ORIGINAL ARTICLE

RETROSPECTIVE AND PROSPECTIVE STUDY OF STAGE PRESENTATION OF CARCINOMA BREAST IN TERTIARY HEALTH CARE CENTRE, INDORE

Sonia Moses[1], Sapna Shukla[2], Imran Khan Mansoori[3]

HOW TO CITE THIS ARTICLE:
Sonia Moses, Sapna Shukla, Imran Khan Mansoori. "Retrospective and Prospective Study of Stage Presentation of Carcinoma Breast in Tertiary Health Care Centre, Indore". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 17, April 27, 2015; Page: 2493-2500.

ABSTRACT: Breast cancer is most common cause of death in middle aged women today in most of developed cities of India, and up to some extent in rural areas. Significant change is observed during last two decades in distribution of ca breast in India. In this paper, our proposed work focuses on identifying stage of ca breast along with age at which patient is diagnosed as ca breast. This paper also analyzes ca breast ratio for rural and urban population. Then we also tried to find out menstrual status of patients and chief complaints associated with ca breast patients at that particular stage. **AIMS OF THE STUDY:** The aim of this paper is to document the patient characteristics, stage at presentation of breast carcinoma. To identify specific age group and distribution of ca breast in females. To estimate the disease load on the community. **SETTINGS & DESIGN:** This was retrospective and prospective study n=400 cases of carcinoma breast. **METHODS & MATERIALS:** Only FNAC or biopsy proven cases was included in the study. Patients were evaluated in reference to the risk factors i.e. age, menstrual history, breast feeding, OCP/HRT, H/O other malignancy and stage of presentation at the time of diagnosis. For proper staging triple assessment was done, triple assessment included clinical examination, imaging and histopathological examination. Metastatic work done by using LFTs, USG abdomen & chest, X-ray chest & spine and bone scan/CT brain if needed. **RESULTS & CONCLUSION**: There is significant difference in age at the time of diagnosis and stage distribution of the patients. Mean age of presentation is 40 years, which is ten years earlier as compared to other studies. Bulk of the patients around 55% fell between 30-50 years age group. In stage presentation, maximum patients came under stage II which was 45%,while there were 38% of patients in stage III, 16% patients were fell in stage IV, only 1% patients were found in stage I and none of pt were diagnosed under stage 0. Lymph node metastasis was found in 63% of patients. In view of menstruation 67% of pts were postmenopausal, 18% perimenopausal and 15% were menstruating. According to location 66.5% patients were from rural and 33.5% belong to urban area. There is significant difference in age of distribution and stage of presentation of carcinoma breast, which indicates impact of risk factors and awareness towards the carcinoma breast in our developing country.

KEYWORDS: Stage at presentation, carcinoma breast.

INTRODUCTION: The incidence of breast cancer is rising in every country of the world especially in developing countries such as India. Breast cancer accounts for about one-fourth of all cancers in Indian women and about half of all cancer-related deaths. With the exception of Chennai, all urban population-based registries in India reported breast cancer as the most

common female malignancy over the years 2000–2001. Data from all urban and rural population-based cancer registries in India suggest a rising incidence of breast cancer in India. Yet, the age-adjusted rates reported from various urban registries range from 24.8 to 33.4 per 100,000, which is about one-third the incidence reported from Western countries such as the United States (California SF: NH White, 109.6 per 100,000) and Uruguay (Montevideo, 114.9 per 100,000). The minimum age-adjusted rate reported from the only rural population-based cancer registry in India is even lower, at a mere 7.2 per 100,000 and is somewhat similar to the incidence reported from other developing countries, such as The Gambia and Jiashan, China.

In India, breast cancer incidence peaks among women 45–50 years of age. In general prognosis of carcinoma breast seems to be based on dynamic interplay between the anatomic extent of cancer when it is first diagnosed and its growth potential i.e. aggressiveness or virulence on one side versus the degree of immuno-competence of the host and appropriate early treatment on the other side. The treatment modality of carcinoma breast depends upon stage of carcinoma at the time of presentation.

