IJMRP

Original Research Article.

Retrospective Analysis of Breast Cancer Cases at a Tertiary Care Hospital

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ABSTRACT

Background: Breast cancer is the most common malignancy in women worldwide. The patterns of breast cancer differ in many ways between Asian and Western countries. Hence; the present retrospective study was planned for evaluating the breast cancer cases.

Materials & Methods: A total of 200 breast cancer cases were included in the present study. Complete demographic and clinical details were separately analysed. A Performa was made and side of involvement and other relevant clinical data was recorded. Histopathologic reports of all the cases were analysed and segregation of the cases was done based on the histopathologic diagnosis.

Results: Invasive ductal carcinoma was the most common type encountered, found to be present in 72.5 percent of the cases. Lobular form was present in 6.5 percent of the cases. Papillary and medullary type was found to be present in 7 cases each. Apocrine, mucinous and clear cell type was found to be present in 3, 4 and 4 cases respectively. Carcino-sarcoma was found to be present in 3 cases.

Conclusion: Invasive ductal carcinoma is the most commonly encountered histological type breast cancer in Indian population.

Keywords: Breast Cancer, Histopathology, Ductal.

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INTRODUCTION

Breast cancer is the most common malignancy in women worldwide. According to the data from Globocan 2012, the global incidence of breast cancer was estimated at 1.67 million newly diagnosed patients and 0.522 million deaths owing to breast cancer globally. Breast cancer is the most important cause of women's cancer related death in less developed regions with more than three lakhs deaths per year worldwide. Differences in the incidence, pathology, and mortality of breast cancer have been noticed between different regions and races, which may be related to genetic background, socioeconomic development, life style, and so on.[1-3]

The patterns of breast cancer differ in many ways between Asian and Western countries. More attention was paid on the progress with time of epidemiology and clinicopathology of breast cancer.[4]

The incidence of breast cancer varies greatly around the world; it is the lowest in less developed countries and the greatest in the more developed countries. Since developing countries are going through rapid societal and economic changes, the shift towards life styles typical of industrialized countries leads to a rising burden of cancers associated with reproductive, dietary, and hormonal risk factors. Incidence rates remain the highest in more developed regions, but mortality is relatively much higher in less developed countries due to lack of early detection and access to treatment facilities. Information on the incidence of breast cancer is essential for planning health measures.[5,6]

The pathogenesis of breast cancer is complex and many factors, such as, genetic, dietary, and environmental and life style related have been extensively studied and implicated. The prognosis and treatment of the disease depends on various parameters such as the tumor size, lymph node status, histopathologic type, the grade and stage of the cancer.[7] Hence; the present retrospective study was planned for evaluating the breast cancer cases.

MATERIALS & METHODS

The present study was conducted in the Department of Pathology, Krishna Mohan Medical College and Hospital, Mathura, Uttar Pradesh (India) and it included evaluation and retrospective assessment of breast cancer cases. A total of 200 breast cancer

cases were included in the present study. Cases in which complete data record was not available were excluded. Complete demographic and clinical details were separately analysed. A Performa was made and side of involvement and other relevant clinical data was recorded. Histopathologic reports of all the cases were analysed and segregation of the cases was done based on the histopathologic diagnosis. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study a total of 200 breast cancer cases were analysed. Mean age of the patients was found to be 46.8 years. 57.5 percent of the patients belonged to the age group of 30 to 50 years. 26.5 percent of the patients belonged to the age group of 51 to 70 years. Right side involvement occurred in 53 percent of the cases while left side involvement occurred in 46.5 percent of the cases. Bilateral involvement occurred only in a single case. In the present study, invasive ductal carcinoma was the most common type encountered, found to be present in 72.5 percent of the cases. Lobular form was present in 6.5 percent of the cases. Papillary and medullary type was found to be present in 7 cases each. Apocrine, mucinous and clear cell type was found to be present in 3, 4 and 4 cases respectively. Carcino-sarcoma was found to be present in 3 cases.

Table 1: Age-wise distribution

Age group (years)	n	%
Less than 30	12	6
30 to 50	115	57.5
51 to 70	53	26.5
More than 70	20	10

Table 2: Distribution of patients according to side involvement

Side	n	%
Right	106	53
Left	93	46.5
Bilateral	1	0.5

Table 3: Histopathologic types

Types		n	%
Invasive	Ductal	145	72.5
	Lobular	13	6.5
	Mixed	3	1.5
Invasive (Special types)	Papillary	7	3.5
	Medullary	7	3.5
	Apocrine	3	1.5
	Mucinous	4	2
	Clear cell	4	2
	Cribriform	2	1
	Tubular	2	1
Miscellaneous	Anaplastic	4	2
	Carcino-sarcoma	3	1.5
	Others	3	1.5
Total		200	100

DISCUSSION

Breast cancer is a diverse pathologic entity illustrative of several subgroups of numerous cellular configurations, molecular aberrations along with clinical behaviour. Numerous variables like histological grade, type and size of tumor, metastasis etc. influence the prognosis of this cancer.[8] Advancement of comprehensive therapeutic protocol has led to decline in mortality rate of breast cancer patients. However, recurrence and metastasis are still important risk factors controlling the mortality rate in breast cancer patients. After treatment, any residual cancer cells that continue to proliferate can lead to a local recurrence and/or metastasis. Despite the significance of proliferation of residual breast cancer cells, most prognostic factors measure demographic characteristics of the patient (e.g. age), tumor status (e.g. grade, size, spread) or histological features (e.g. hormone receptor status, HER-2 status, and nodal status).[9, 10] Hence; the present retrospective study was planned for evaluating the breast cancer cases.

