

CLINICO- PATHOLOGICAL STUDY OF BREAST CARCINOMA AND MANAGEMENT

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Abstract

Background: Breast cancer is a condition in which tumors are created when aberrant breast cells proliferate uncontrollably. The tumors have the potential to spread throughout the body and cause death if not treated. The milk ducts and/or milk-producing lobules of the breast are the sites where breast cancer cells first appear. Age, genetics, alterations in lifestyle, tumor size, involvement of axillary nodes, histologic grade, and hormone receptor status are only a few of the complicated pathological aspects of breast cancer that affect the patient's prognosis and guide treatment. Additionally, this understanding of the clinic pathological profile forms the basis for the design of future study. **Materials and Methods:** A retrospective analysis was conducted on patients who were admitted to the Department of General Surgery at the Government Medical College Chhattisgarh in Jagdalpur. 75 people in total were enrolled in the study. Who had their tumor identified by fine needle aspiration cytology. The histology reports of each breast biopsy were retrieved from the Pathology Department's histopathology section's file. **Result:** There were 21 respondents who were over 60 years old and 43 subjects between the ages of 41 and 60. The age range of 41 to 60 years had the highest number of subjects. 52 have a breast lump, 11 have a lump with skin changes, 7 have pain in the lump, 3 have drainage from the nipple, and only 2 have an ulcer and the destruction of the nipple areola. Out of 75 subjects, 15 underwent lumpectomies, 10 underwent mastectomy, 20 underwent removal of a few lymph nodes, 8 underwent removal of several nodes, 7 underwent removal of both breasts, 3 underwent chemotherapy, and 12 underwent hormone therapy. **Conclusion:** Breast cancer is the most common type of tumor in women in most parts of the world. The standard course of treatment includes medication, surgery to remove the breast tumor, and radiation therapy to the breast.

INTRODUCTION

One of the most prevalent female causes and a frequent issue in surgical outpatient departments is breast cancer, which can harm patients both physically and mentally. Due to patients ignoring tiny breast lumps and arriving to the hospital after hours, breast cancer is the second most prevalent malignancy in India after cervical carcinoma. According to WHO estimates, the prevalence of breast cancer is rising globally, with industrialized nations having a greater incidence. It affects 2.1 million women annually and is also to blame for the majority of female cancer deaths. Approximately 15% of all female cancer fatalities occurred from breast cancer in 2018, according to estimates of 627,000 deaths.^[1]

Circulating tumor cells (CTC) are the tumor cells from primary or metastatic tumors that are released

into the bloodstream. Despite being uncommon, CTC is used as a biomarker to assess the tumor genotypes as the disease progresses and is treated. A percentage of CTC have the ability to start a metastatic clone. Numerous epithelial malignancies, primarily those of the breast, prostate, lung, and colon, have been found to include CTC. Patients with metastatic disease have a higher chance of having CTC found, yet they have also been found in cases with localized cancer. There are already several methods for detecting CTC, but none of them reach the ideal threshold needed to be used as the gold standard. The methods that are available for CTC isolation and detection are either.^[2] The progesterone receptor (PR) and the estrogen receptor (ER) are the two most often used cancer prognostic variables. Both the ER and PR are nuclear hormone receptors that function as ligand-activated transcription factors. Nuclear hormone receptors share a number of structural characteristics. These

include a central DNA-binding domain that directs the receptors to specific DNA sequences in the regulatory regions of their target genes and a ligand-binding domain that distinguishes between different hormone and non-hormone ligands and is found in the carboxyl-terminal half of the receptor. Overall, the hormone receptors ER and/or PR are expressed by more than 75% of breast carcinomas. The proportion of cancer cells stained with certain biomarkers provides important prognostic and prognostic data.^[3]

An alteration in the genomic structure is the cause of the genetic disorder known as breast cancer. Breast epithelial cells acquire a malignant phenotype due to genetic changes in tumor suppressor and oncogenic genes. These genetic changes also have an impact on how breast cancer behaves, including how it responds to treatment and how it performs clinically. The decision to treat breast cancer has become easier because to significant advances in molecular approaches. Currently, to more precisely classify molecular subtypes of breast cancer, traditional histological techniques and molecular testing are combined.^[4]

