International Surgery Journal
Ramani PA et al. Int Surg J. 2019 Oct;6(10):3626-3631
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20194415

Original Research Article

Incidence of locally advanced breast cancer in women presenting to a tertiary care center

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Received: 17 July 2019
Revised: 12 September 2019
Accepted: 13 September 2019

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ABSTRACT

Background: Trends for incidence of breast cancer are on the rise in India. However, regional specific epidemiological data for North Coastal Andhra Pradesh are inadequate. The study aims to stress upon the trends of the incidence and burden of locally advanced breast cancer in the region.
Methods: In a retrospective quantitative study, 310 in-patients of Department of General Surgery, King George Hospital diagnosed with breast cancer whose information is in the medical records covering the calendar period from May 2014 to May 2019 were studied.
Results: The number of females being admitted as in-patients for treatment of breast cancer has increased from 11.2% to 13.6% in these five years. The overall result showed that the age of breast cancer patients ranged from 28-74 years, with a mean age of 49.12±10.942. The average duration of time lag to contact with health personnel was 3.6 months for all the cases included in our study. Stage III was the most common presentation constituting 55.01% patients of the series. Most common cause for late presentation was lack of awareness (64.5%) followed by emotional reasons and cultural barriers (31.9%).
Conclusions: There is an urgent need for implementation of measures to ensure early presentation as prevention of LABC is much better than cure.

Keywords: Breast cancer, LABC, Prevention, India, Andhra Pradesh, Early diagnosis

INTRODUCTION

Breast cancer is the most frequent cancer in women worldwide.[1] In the Indian scenario, breast cancer, for the first time, has become the most common cancer in India in 2012, surpassing cervical cancer.[2] However, regional specific epidemiological data for North coastal Andhra Pradesh are inadequate. With this background, our study was done to assess the incidence, demographics, and stage at diagnosis of the disease in our tertiary care hospital and to increase awareness regarding the need for focused action.

Aim

The study aims to stress upon the burden of locally advanced breast cancer in the region of north coastal Andhra Pradesh to which our tertiary care center caters.

Objectives

- To study the trends of the incidence of breast cancer in our region.
- To estimate the burden of locally advanced breast cancer.

- To evaluate the cause of late presentation in the region.

METHODS

Study subjects

A total number of 310 in-patients of Department of General Surgery, King George Hospital diagnosed with breast cancer (at any stage of disease at diagnosis) who are in the medical records department information covering the calendar period from May 2014 to May 2019 were studied.

Study design

A retrospective quantitative study has been utilized to achieve the aim of the study. As this study was a retrospective study, no ethical issues or consent from the patient was needed.

Statistical considerations

Data entered and analyzed in MS Excel and SPSS. Categorical data will be expressed in proportions and quantitative data by means and standard deviation.

Inclusion criteria

Inclusion criteria were female in-patients primarily admitted in the General Surgery department of our hospital from May 2014 to May 2019 were included; breast cancer patients only whose details were available in the medical records department were included; primary breast cancer patients, as well as post-operative patients presenting with recurrence, were included.

Exclusion criteria

Patients who were diagnosed but declined admission in our hospital were excluded as it is an in-patient study.

RESULTS

The overall incidence of breast cancer among total female in-patients of our hospital is on the rise and followed the below trends.

The overall result showed that the age of breast cancer patients ranged from 28-74 years, with a mean age of 49.12±10.942. The highest incidence of breast cancer was noted in the age group 40-50 years, followed by 50-60 years and 30-40 years age group.

Table 1: Trends of breast cancer and in-patient numbers each year.

Period	Number of breast cancer cases among total female admissions	Percentage of breast cancer in in-patient females each year
May 2014-April 2015	49/436	11.2
May 2015-April 2016	54/457	11.8
May 2016-April 2017	59/516	11.4
May 2017-April 2018	66/529	12.4
May 2019-April 2019	82/603	13.6

