

## EPIDEMIOLOGICAL AND CLINICAL PROFILE OF BREAST CANCER PATIENTS AT KR HOSPITAL, MYSORE

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### ABSTRACT

#### BACKGROUND

Cancer rates are set to increase at an alarming rate globally to 15 million new cases in the year 2020. Worldwide breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women (after lung cancer). Presently, 75,000 new cases occur in Indian women every year. Immunological and histological management of breast cancer requires multidisciplinary treatment. The difference in management of breast cancer under the hands of surgical oncologist and general surgeons vary and need for aggressive planned neo-adjuvant chemotherapy by medical oncologist is needed.

#### MATERIALS AND METHODS

This is a retrospective descriptive study hospital records of 104 patients admitted from October 2013 to October 2016 were used for study and data analysis.

Study Design- A retrospective descriptive study.

#### RESULTS

The average mean age of our female breast cancer patients was lower compared to the statistics of western world with at least one to two decades difference. A large percentage of patients were from rural setup and had longer duration of symptoms. Left side lump in the breast was the most common symptom. Screening by mammography and staging procedures such as bone scan, Computed Tomography (CT) scan and Magnetic Resonance Imaging (MRI) were sparsely used. The most common histology was infiltrating ductal carcinoma.

#### CONCLUSION

Modified radical mastectomy is considered gold standard in early breast cancer. Infiltrating ductal carcinoma was more commonly associated with positive lymph nodes compared to other histopathologies. Neoadjuvant chemotherapy was used mainly by clinical oncologists suggesting a more rational approach toward the management of breast carcinoma.

#### KEYWORDS

Breast Cancer, Combined Modality, Epidemiology, Surgery.

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#### BACKGROUND

Cancer rates are set to increase at an alarming rate globally to 15 million new cases in the year 2020.<sup>[1]</sup> Worldwide breast cancer is the most frequent cancer in women and represents the second leading cause of cancer death among women (after lung cancer).<sup>[2],[3]</sup> Presently, 75,000 new cases occur in Indian women every year.<sup>[4]</sup> Epidemiology of breast cancer in India is very limited. Locally advanced breast cancer (LABC) constitutes more than 50% to 70% of the patients presenting for treatment.<sup>[4]</sup>

Immunological and histological management of breast cancer requires multidisciplinary treatment.<sup>[3]</sup> The difference in management of breast cancer under the hands of surgical oncologist and general surgeons vary and need for aggressive planned neoadjuvant chemotherapy by medical oncologist is needed. Hence, this retrospective study was carried out to know the epidemiology, clinical presentation, risk factors and management strategies for breast cancer patients.

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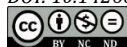
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#### MATERIALS AND METHODS

A total of 104 primary breast cancer patients admitted over a period of 3 years period (October 2013 - October 2016), in KR Hospital, Mysore were taken up for study. Post mastectomy patients outside KR Hospital were excluded. A detailed retrospective descriptive study analysis of patients was done and tabulated. The retrospective descriptive study information was collected from the medical records department in KR Hospital, Mysore.

A majority of the patients (70%) were in the age group of 31 - 50 years. The youngest patient was 25 and the oldest was 80 years old. Of the 104 patients, 100 (98.7%) were females and four (1.3%) were males. The total of 72 (70%) were from rural setup and 32 (30%) from urban setup with ratio being 1.9: 1.

[Table 1] shows that 93 (90%) patients presented with a lump in the breast; 47 (55%) patients had a right breast lump and 32 (30%) had left breast lump. The pattern of presenting complaints were recorded in 102 (99.0%) patients as shown in [Table 2]. 68 (65%) patients presented with a history of more than three months' duration and only three (2%) patients presented with a history of less than 15 days history. Of 100 female breast cancer patients, 83 (80%) had less than two children and 16 (15%) were nulliparous. Of this, 16% of patients were post-menopausal. No patient had a positive family history of breast cancer.

Fine needle aspiration cytology (FNAC) was done in 86 patients. It was positive for malignancy in 77 (90%) and negative or inconclusive in 7 (10%) patients. Inconclusive or negative patients were further subjected for excision biopsy. Mammography were done only in 16 (15%) patients. 5 (5%) patients were diagnosed to have lung metastasis on a chest x-ray. In 95 (91.4%) patients an ultrasound of the abdomen was done and 4 (4.6%) were found to have metastasis in the liver. Liver function tests (LFTs) were done in 26 (25%) patients. Out of these 26 patients 12 (45%) had LABC, 10 (40%) had early breast cancer (EBC) and 4 (15%) were stage IV.

The surgical treatment given to the patients are as follows: a total of 100 (97%) patients underwent surgery and remaining 4 (3%) were inoperable cases. Out of 100 operated cases, 80 (80%) underwent modified radical mastectomy (MRM). Out of 100 operated cases 62 (62%) were operated by surgical oncologists, while the remaining were operated by general surgeons. A majority of the patients, 67 (64%), received anthracycline-based chemotherapy with 56 (54%) receiving cyclophosphamide, epirubicin and 5-fluorouracil (FEC) respectively. 50 (50%) patients received hormone therapy and Tamoxifen 20 mg daily.

[Table 3] shows the final histopathology profile of 100 operated patients. 98 (98%) patients had invasive ductal carcinoma (IDC). Out of 100 cases of axillary dissection, no lymph nodes were isolated from the specimen in 2 (2%) patients. In 21 (20%) patients 1 - 5 lymph nodes were isolated, in 50 (50%) 6 - 10 lymph nodes, in 25 (25%) patients 11 - 15 lymph nodes, in 6 (6%) patients 16 - 20 lymph nodes and in 1 (1%) patient more than 20 lymph nodes were isolated. The final staging of patients with LABC were 60%, 35% patients were EBC, that is stage IIb or less and 5.6% patients were in stage IV.