Mastectomy followed by adjuvant chemotherapy was once a common course of treatment for locally advanced breast cancer, triple-negative breast cancer, and tumors expressing the human epidermal growth factor receptor 2 (HER2neu). Currently, it combines both a systemic therapy method that targets the entire body and a loco-regional approach that uses surgery and radiation therapy to focus on just the tumor. Endocrine therapy, chemotherapy, anti-HER2 therapy, bone stabilizing medicines, polymerase inhibitors for BRCA (breast cancer gene) mutation carriers, and, more recently, immunotherapy are all examples of systemic therapy. But the majority of patients continue to have primary ablative surgeries. Another promising option, but expensive one, is gene expression profiling in diseases involving hormone receptors.^[5]

MATERIALS AND METHODS

Patients admitted to the Department of General Surgery at the Government Medical College Chhattisgarh in Jagdalpur were the subject of a retrospective study. In this study, a total of 75 individuals were included. And whose malignancy had been determined by Fine Needle Aspiration Cytology. The record of the histopathology section of the Pathology Department was used to retrieve the histopathology reports of all breast biopsies. Information about the tumor was gathered, including the type of biopsy, its laterality, the final diagnosis, associated pathology, lymph node status, and skin and nipple involvement. Further monitoring of the cases was done to look for post-operative problems, recurrence of the tumor at the site of the operation, and recurrence in the axilla. If the patient displayed signs of metastasis, they were examined to identify the metastasis. In a pre-structured questionnaire, all the information related to the clinical examination, biopsy, and other studies was input. Results were analyzed and plotted in an Excel sheet.

Inclusion Criteria

- Patients aged more than 20 and FNAC has confirmed were included in this study.

Exclusion Criteria

- Patient aged less than 20
- Patient with recent history of trauma.
- Patient without informed consent form are excluded from this study.

RESULTS

Out of 75 subjects, 11 subjects were between the age group of 21 to 40 years. 43 subjects were in the age group 41 to 60 years and 21 subjects were in the age group more than 60 years. More number of subjects was in the age group 41 to 60 years.

Table 1: Age Distribution of Study Subjects.

Age	No of patients	Percentage
21 - 40	11	14.6%
41 - 60	43	57.33%
>60	21	28%

Table 2: Clinical features of carcinoma of breast

Symptoms	No of patients	Percentages
Breast lump	52	69.33%
Lump with skin changes	11	14.66%
Lump with pain	7	9.33%
Nipple discharge	3	4%
Ulceration and destruction of nipple and areola	2	2.66%
Total	75	100%

Out of 75 subjects, 52 subjects have lump in the breast, 11 subjects have lump with skin changes, 7 subjects have pain in the lump, 3 subjects have nipple discharge and only 2 subjects have ulceration and destruction of nipple areola.

Table 3: Diagnosis Of Breast Cancer

Diagnosing breast cancer	No of patients	Percentage
Breast ultrasound	20	26.66%
Core needle biopsy	08	10.66%
Ultrasound guided core needle biopsy	05	6.66%
Fine needle aspiration biopsy	09	12%
Excision biopsy	33	44%

Out of 75 patients, 20 underwent breast ultrasounds, 8 underwent core needle biopsies, 9 underwent fine needle biopsies, and 33 underwent excisional biopsies.

Table 4: clinical stages of breast cancer.

Stages	No of patients	Percentage
1	4	5.33%
2	28	37.33%
3	20	26.66%
4	23	30.66%

Out of 75 subjects 28 subjects were in stage II of breast cancer, 23 subjects were in stage IV, 20 subjects were in stage III and only 4 subjects were in stage I of breast cancer.

