimen, the chemotherapy regimens used in this study including, 18 patients received doxorubicin+docetaxel+ cyclophosphamide, 2 patients received carboplatin+docetaxel+ doxorubicin, and 5-fluorouracil, 9 patients received doxorubicin+ cyclophosphamide, 2 patients received docetaxel +cyclophosphamide, 1 patient received paclitaxel+ cyclophosphamide, 1 patient received paclitaxel, cyclophosphamide, and doxorubicin, 1 patient received cisplatin, docetaxel, and paclitaxel, 1 patient received doxorubicin, cisplatin, and docetaxel, while 8 patients received it as a single drug regimen, 6 patients treated with doxitaxel and 3 patients treated with doxorubicin

Variables	no. of patients(n)	Percentage (%)
Age group(year)		
31-40	9	20.93%
41-50	9	29.93%
51-60	15	34.88%
61-70	4	9.30%%
71-80	6	13.95%%

81-90	0	0%
Total	43	
Co-morbid		
Hypertension	19	51.35%
Diabetes mellitus	12	32.43%
Hypothyroidism	5	13.51%
Others	1	2.70%
Cancer therapy		
Surgical therapy	0	0%
Radiation therapy	0	0%
Chemotherapy	8	18.60%
surgical chemotherapy	8	18.60%
Palliative chemotherapy	2	4.65%
Adjuvant chemotherapy	5	11.62%
Neoadjuvant chemotherapy	5	11.62%
Palliative surgery	1	2.32%
Surgical adjuvant chemotherapy	13	30.23%
Surgical neoadjuvant chemotherapy	1	2.32%
Drug		
Docetaxel	31	29.80%
Doxorubicin	33	31.73%
Cyclophosphamide	32	30.76%
5-fluorouracil	1	0.96%
Carboplatin	2	1.92%
Cisplatin	2	1.92%
Paclitaxel	3	2.88%
Oxaliplatin	0	0%
Gemcitabine	0	0%
Characteristics		
Right	22	51.16%
Left	18	41.86%
Bilateral	3	6.97%