Tumor-Node-Metastasis (TNM) Stage	Distribution		
	Mumbai (%)	Trivandrum (%)	Chennai (%)
I	7.8	4.4	0.1
II	57.4	42.3	23.0
III	28.9	40.5	52.0
IV	5.9	12.8	24.0

Table 1: Stage of breast cancer at presentation[1]

LITERATURE REVIEW: In India, the average age of developing a breast cancer has undergone a significant shift over last few decades. 25 years back, out of every 100 breast cancer patients, 2% were in 20 to 30 years age group, 7% were in 30 to 40 and so on. 69% of the patients were above 50 years of age. Presently, 4% are in 20 to 30 yrs age group, 16% are in 30 to 40, 28% are in 40 to 50 age group. So, almost 48% patients are below 50. An increasing numbers of patients are in the 25 to 40 years of age, and this definitely is a very disturbing trend.[2] The complete details of cancers in various cities like Mumbai, Delhi, Bangalore, Bhopal, Kolkata, Chennai, Ahmedabad etc. can be found on the PBCR (Population Based Cancer Registry). Breast cancer accounts for 25% to 32% of all female cancers in all these cities. This implies, practically, one fourth (or even approaching one thirds) of all female cancer cases are breast cancers.[3] The most important reason being lack of awareness about breast cancer and screening of the same; more than 50% patients of breast cancer present in stages 3 and 4, and outcome is not as good as earlier stages, however aggressive the treatment may be. The western nations have achieved a steadily improving and good survival mainly because of screening of breast cancer. India needs to reach this achievement, and it is only with aggressive promotion of screening and awareness and proper treatment that India will achieve this; and will take at least a few decades to reproduce similar results.[4,5] Cancers in the young, tend to be more aggressive. Many of these cancers are HER2 positive and ER/PR negative, or HER2/ER/PR all three negative, and they have

a worse prognosis than those who have ER/PR positive tumors. So all the more reason to catch these cancers early, since chances of long survival decrease fast with increasing stage of these tumors.[6] Since the numbers of cases are rising, younger women are getting affected, most are presenting only after symptoms develop (so usually stage 2B and beyond, rarely earlier stage) and we cannot prevent this cancer, all we can do is to detect this cancer early. Screening is the way to go. Breast cancer screening means checking a woman's breasts for cancer before there are signs or symptoms of the disease. A mammogram is an X-ray of the breast. Mammograms are the best way to find breast cancer early when it is easier to treat and before it is big enough to feel or cause symptoms. Having regular mammograms can lower the risk of dying from breast cancer.[7] The Madras Metropolitan Tumor Registry reported survival rates of 80, 58, and 48% at 1 year, 3 years, and 5 years, respectively. The 5-year overall survival rate for patients treated and followed at SGPGIMS Lucknow is 62%, with the 5-year survival rate of 90% for stage I, 78% for stage II, 57% for stage III, and 22% for stage IV patients. The overall 10-year estimated survival of SGPGIMS Lucknow patients was 35%; with a 10-year survival rate of 75% for stage I, 55% for stage II, 35% for stage III, and 5% for stage IV patients.[8] Breast cancer is the most common cause of death in middle aged women in western countries. In 2010, approximately one and three- quarter million new cases were diagnosed worldwide. The incidence is expected to continue rising as the population ages although more slowly than previously thought as the use of HRT has reduced in the USA and UK. Breast cancer continues to be the second leading cause of cancer related deaths, second to lung cancer, with approximately 40,000 deaths caused by breast cancer annually. In 2010, a total of 209,060 cases of invasive breast cancer and almost 54,010 cases of in situ breast cancer were diagnosed in United States.[9]These facts emphasize the magnitude of the breast cancer problem and stress the importance of determining epidemiological factors responsible for its development and of trying to isolate any preventive measures that might reduce its incidence. But breast cancer appears to be due to a constellation of epidemiologic factors rather than to single one, including genetic predisposition carcinogen exposure and various adverse personal and demographic conditions, therefore, it would seem highly improbable that anyone epidemiological factor of overwhelming importance in breast cancer will be determined such as single factor as smoking in the etiology of lung cancer, thus although there are some preventive measures that could be of importance, most of etiologic factors in breast cancer are beyond the control of physician and patients so the best way to reduce the impact of carcinoma breast is early diagnosis and staging and treatment according to it, at earliest possible moment.[10] There are a number of gross and histological parameters that have been used to predict prognosis and estimate survival in patients with breast cancer including number of axillary nodes involved with tumor, histology of nodes, size and contour of primary lesion, tumor differentiation, extent of lymphocytic infiltration, growth rate, renin secretion, lipid contents, necrosis and lymphatic and blood vessel invasion.[11] The treatment modality of carcinoma breast depends upon stage of carcinoma at the time of presentation. Cancer staging is representative of the anatomical extent or advancement of cancer when diagnosed. The size and configuration of ordinary clinically invasive cancer can be used as an indicator of the probability of auxiliary metastasis and survival, thus the stage of breast cancer and prognosis for patient depends in part on the largest diameter of primary tumor; however, size estimated on clinical