Table 5: Histopathological Diagnostic Features Of Breast Carcinoma

Histopathological diagnosis	No of patients	Percentage
Ductal carcinoma	05	6.66%
Osteoclastic giant cell carcinoma	04	5.33%
Lobular carcinoma	03	4%
Papillary carcinoma	15	20%
OTHERS (Mammogram and Ultrasound)	48	64%

Out of 75 subjects, 15 patients were diagnosed with papillary carcinoma, 3 patients had lobular carcinoma, 4 patients had osteoclastic giant cell carcinoma and 5 had ductal carcinoma.

Table 6: Management Of Breast Carcinoma Patients

Management	No of patients	Percentage
Removing the breast cancer (Lumpectomy)	15	20%
Removing the entire breast (Mastectomy)	10	13.33%
Removing the limited number of lymph nodes	20	26.66%
Removing the several lymph nodes	08	10.66%
Removing the both breast	07	9.33%
Chemotherapy	03	4%
Hormonaltherapy	12	16%

Out of 75 subjects, 15 underwent lumpectomies, 10 underwent mastectomy, 20 underwent removal of a few lymph nodes, 8 underwent removal of several nodes, 7 underwent removal of both breasts, 3 underwent chemotherapy, and 12 underwent hormone therapy.

DISCUSSION

According to a study by Aslam HM et al., breast carcinoma accounts for 28% of all newly diagnosed cancer cases in the US.^[1] According to Connecticut Tumor Registry, BC increased by 1% between 1940 and 1980 before rapidly increasing by 32% between 1980 and 1987. According to a different study, the prevalence of BC increased from 23.5% in 2000 to 34.5% in 2010. According to a study done in Karachi across various ethnic groups (such as Punjabi, Sindhi, Baloch, etc.), BC accounted for between 2% and 17% of all cancer cases.⁶ In other studies, such as (34.2%),⁵ (11.8%),¹ and (22.4%)⁸, a lower value was obtained when the frequency of BC was evaluated in relation to other breast abnormalities.^[6]

A variety of prognoses have been linked to the existence of specific metaplastic components. While low-grade, fibromatosis-like meta-plastic carcinomas with bland spindled cells have a high risk of local recurrence but a low risk of metastatic spread, the presence of high-grade spindled or pleomorphic components, for example, has been associated with aggressive behavior, such as meta- stases .It should be noted that in our series, there were no patients with this latter histologic subgroup. However, neither the metaplastic subtype nor the histologic grading in MBC (Metaplastic breast carcinoma) is currently considered to have any predictive significance.^[7]

Clinical TNM staging is a crucial clinical indicator of breast cancer, although the majority of records lacked adequate documentation. The patients were divided into the OBC, LABC, and MBC groups. MBC patients were not admitted to surgical wards unless they required an investigative workup or surgical palliation. Chemotherapy, radiation, and hormone therapy were applied as adjuvants, with surgery serving as the primary route of treatment. In the west, BCS is becoming more and more popular. According

to several recent reports, BCS is now the treatment option of choice for many individuals. Mammographic screening for early diagnosis, the development of image-guided CNB, and the introduction of cutting-edge radiotherapy units are the arguments in favor of conservatism.^[8]

Fine needle aspiration cytology (FNAC) is the first inquiry used to diagnose breast carcinomas, the cytology characteristics of MBC should not be disregarded. The presence of biphasic tumor cells with atypical spindle cells, atypical squamous cells, osteoclast-like large cells, and/or matrix with or without a component of atypical ductal cells are indicators for the diagnosis of MBC on FNAC. But it should be remembered that due to selective sampling of different disease components, a cytologic diagnosis of MBC could not be possible. The importance of accurately identifying MBC on core biopsy and FNAC lies in the probability that surgical management will not include axillary nodal excision if MBC is mistakenly classified as a non-epithelial malignancy, such as spindle cell neoplasm or sarcoma.^[9]

In the past, the widely used treatment option was mastectomy followed by adjuvant chemotherapy for locally advanced BC, triple-negative this review clearly demonstrates that the treatment of BC is complex and is constantly evolving with a large number of ongoing clinical trials on emerging therapies. Indeed, the BC molecular subtype will determine the personalized therapeutic approach, such as targeted treatments like endocrine therapy for HR+ BC or anti-HER2 therapy for HER2+ BC. These therapies have demonstrated their safety and efficacy in treating BC over the years. However, it is essential to go beyond these conventional treatments as BC is a complex disease and not all patients can benefit from personalized treatment.^[10]