TABLE 1 Analysis of breast cancer

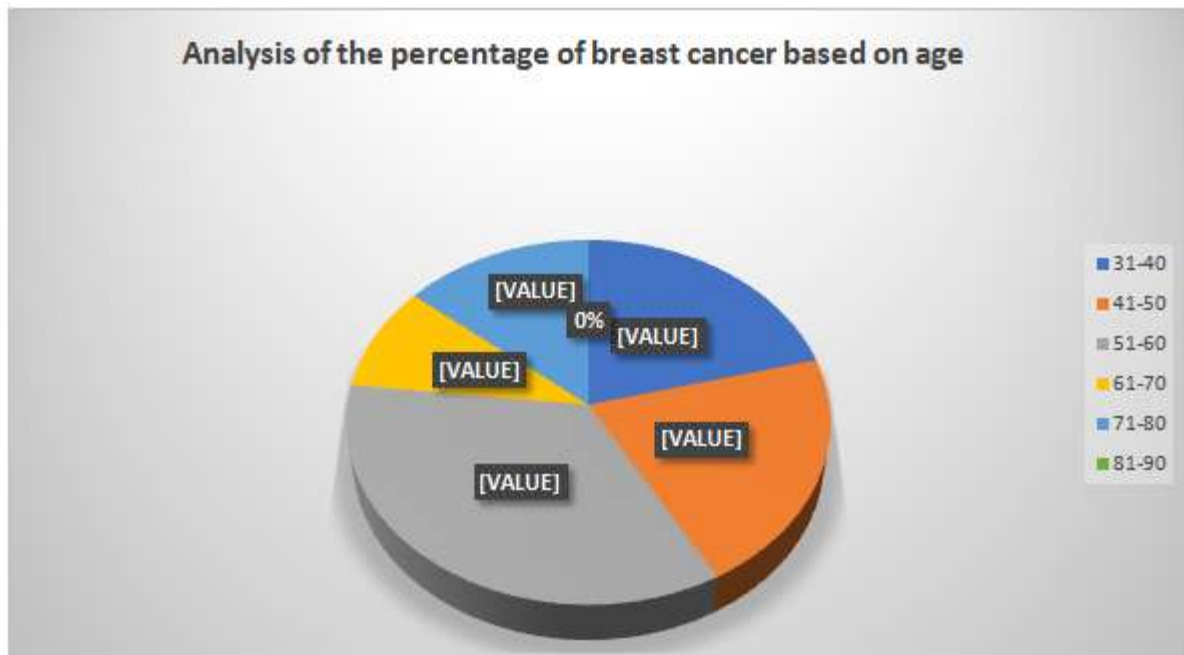


FIGURE 1 Analysis of the percentage of breast cancer based on age

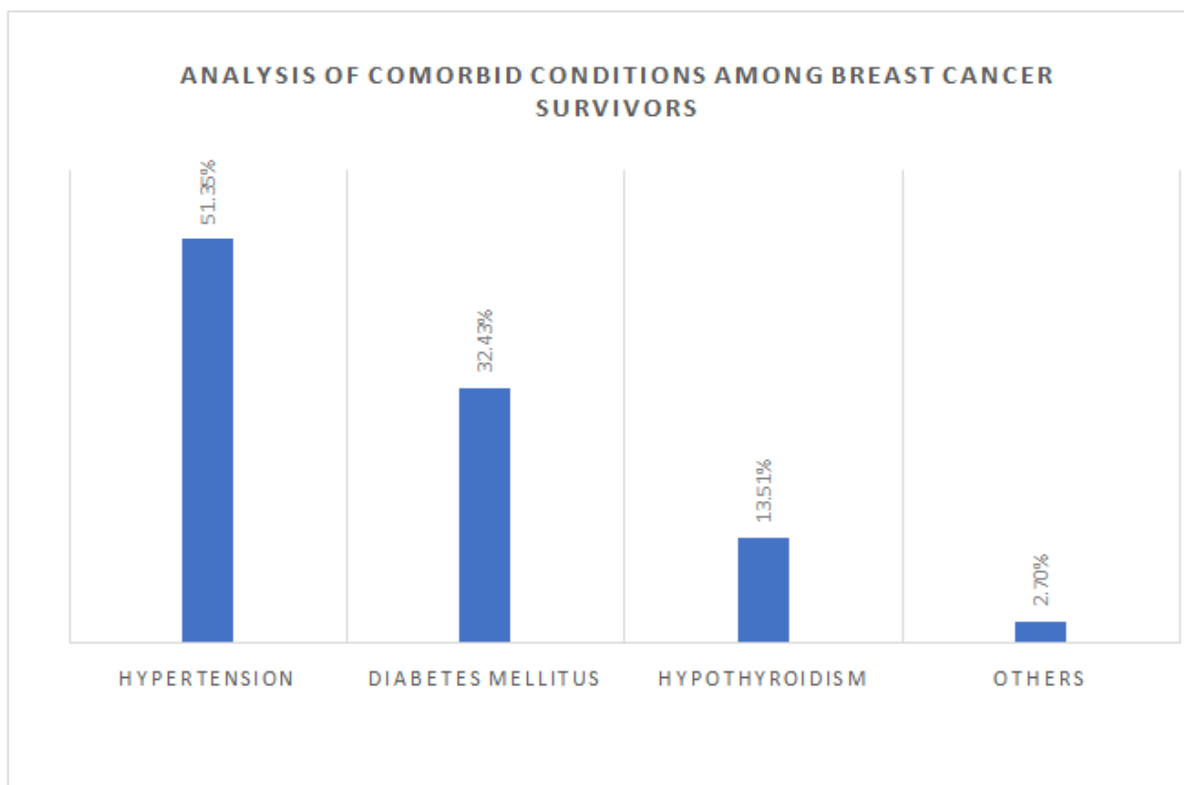


FIGURE 2 Analysis of comorbid conditions among breast cancer survivors

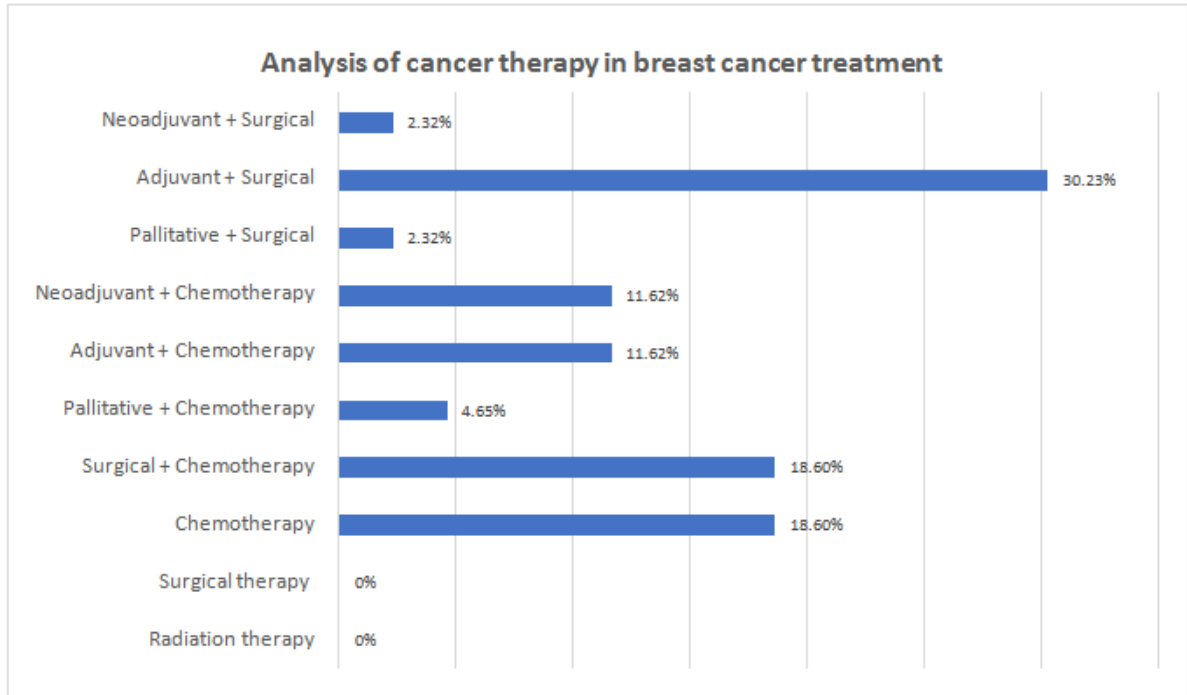


FIGURE 3 Analysis of cancer therapy in breast cancer treatment

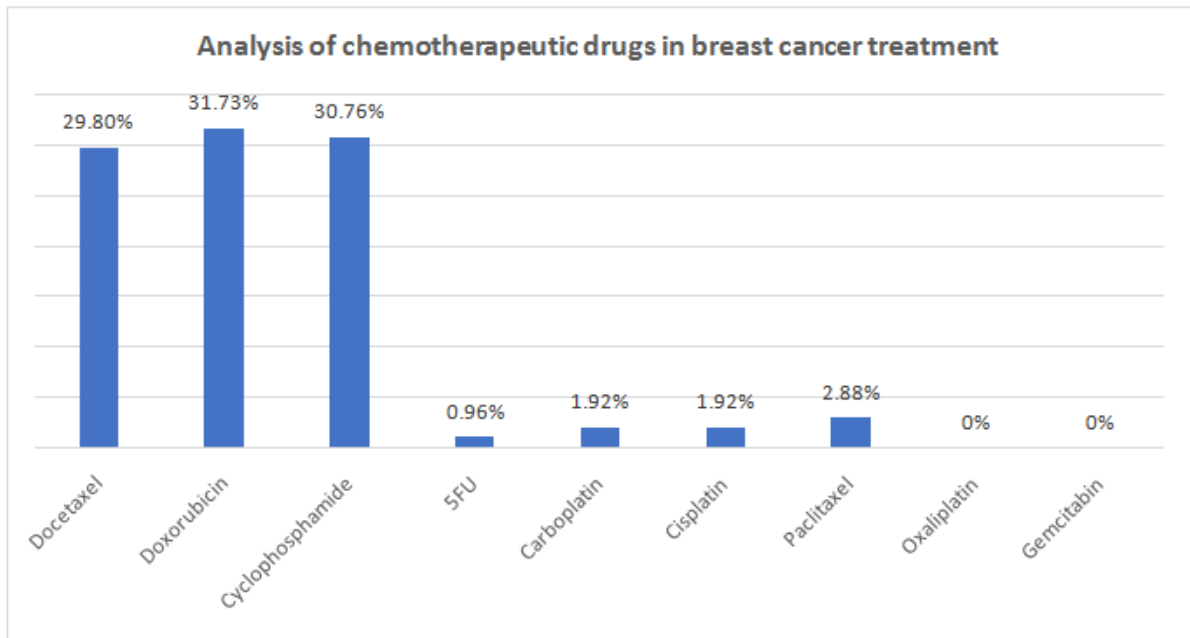


FIGURE 4 Analysis of chemotherapeutic drugs in breast cancer treatment

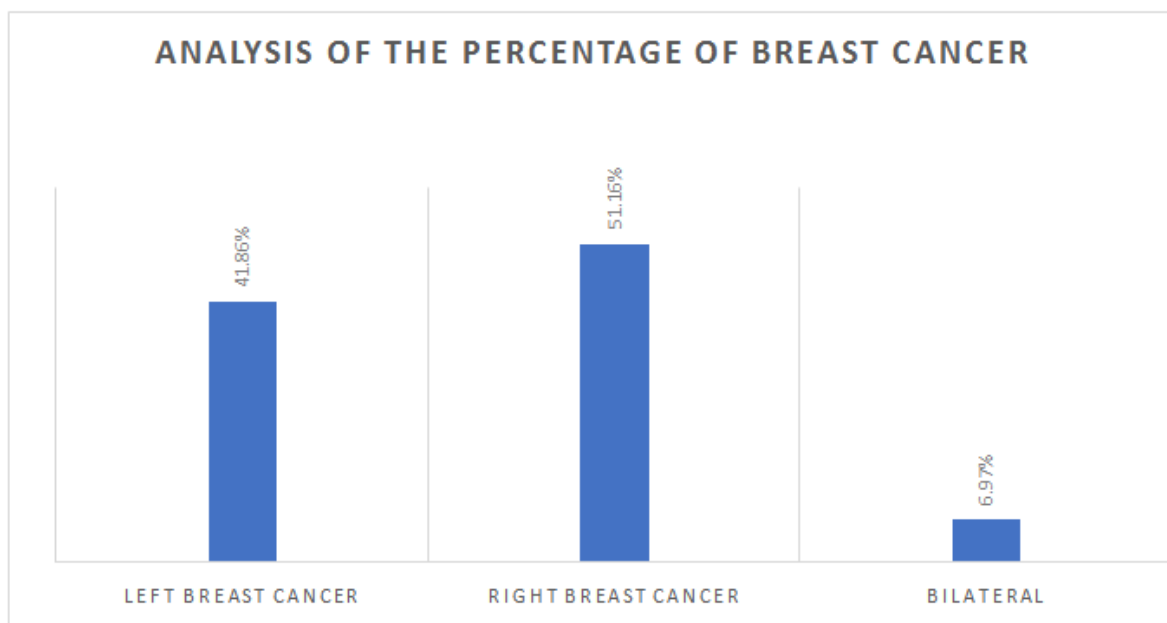


FIGURE 5 Analysis of side of breast cancer

IV. CONCLUSION:

This retrospective study provides valuable insights into the demographic and clinical characteristics of breast cancer patients. The findings of this study indicate that breast cancer