In the present study a total of 200 breast cancer cases were analysed. Mean age of the patients was found to be 46.8 years. 57.5 percent of the patients belonged to the age group of 30 to 50 years. Right side involvement occurred in 53 percent of the cases while left side involvement occurred in 46.5 percent of the cases. Bilateral involvement occurred only in a single case. Mohapatra M et al assessed the clinical profile and histopathologic types of breast cancer patients in a known population. 178 patients were analysed. The authors conducted the clinico-pathological evaluation following standard protocols. Among these 178 subjects, 175 were females while the remaining 3 were males: belonging to the age group of 28 to 76 years. Majority (111/62.3%) of the cases were within the age range of 31-50 years of age with mean age of 48.7 years. Two females had bilateral breast cancer and one female had synchronous papillary serous cystadenocarcinoma of the ovary. Invasive ductal carcinoma no special type was the most common histopathologic pattern and was seen in 172 (95.5%) cases. Most tumors were Scarff Bloom Richardson grade II and American Joint Committee on Cancer pathologic stage II. Prognostically, majority of tumors (49.5%) was assessed as 'good' as per the Nottingham prognostic index score.[10] In another past study conducted by Sandhu DS et al, authors evaluated the epidemiologic profile of breast cancer patients. For carrying out data analysis, they analyzed the data records of a total of 304 patients. In most of the patients, the residence was rural. Also, the symptoms were of longer duration in rural patients in comparison to urban patients. Most dominant symptoms found to be present was Lump in the breast. Familial breast cancer was uncommon. The most common histology was infiltrating duct carcinoma. Modified radical mastectomy was found to be a safe operative procedure. Breast conservative surgery, although considered the gold standard in early breast cancer, was found unsuitable for our patients, due to the social background and lack of intensive radiotherapy and chemotherapy backup. Infiltrating duct carcinoma was more commonly associated with positive lymph nodes compared to other histopathologies.[11]

Breast cancers can be classified into biologically and clinically meaningful subgroups according to histological grade and histological type. Grade is an assessment of the degree of differentiation (i.e. tubule formation and nuclear pleomorphism) and proliferative activity (i.e. mitotic index) of a tumour, and

mirrors its aggressiveness.[11, 12] Histological type refers to the growth pattern of the tumours. The histological diversity of adenocarcinomas in the breast has long fascinated pathologists, who have identified specific morphological and cytological patterns that were consistently associated with distinctive clinical presentations and/or outcomes. These patterns are called 'histological types'.[12]

In the present study, invasive ductal carcinoma was the most common type encountered, found to be present in 72.5 percent of the cases. Lobular form was present in 6.5 percent of the cases. Papillary and medullary type was found to be present in 7 cases each. Apocrine, mucinous and clear cell type was found to be present in 3, 4 and 4 cases respectively. Carcino-sarcoma was found to be present in 3 cases. Pathak R et al assessed the histopathological variants of carcinoma of breast. Macroscopic and microscopic examination provided the tumor size, stage, grade, lymph node status, lympho-vascular invasion and perineural invasion. The study comprised 112 breast cancer patients of which 109 (97.3%) were females and 3 (2.7%) were males. Invasive ductal carcinoma no speciic type was the most common type of breast carcinoma. (84 cases) accounting 75% of total cases. Carcinoma with medullary features was second most common (6 cases) comprising 5.4% cases followed by lobular, papillary, apocrine, mucinous and NST mixed types. Grade II tumors were most frequent grade observed in 76.79% cases followed by Grade I (12.50%) and Grade III (10.71%). As a conclusion invasive ductal carcinoma was the most common histological type breast cancer and the tumors were found at T2 and N3 stage i.e maximum at grade II.[13] Forae G et al examined the frequency and histological types and grades of BRCA in a pioneer teaching Hospital. Invasive carcinoma of no special type (NST) was the most commonly encountered histological group of breast carcinoma constituting (n = 203/261, 77.7%) with the high grade invasive ductal carcinoma as the leading diagnosis. Majority of BRCAs encounter was invasive ductal carcinoma of NST with bulk of patients presenting in Stages III and IV.[14]

CONCLUSION
From the above results, the authors concluded that invasive ductal carcinoma is the most commonly encountered histological type breast cancer in Indian population. However, further studies are recommended.

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