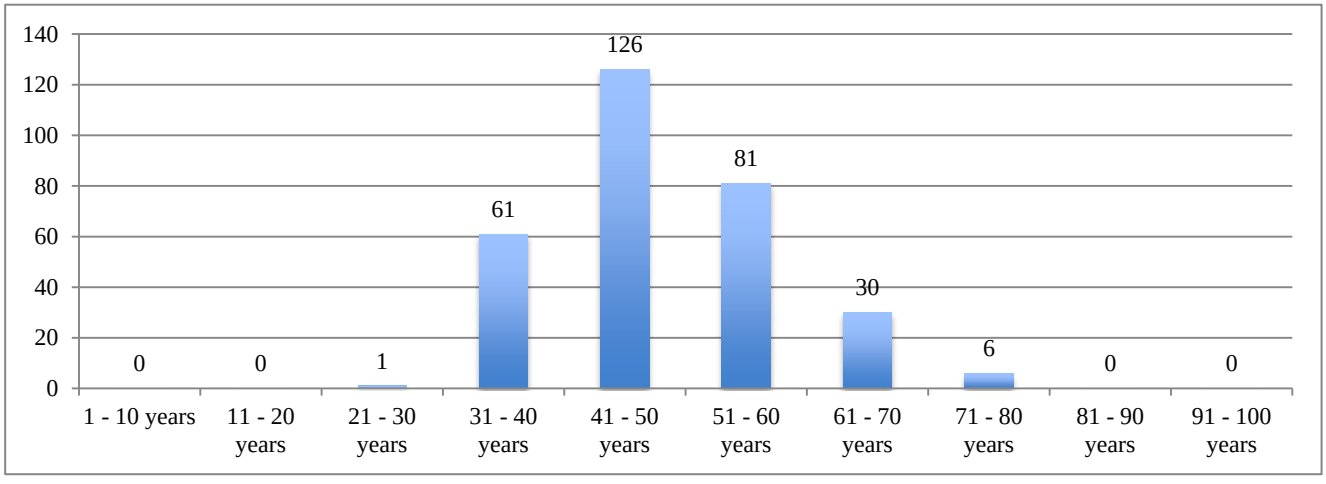

Figure 1: Age distribution of breast cancer patients in the study group.

94.6% of cases were from low socio-economic status. The rest of the study group had lower and upper middle-class families. 91.3% of patients belonged to the working class as manual labour in agriculture, constructions, sanitation, and household.

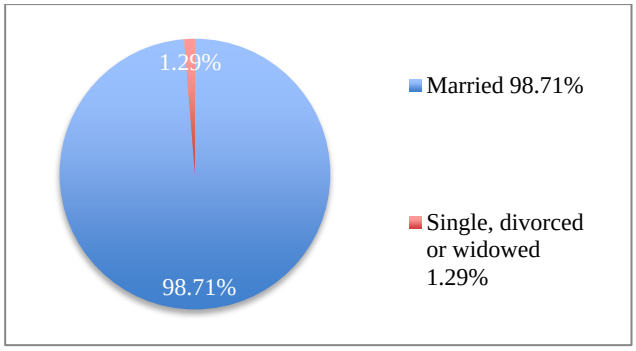

Figure 2: Marital status of patients.

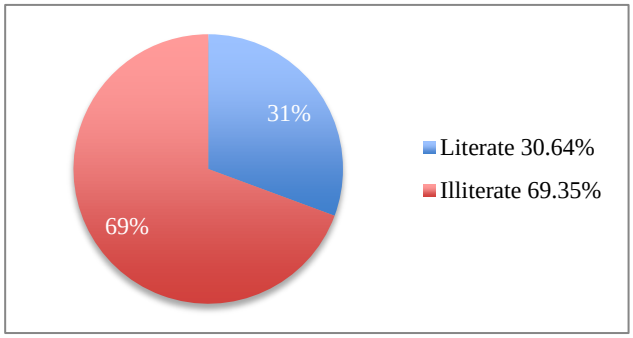

Figure 3: Literacy status of patients.

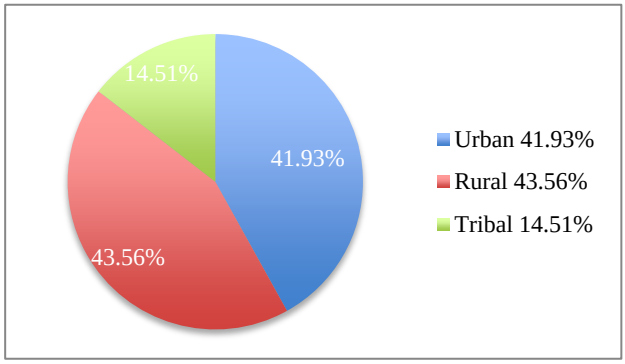

Figure 4: Ethnicity of patients.

There was a consistent late presentation in case of the tribal population because of problems in communication and outreach.