is most prevalent among women aged 51-60 years, with hypertension and diabetes mellitus being the most common comorbidities. The study also highlights the importance of personalized treatment approaches, with surgical adjuvant chemotherapy and doxorubicin being the most frequently used treatment modalities.

Future studies should explore the effectiveness and additional factors that influence breast cancer treatment outcomes. We will look into cancer care in specific populations, such as children and pregnant people.

In conclusion, this study contributes to the existing body of knowledge on breast cancer and emphasizes the importance of understanding the demographic and clinical characteristics of breast cancer patients. The findings of this study highlight the need for comprehensive management strategies and the development of personalized treatment plans.

REFERENCE:

- [1]. <https://doi.org/10.18632/aging.202502>
- [2]. [https://academicmed.org/Uploads/Volume6Issue4/162.%20\[3726.%20JAMP_Rohin\].%20825-828](https://academicmed.org/Uploads/Volume6Issue4/162.%20[3726.%20JAMP_Rohin].%20825-828).
- [3]. <https://acsjournals.onlinelibrary.wiley.com/doi/epdf/10.1002/cncr.35188>
- [4]. Deshmukh, S. P., et al. (2019). Age-wise distribution of breast cancer patients: A retrospective study. *Journal of Clinical and Diagnostic Research*, 13(9), 1-4.
- [5]. DeSantis, C. E., Ma, J., Goding Sauer, A., Newman, L. A., & Jemal, A. (2019). Breast cancer statistics, 2019. *CA: a cancer journal for clinicians*, 69(6), 438-451.