**RESULTS**

Presentation	Frequency	Percentage
Isolated lump in breast	93	90
Fungating/ulcerative growth	4	4.16
Combination	5	5.2
Isolated nipple discharge	1	1.04
Isolated pain in breast	1	1.04
<b>Total</b>	<b>104</b>	<b>100</b>

*Table 1. Profile of Clinical Presentation*

Duration	Percentage
< 15 days	2
15-30 days	65
3-6 months	10
6 months - 1 year	15
> 1 year	8
<b>Total</b>	<b>100</b>

*Table 2. Duration of Clinical Presentation*

Histopathology	Ductal	Lobular
Invasive	98 (98%)	1 (1%)
In situ	0	1 (1%)

*Table 3. Histopathological Findings*

**DISCUSSION**

This retrospective analysis was to study the epidemiology of breast cancer at KR Hospital, Mysore. A majority of the patients were in the fourth to sixth decades of their life, which correlated with studies conducted in India and other Asian countries.<sup>[4],[5],[6],[7],[8],[9]</sup> However, reports from the western world showed that female breast carcinoma were mostly in the fifth and sixth decade.<sup>[10],[11],[12]</sup> The incidence of breast carcinoma in males has increased over the time.<sup>[13],[14],[15]</sup> Unlike from western countries, majority of the patients in this study were from rural setup.<sup>[4],[16],[15]</sup> Indian Council of Medical Research (ICMR) cites that 70% - 80% of India's population resides in rural areas.<sup>[6]</sup> Majority of the patients were of low socioeconomic status. Lump in the breast was the chief complaint in majority of patients with isolated complaints of nipple discharge or pain in the breast.

The incidence of breast carcinoma was more on the left side,<sup>[17],[18],[19],[20],[21],[22],[23]</sup> possibly due to bulkier left breast and larger volume of breast tissue in upper outer quadrant.<sup>[21],[23]</sup> This study shows less number of nulliparous patients presenting with breast carcinoma. However, other reports indicate higher incidence of breast carcinoma in nulliparous females.<sup>[3],[24],[25]</sup>

Majority of the patients had their menarche between the ages of 13 and 16, supporting reports that risk is higher with early onset of menarche.<sup>[7],[26],[27],[28]</sup> Incidence of breast carcinoma was more in postmenopausal patients and age of menopause was in the range of 41 to 50 years. A similar finding of early age of menopause in Indian females in comparison to their western counterparts has been observed in the past.<sup>[29]</sup> The earlier published reports also show that the risk of breast carcinoma increases with increasing age of menopause, possibly because the women are exposed to hormones for a longer duration.<sup>[27],[28],[30]</sup>

For the diagnosis of breast carcinoma, FNAC was done in 86% of patients which is rapid and cost effective.<sup>[31]</sup> The use of core needle biopsy (CNB) and vacuum assisted biopsy with mammographic or ultrasonographic guidance is being increasingly used for non-palpable tumours.<sup>[31]</sup> Mammography is an important tool for breast carcinoma screening between 50 and 70 years, when the breast tissue content decreases and fat content increases. Moreover, mammography is neither cost effective nor easily available in developing countries.

LFTs, abdominal ultrasounds, CT scan and bone scan were done as part of a metastatic workup. Literature also supports that a complete metastatic workup is unnecessary in a majority of the patients with newly diagnosed breast carcinoma, whereas it may be indicated for specific patient categories such as those with stage III disease.<sup>[32]</sup> Clinical TNM staging is an important clinical parameter of breast carcinoma and surgery is the principle mode of therapy, while chemotherapy, radiotherapy and hormone therapy were used in the adjuvant setting. Popularity of BCS is increasing in the western world.<sup>[33],[34],[35],[36],[37],[38]</sup> The reasons supporting this theory are earlier diagnosis through mammographic screening, development of image-guided CNB and advent of state-of-the-art Radiotherapy Units.<sup>[34]</sup> MRM provides good locoregional control and still remains an important tool for managing breast cancer in India. Postoperative morbidity was seen in the form of lymphorrhoea/seroma, flap necrosis and wound infection,

which was comparable with the reports in the literature.<sup>[39],[40],[41],[42],[43],[44],[45],[46]</sup> Neoadjuvant chemotherapy was given in 64% of the patients for downstaging the disease and a majority of these cases were managed by clinical oncologist.

Our study like all other studies from India and western world indicate that IDC is the most commonly encountered histopathology.<sup>[47],[19],[21],[48],[49]</sup> A majority of the patients (45%) present with LABC in accordance with other reports from India.<sup>[4]</sup> LABC is a relatively uncommon presentation (5% - 20%) in economically developed countries due to better public awareness and availability of medical resources.<sup>[50]</sup>

## CONCLUSION

The mean age of presentation for breast carcinoma in our centre is a decade earlier compared to west. Hence, early screening clinics and mammography should be considered. Thus, there is a need for developing other cost-effective screening modalities for breast cancer in addition to propagating breast self-examination in masses for early detection. Although, BCS is gaining popularity worldwide, MRM still remains the gold standard for the management of breast carcinoma in the present circumstances in most parts of India. In view of the rising incidence of breast carcinoma and the prevailing controversies in its management, it is recommended that they should preferably be managed by surgical and medical oncologists for improvement in the patient's outcome.

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