The average duration of time lag to contact with health personnel was 3.6 months for cases included in our study. Two cases even presented with a history of more than 12 months. The cause for this time-lag was evaluated and found to be as follows.

Table 2: Reasons for delay in approach to healthcare personnel.

Reason	Percentage (%)
Lack of awareness regarding breast cancer	64.5
Emotional reasons and cultural barriers to approach	31.9
Delay in referral system or evaluation	3.6

Our study had a broad spectrum of the clinical presentation of breast cancer.

Table 3: Symptoms of patients.

Clinical presentation	Percentage (%)
Lump	98.1
Pain	47.7
Nipple discharge/destruction	3.6
Lump with ulcer	27.05
Breathlessness	7.7
Headache	0.48
Bone pain	0.96
Weight loss	33.8
Chest wall recurrence	1.93

Most of the patients belonged to stage III (55.01%) at diagnosis, indicating locally advanced breast carcinoma, followed by stage II (35.4%).

Table 4: Clinical staging of patients.

T stage	%	N stage	%	M stage	%	Clinical TNM stage	Percentage (%)
T1	0.9	N0	85.04	M0	91.31	I	0.9
T2	26.3	N1	11.59	M1	8.69	II	35.4
T3	52.6	N2	2.41			III	55.01
T4	20.2	N3	0.96			IV	8.69
		pN	35.7				

Table 5: Comparison of LABC incidence in various studies.

Our study	West India[8,9]	Singapore[10]	Sub-Saharan Africa[11]	America[12]	European countries[12]
55.01%	37.5 – 38%	13.7%	>70%	8.5%	4%

As a part of evaluating the cause for late presentation, the outreach and access difficulties calculated for the study population as per their area of residence and the distance from the nearest PHC/UHC were as follows.

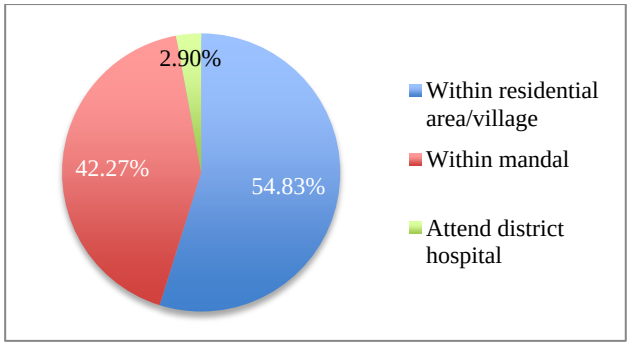

Figure 5: Distance from patient household to nearest health care center.

DISCUSSION

Our study correlates with the body of evidence available in the country. The incidence rates calculated in our study support the fact that breast cancer is increasing in North Andhra Pradesh. The increasing incidence rates each year reflected in our hospital admissions concede the projections that breast cancer cases are expected to increase by 26% by 2020 and that most of these will be seen in developing countries (Anonymous, 2009).[3]

The definition of LABC has changed over the years from inoperable at presentation to large breast tumours (>5 cms) with fixity to skin or chest wall or axillary lymph node fixity or involvement of ipsilateral internal mammary or supraclavicular lymph node.[4]

The average age at presentation was 49.12 years in our research which was slightly higher than the 43-46 years reported by Bangal et al.[5] But it correlates with the studies indicating that more than 80% of Indian patients were younger than 60 years of age.[6] It also is supported by the data from Agarwal et al, which states that in Asia, breast cancer incidence peaks among women in their forties. Our study has shown a higher incidence of locally advanced breast cancer in rural population rather than the urban population in contrast to Malvia et al.[7] All the population-based registries show a significant variation in urban and rural incidence. However, since our study is a hospital-based registry, it may be biased due to varying reference patterns and socio-economic factors as suggested by Rangarajan et al.[9] This may also be the explanation for the higher incidence of illiteracy and low socioeconomic status in our study population as the hospital is a government set up with all free services.