judgment is subject to a considerable amount of error. The measurement modality is not specified in available literature but the best estimate of tumor size is accepted to be the histological measurement which is not available until after the initial surgery, management is therefore planned using the size of tumor at imaging/clinical palpation.[12] Celsus recognized the value of operations for early breast cancer in his early Roman writings of the first century A.D. A translation notes: "None of these can be removed but the cacoethes [early lesion], the rest are irritated by every method of cure. The more violent the operations are, the angrier they grow.

METHODS: All biopsy/ FNAC proven cases of Ca breast in females.

WORKING PROFORMA:

WORKING PROFORMA

Name

Age Sex (1) M (2) F

Menstrual history

Clinical features

Examination

Histo-pathological findings

Address

Table 1

STAGE GROUPING FOR BREAST CANCER:

ANATOMICAL STAGE	PROGNOSTIC GROUP		
0	Tis	N0	M0
IA	T1	N0	M0
IB	T0	N1	M0
	T1	N1	M0
IIA	T0	N1	M0
	T1	N1	M0
	T2	N0	M0
IIB	T2	N1	M0
	T3	N0	M0
IIIA	T0	N2	M0
	T1	N2	M0
	T2	N2	M0
	T3	N1	M0
	T3	N2	M0

IIIB	T4	N0	M0
	T4	N1	M0
	T4	N2	M0
IIIC	Any T	N3	M0
IV	Any T	Any N	M1

Table 2: Stage grouping of carcinoma breast

STATISTICS: This study was carried out on 400 patients at Tertiary Health Care Center, Indore (Madhya Pradesh) to find out different epidemiological trends of Carcinoma Breast in this geographical region of India. The findings of the study are on the following parameters:-

- Age group distribution of Carcinoma Breast patients.
- Stagewise distribution of patients of Carcinoma Breast.
- Menstrual status wise distribution of patients.
- Area wise distribution patients.
- Complaint-wise distribution of patients.
- Axillary Lymph node wise distribution of patients.
- Histopathological finding-wise.

Age group distribution of Carcinoma Breast patients. This group includes patients below the age of 20 years and more than 70 years of age. The findings are:-

Sl. No.	Age Group (Years)	No. of Cases	Percentage
1.	< 20	4	1
2.	20-30	11	2.5
3.	31-40	101	25
4.	41-50	117	29.2
5.	51-60	85	21.25
6.	61-70	40	10
7.	>70	42	10.5

Table 3: Age group distribution of carcinoma breast patients

Stage has been grouped into five stages from 0 to IV and the findings are:

Sl. No.	Stage	Percent of Patients (%)
1.	0	0
2.	I	1
3.	II	45
4.	III	38
5.	IV	16

Table 4: Stage wise distribution of the Patients

Menstrual status of the patients analyzed is:

Sl. No.	Menstrual Status	Percentage of cases
1.	Menstruating	15
2.	Perimenopausal	18
3.	Postmenopausal	67

Table 5: Menstrual status wise distribution

Area was divided into Rural and Urban regions and the findings are:

i. Rural: 66.5%.
ii. Urban: 33.5%.

