ORIGINAL RESEARCH

Clinico-pathological assessment of breast cancer patients: An epidemiological study

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ABSTRACT

Background: The incidence of breast cancer deaths is notably higher in transitioning countries, with an incidence rate approximately 88% greater than in transitioned countries. Hence; the present epidemiological study was conducted for assessing clinical and pathological profile of patients with breast cancer. **Materials & methods:** A total of 100 patients with confirmed diagnosis of breast cancer were enrolled. Complete demographic and clinical details of all the patients was obtained. A Performa was made and complete clinical findings were recorded. H and E-stained slides of biopsies all the patients were assessed separately. Histopathological assessment of all the cases was done. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. **Results:** Mean age of the patients was 48.7 years. 63 percent of the patients were of rural residence. Right side involvement occurred in 63 percent of the patients. 23 percent of the patients were nulliparous. While assessing the histopathological profile, it was seen that ductal type was the most common type found to be present in 92 percent of the patients. Lobular, medullary and metastatic carcinoma were the other types found to be present in 3 percent, 2 percent and 2 percent of the patients respectively. **Conclusion:** Increased public awareness is essential, alongside the rigorous enforcement of screening programs by governmental authorities to facilitate earlier diagnosis.

Key words: Breast Cancer, Ductal

INTRODUCTION

Carcinogenesis is defined by six principal hallmarks and has the potential to occur in any cell, tissue, or organ, resulting in pathological changes that can lead to a wide array of cancers.[1] While many cancers do not invariably lead to death, they considerably diminish quality of life and impose substantial economic burdens.[2] Breast cancer ranks among the most commonly diagnosed cancers and is the fifth leading cause of cancer-related fatalities, with an estimated 2.3 million new cases reported worldwide according to GLOBOCAN 2020 data. The incidence of breast cancer deaths is notably higher in transitioning countries (such as Melanesia, Western Africa, Micronesia/Polynesia, and the Caribbean), with an incidence rate approximately 88% greater than in transitioned countries (including Australia/New Zealand, Western Europe, Northern America, and Northern Europe). Implementing preventive measures and screening programs is essential for reducing the incidence of breast cancer and facilitating early treatment interventions.[3, 4]Upon confirmation of a breast cancer diagnosis, the evaluation of disease extent is conducted, primarily influencing the decision regarding the necessity of preoperative (neoadjuvant) systemic therapy. A critical component of the initial clinical assessment for patients with non-metastatic breast cancer involves identifying clinical factors that indicate inoperability, thereby warranting the application of neoadjuvant therapy.[5- 7]Hence; the present epidemiological study was conducted for assessing clinical and pathological profile of patients with breast cancer.

MATERIALS & METHODS

The present epidemiological study was conducted for assessing clinical and pathological profile of patients with breast cancer. A total of 100 patients with confirmed diagnosis of breast cancer were enrolled. Complete demographic and clinical details of all the patients was obtained. A Performa was made and complete clinical findings were recorded. H and E-stained slides of biopsies all the patients were assessed separately. Histopathological assessment of all the cases was done. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Univariate analysis was done for evaluating level of significance.

RESULTS

A total of 100 patients were enrolled. Mean age of the patients was 48.7 years. 63 percent of the patients were of rural residence. Right side involvement occurred in 63 percent of the patients. 23 percent of the patients were nulliparous. While assessing the histopathological profile, it was seen that ductal type was the most common type found to be present in 92 percent of the patients. Lobular, medullary and metastatic carcinoma were the other types found to be present in 3 percent, 2 percent and 2 percent of the patients respectively.