CONCLUSION

Most of the tumors are aggressive (gradeII) and diagnosed at advanced stage with nodal meta-stases. The aim of treatment for patients with stage I to stage III breast cancer is to eradicate the disease. The typical course of treatment entails radiation therapy to the breast, medications, and surgery to remove the breast tumor and treatment for women with stage IV

breast cancer is to keep the disease under control for as long as feasible. State health authorities need to focus in this community about creating breast cancer awareness and should conduct health campaigns and encourage early screening. Diagnosis and screening of breast cancer, and evaluation and treatment of PMPS (Post- mastectomy pain syndrome) that will provide fewer side effects and improves the quality of life of the patients with breast carcinoma.

REFERENCES

1. Vijaya Lakshmi V, Manohar Reddy L, Rama Swamy Naik R, Neeraja M and Koteswar Rao K. A Clinico-pathological study of carcinoma of breast. *International Journal of Surgery Science* 2020; 4(2): 344-348.
2. Cherry BANSAL1, 4, Mukta PUJANI2, Sanjeev MISRA3, AN SRIVASTAVA1, US SINGH4. Circulating Tumor Cells in Breast Cancer: Correlation with Clinic pathological Parameters, Hormone Profile and MicroRNA Polymorphisms *Turkish Journal of Pathology*. 2016; 32(3): 148-157.
3. Alaa Ali M. Elzohry, Engy Mohamed Fikry and Mohammed Farghaly Abd Elhamed. Breast cancer and factors affecting survival rate Narrative review article. *WSN*.2019; 120(2):275-81.
4. Dharambir Kashyap ,1 Deeksha Pal ,2 Riya Sharma,3 Vivek Kumar Garg ,4Neelam Goel ,5 Deepika Koundal ,6 Atef Zaguia ,7 Shubham Koundal,4 and Assaye Belay. Global Increase in Breast Cancer Incidence: Risk Factors and Preventive Measures. *Bio Medical Research International*. 2022.
5. Ravi Mehrotra and Kavita Yadav.Breast cancer in India: Present scenario and the challenges ahead. *World J Clin Oncol*. 2022 Mar 24; 13(3): 209–218.
6. ASHRAF A., SHAIKH A.S., SABA K., BUKHARI M.H. AND KAMAF.CLINICOPATHOLOGICAL STUDY OF BREAST CARCINOMAAT A TERTIARY CARE HOSPITAL. *Biomedica*.2015;31(4).
7. Ashley Cimino-Mathews, MD, 1,2 Sangita Verma, MD, 3* Maria Cristina Figueroa-Magalhaes, MD, 2* Stacie C. Jeter, CCRP, 2 Zhe Zhang, MS, 2Pedram Argani, MD, 1,2 Vered Stearns, MD, 2 and Roisin M. Connolly, MBBCh 2. A Clinic pathologic Analysis of 45 Patients with Metaplastic Breast Carcinoma. *Am J Clin Pathol*. 2016; 145:365-372.
8. Sandhu, DS; Sandhu, S1; Karwasra, RK; Marwah, S. Profile of breast cancer patients at a tertiary care hospital in north India. *Indian Journal of Cancer*.2010; 47(1): 16-22.
9. Vineeth V. Damera , Zachariah Chowdhury , Mayank Tripathi , Rupesh Singh , Ravinder K. Verma ,Meenal Jain.Clinicopathologic Features of Metaplastic Breast Carcinoma: Experience From a Tertiary Cancer Center of North India.*Cureus*.2022; 14(9): e28978.
10. Anna Burguin 1, 2, Caroline Diorio 2, 3 and Francine Durocher 1, 2, Breast Cancer Treatments: Updates and New Challenges. *Pers. Med*. 2021; 11(8): 808.