The stage at late presentation correlated with Meshram et al. and is much higher than that reported in contemporary studies.[13,14] The delay in diagnosis and consecutive challenges in management pose a hidden economic burden over the government as the treatment cost for breast cancer detected at stages I, II and III cost significantly much less than a stage IV disease in developing countries. A study conducted by Groot et al. established this fact with cost figures.[15] Recognising the increasing burden of cancer in India as per the GLOBOCAN and ICMR predictions, Government of India has already initiated screening programs under National Programme for Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) program, also funded through the National Health Mission in a pilot stage.[16-18] In middle-income countries like India where the availability of breast cancer screening and treatment modalities have a wide range from practically non-existent for the poor to state of the art facilities in lieu with developed nations available for the affluent, it is important to ensure that any program reaches its target population.[7]

Proper screening necessitates the presence of mammography, high coverage and participation, and effective referral systems for diagnosis and treatment.[19] Even in face of high cost burden, screening is necessary for early diagnosis in developing countries like India. Major obstacles involve high cost, lack of health care infrastructure, and awareness in women to get screened. For these reasons, the Breast Health Global Initiative (BHGI) was founded to develop feasible, cost-effective, and culturally acceptable guidelines. The guidelines constituted four levels of resources, which include basic, limited, enhanced, and maximal. The basic-level resource guideline was of breast health awareness through education and self-examination. It stressed the opportunity for an improved outcome with even a biennial clinical breast examination. The limited level resource guideline was imaging with ultrasound in addition to clinical breast examination. The third level involves mammography screening in case of opportunity or symptoms, and the maximal level guideline is at a population level. Using this stepwise approach, there is high propensity to reduce the burden of disease by implementing the levels according to their financial feasibility in low and middle-income countries.[20]

Our study emphasizes the urgent need for action and to implement the cancer screening program that the government has initiated at a national level as soon as possible. We also aim to focus on recommendations that target reducing the patient factors for late presentation which is a major contributing factor (69.8%) as per Bajpai and as high as 96.4% in our study.[21] The patient factors include emotional barriers for communication about a private part, socio-cultural problems in a predominantly patriarchal society, and lack of awareness regarding breast cancer. All these were significant in our study because of a predominantly illiterate and rural population. However, this problem is a well-recognized factor even in affluent societies, according to Singh et al.[22] Tata Memorial Hospital has been involved in a randomized controlled trial (n=150,000) which randomizes women to receive health education versus health education plus four rounds of screening using clinical breast examination performed by trained health workers. The study already shows good compliance to screening rate (70%) and down staging is evident. The

principal objectives of the study, i.e., demonstration of a reduction in incidence and mortality will, however, become evident only after the results are published.[23]

CONCLUSION

We conclude our study by accentuating once more the need to detect this breast cancer menace at an early stage and tackle it effectively to reduce the mortality and morbidity especially that which could be avoided once detected early. The need for primary prevention by protecting our population from 'westernisation' though not significant in our study, cannot be stressed enough. The adolescent girl child is the ideal point for both primary and secondary prevention strategies. The possible etiology is targetted by encouraging them to improve physical activity, opt for healthy dietary habits, avoid smoking and alcohol consumption. To get rid of unreasonable fears restricting them from approaching a health care provider at an early stage, improve awareness that a painless breast lump must be evaluated to rule out cancer and that, cancer is a treatable disease if detected at an early stage is the need of the hour. These girl children will not only be the future potential disease population but also will ensure that their relatives come into contact with the health system by sharing their knowledge. Their counterpart male child must also be counseled appropriately to avoid taboo and encourage their parent/future partner for early action. School teacher is the key to the implementation of this education. Sharing the same knowledge in colleges to young women and encouraging them to spread awareness must be another objective.

Other measures for secondary prevention include improvement of awareness regarding breast cancer by utilization of social media, television, and movie as this is a highly accepted method of communication in today's India. The role of Accredited Social Health Activist (ASHA) cannot be stressed enough if trained appropriately under the umbrella of the National Health Mission. The ASHA worker is a perfect channel to approach every woman in the country by being a female and also due to regular contact with all the families of the village. Health education, breast cancer awareness, teaching self breast examination, and encouraging the patient for a clinical breast examination in case of any abnormality are all acceptable and effective solutions once implemented at the grass root level. The availability of a surgeon or any doctor trained well enough in breast examination at all health care centers is the need of the hour. The establishment of mammography units at district hospitals will improve access and must be used conservatively to ensure cost-effectiveness of screening by performing it only in patients with high risk or the high incidence age group of 40-60 years.