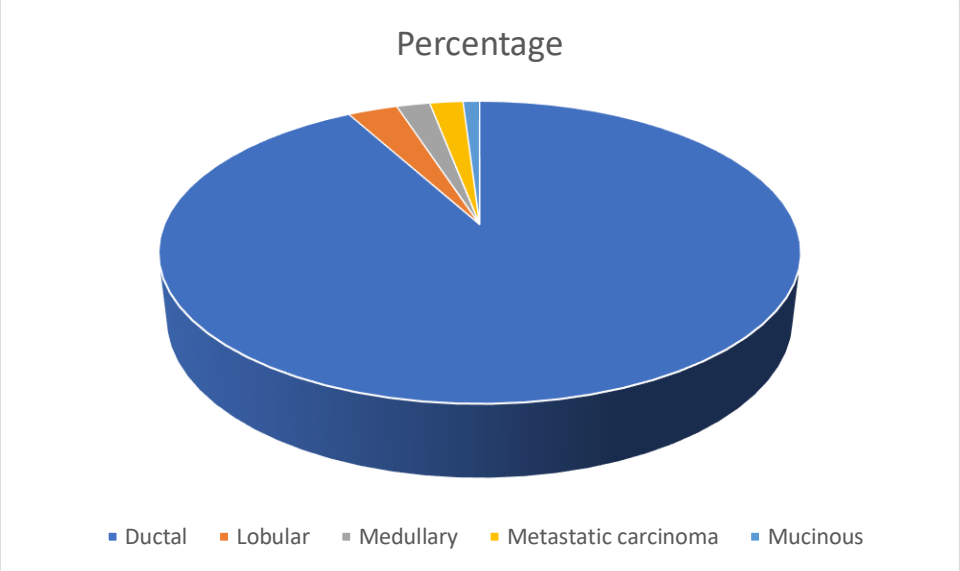
Table 1: Demographic data

Variable		Number	Percentage
Age group (years)	Less than 30	23	23
	30 to 50	38	38
	More than 50	39	39
Residence	Rural	63	63
	Urban	37	37
Side involvement	Right side	61	61
	Left side	39	39
Parity	Nulliparous	23	23
	Uniparous	33	33
	Multiparous	44	44

Table 2: Histopathological description

Histopathology	Number	Percentage
Ductal	92	92
Lobular	3	3
Medullary	2	2
Metastatic carcinoma	2	2
Mucinous	1	1
Total	100	100

Graph 1: Histopathological description



DISCUSSION

Breast cancer is a disease characterized by significant genetic and clinical diversity, encompassing various subtypes. The categorization of these subtypes has undergone considerable development over time. Currently, the most prevalent and widely recognized classification system for breast cancer is derived from an immunohistochemical approach, which focuses on the expression levels of key hormone receptors, namely estrogen (ER), progesterone (PR), and human epidermal growth factor receptor 2 (HER2).[6- 9] The definitive etiology of carcinogenesis remains undetermined; however, various risk factors associated with the onset of breast cancer have been identified. Among these, critical determinants include gender, age, and the level of economic development within a specific nation, as supported by the aforementioned epidemiological evidence. Additionally, hormonal influences, particularly those related to the duration of estrogen exposure, play a

significant role. Procreative factors, such as the number of offspring, the age at which the first child is born, and breastfeeding practices, are also noteworthy. Genetic predispositions, the utilization of hormone replacement therapy, poor dietary habits leading to obesity, and other lifestyle choices are considered significant contributors to breast cancer risk. Furthermore, hormonal contraceptive use, alcohol intake, and exposure to ionizing radiation during youth are recognized as important risk factors in the development of this disease.[7- 9]Hence; the present epidemiological study was conducted for assessing clinical and pathological profile of patients with breast cancer.

A total of 100 patients were enrolled. Mean age of the patients was 48.7 years. 63 percent of the patients were of rural residence. Right side involvement occurred in 63 percent of the patients. 23 percent of the patients were nulliparous. While assessing the histopathological profile, it was seen that ductal type was the most common type found to be present in 92 percent of the patients. Lobular, medullary and metastatic carcinoma were the other types found to be present in 3 percent, 2 percent and 2 percent of the patients respectively.Haroon S et al evaluated the clinicopathological parameters, recurrence and survival of metastatic breast cancer (MBC). Estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2/neu) immunohistochemistry (IHC) was performed on representative tissue blocks. Total 183 cases of MBCs were included in the study, out of which 120 cases were excision specimens. The mean age of the patients was 48.84±12.99 years, and the most common age group was between 36 and 50 years of age. Most of the cases were tumor (T) stage T3 (50%), and nodal metastasis was present in 40% of cases. Most cases were grade III (78.7%). ER, PR and HER2/neu positivity was noted in 15.8%, 13.1%, and 9.8% cases, respectively. Follow-up data were available for 70 cases, with a median follow-up period of 4 (1-7) years. Tumor recurrence was noted in 31.4% cases, with a survival rate of 71.4%. Squamous, chondroid, spindle cell differentiation, and matrix production were noted in 70.5%, 7.1%, 13.7%, and 2.2% cases, respectively. A significant association of squamous differentiation was noted with HER2/neu positivity. An inverse association of spindle cell differentiation was seen with axillary metastasis. Survival analysis by Kaplan-Meier revealed a significant association of survival with tumor recurrence.[10]Razik MA et al determined the demographics, clinical patterns, and their association with histopathological types of breast tumors among females presently residing in KSA.a total of 270 female patients were included in the study. The most frequently encountered symptom was a breast lump (95.9%, n = 259), followed by pain (18.9%, n = 51). More than half the population (53%, n = 143) had a histopathological diagnosis of fibroadenoma. Multivariate analysis revealed that patients > 46 years of age were less likely to present with fibroadenoma. Those in the 31 - 45 years age group were less likely to present with ductal/lobular/papillary carcinomacompared to the less than 30 years group.[11]

CONCLUSION

Increased public awareness is essential, alongside the rigorous enforcement of screening programs by governmental authorities to facilitate earlier diagnosis.

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