The old saying holds well in this scenario 'prevention of LABC is better than cure' and all health providers, non-governmental organizations and policymakers must make a decision to achieve maximum results with the effective utilization of available resources.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. World Cancer Research Fund. Available at: https://www.wcrf.org/dietandcancer/cancer-trends/breast-cancer-statistics. Accessed on 3 June 2019.
2. Asthana S, Chauhan S, Labani S. Breast and cervical cancer risk in India: An update. Indian J Public Health. 2014;58:5-10.
3. Breast cancer in developing countries. The Lancet. 2009;374:1567-2131.
4. Singletary SE, Allred C, Ashley P, Bassett LW, Berry D, Bland KI, et al. Revision of American Joint Committee on Cancer Staging System for Breast Cancer. J Clin Oncol. 2002;20:3628-36.
5. Bangal VB, Shinde KK, Gavhane SP, Singh RK. Breast carcinoma in women-A rising threat. Int J Biomed Adv Res. 2013;4(2):73-6.
6. Khokhar, Anita. Breast Cancer in India: Where Do We Stand and Where Do We Go? Asian Pacific Organization for Cancer Prevention. 2012;13(10):4861-6.
7. Malvia S, Bagadi SA, Dubey US, Saxena, S. Epidemiology of breast cancer in Indian women. Asia-Pac J Clin Oncol. 2017;13:289-95.
8. Gedam MC, Shukla K, Ingale LY. Clinical presentation and management of locally advanced breast carcinoma. Int Surg J. 2018;5:3690-4.
9. Nair N, Shet T, Parmar V, Havaldar R, Gupta S, Budrukkar A, et al. Breast cancer in a tertiary cancer center in India-An audit, with outcome analysis. Indian J Cancer. 2018;55:16-22.
10. Tan EY, Wong HB, Ang BK, Chan MY. Locally advanced and metastatic breast cancer in a tertiary hospital. Ann Acad Med Singapore. 2005;34(10):595-601.
11. Brinton LA, Figueroa JD, Awuah B, Yarney J, Wiafe S, Wood SN, et al. Breast cancer in Sub-Saharan Africa: opportunities for prevention. Breast Cancer Res Treat. 2014;144(3):467-78.
12. Allemani C, Sant M, Weir HK, Richardson LC, Baili P, Storm H, et al. Breast cancer survival in the US and Europe: a CONCORD high-resolution study. Int J Cancer. 2013;132(5):1170-81.
13. Rangarajan B, Shet T, Wadasadawala T, Nair NS, Sairam RM, Hingmire SS, et al. Breast cancer: An overview of published Indian data. South Asian J Cancer. 2016;5:86-92.
14. Meshram II, Hiwarkar PA, Kulkarni PN. Reproductive risk factors for breast cancer: A case control study. J Health Allied Sci. 2009;8(3):1-4.

15. Gedam MC, Shukla K, Ingale LY. Clinical presentation and management of locally advanced breast carcinoma. Int Surg J. 2018;5:3690-4.
16. Groot MT, Baltussen R, Uyl-de Groot CA, Anderson BO, Hortobágyi GN. Costs and health effects of breastcancer interventions in epidemiologically different regions of Africa, North America, and Asia. Breast J. 2006;12:81-90.
17. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No.11. Lyon, France: International Agency for Research on Cancer, 2013. Available at: http://globocan.iarc.fr. Accessed on 3 June 2019.
18. Indian Council of Medical Research. Three year report of Population Based Cancer Registries, 2012-2014. Bangalore: National Centre for Disease Informatics and Research/National Cancer Registry Programme, 2013, 2016.
19. Yip CH, Smith RA, Anderson BO. Guideline implementation for breast healthcare in low- and middle- income countries: early detection resource allocation. Cancer. 2008;113(8):2244-56.
20. Tfayli A, Temraz S, Mrad RA, Shamseddine A. Breast Cancer in Low- and Middle-Income Countries: An Emerging and Challenging Epidemic. J Oncol. 2010:490631:5.
21. Bajpai J. Locally advanced breast cancer: Prevention is better than cure! Indian J Cancer 2012;49.
22. Singh S, Shrivastava JP, Dwivedi A. Breast cancer screening existence in India: A nonexisting reality. Indian J Med Paediatr Oncol. 2015;36(4):207-9.
23. Mittra I, Mishra GA, Singh S, Aranke S, Notani P, Badwe R, et al. A cluster randomized, controlled trial of breast and cervix cancer screening in Mumbai, India: Methodology and interim results after three rounds of screening. Int J Cancer. 2010;126:976-84.

Cite this article as: Ramani PA, Niharika VS, Lakhsmi BKM, Jahnavi S, Reddy GVS. Incidence of locally advanced breast cancer in women presenting to a tertiary care center. Int Surg J 2019;6:3626-31.