Complaint- wise findings are:

Sl. no.	Complain	Percentage
1.	Breast Lump	98
2.	Mastalgia	58.2
3.	Nipple discharge	10.25
4.	Breast skin involvement	2

Table 6: Complaint wise distribution

Axillary lymph node involvement is:

Axillary L.N. Status	Percentage of Patients
Positive	63%
Negative	27%

Table 7: Axillary lymph-node wise distribution

Histo-pathological finding wise distribution:

Histo-pathological Type	Percentage of Patients
Infiltrating duct carcinoma gr II	75%
Infiltrating duct carcinoma gr III	20%
Poorly differentiated duct ca.	2%
Lobular carcinoma	2.5%
Mixed (Ductal+Lobular)	0.5%

Table 8: Histopathological distribution

RESULTS AND CONCLUSION: Carcinoma of Breast is the most common site-specific cancer in women & is the leading cause of death from cancer for female 35-50 years of age. Breast Cancer accounts for 32% of all female cancer and is responsible for 19% of the cancer related deaths is women.

Worldwide, Breast Carcinoma is an epidemiologic problem. In India, breast cancer is second most common cancer in the females. In our study various measuring modalities were evaluated.

1. In this study most common age group of patients presenting with malignant breast lump was 35-50 years (50% cases).
2. In our study all carcinoma breast patients were married and most (98%) were multiparous.
3. In our study most of the carcinoma breast patients (67%) were postmenopausal at the time of presentation.
4. In our study most common presenting complaint is lump in breast (98%).
5. In our study axillary lymph nodes were clinically palpable in 63%.
6. In our study the most common stage of carcinoma breast at the time of presentation was stage II (45%).
7. In our study the most common histological variety of carcinoma breast patients was infiltrating ductal carcinoma grade II (75%) & GDRADE III(20%), POORLY DIFFERENTIATED DUCTAL CARCINOMA (2%), LOBULAR CARCINOMA (2.5%) and MIXED(lobular+ ducal) was 0.5%.

REFERENCES:

1. The Tata Memorial Hospital Registry (1995), the Hospital Cancer Registry Trivandrum (1996) and Cancer Institute Chennai.
2. Time Trends in Cancer Incidence Rates 1982-2005, National Cancer Registry Programme (Indian Council of Medical Research), Bangalore, 2009. www.breastcancerindia.net.
3. Gaurav Agarwal MS, DNB, PDC (Endocr Surg), P. V. Pradeep MS, DNB, MRCS Ed, Vivek Aggarwal MS, Cheng-Har Yip MD FRCS (Glasg), FRCS Ed, Polly S. Y. Cheung FRCS, FRACS, FACS. World Journal of Surgery May 2007, Volume 31, Issue 5, pp 1031-1040.
4. Nicholas J. Petrelli, Eric P. Winer, Julie Brahmer, Sarita Dubey, Sonali Smith, Charles Thomas, Linda T. Vahdat, Jennifer Obel, Nicholas Vogelzang, Maurie Markman, John W. Sweetenham, David Pfister, Mark G. Kris, Lynn M. Schuchter, Raymond Sawaya, Derek Raghavan, Patricia A. Ganz,and Barnett Kramer Clinical Cancer Advances 2009: Major Research Advances in Cancer Treatment, Prevention, and Screening—A Report From the American Society of Clinical Oncology, Journal of clinical oncology, Volume 27/ Number 35/December 10, 2009. pp- 6052-6069.
5. Lisa Diller, Cheryl Medeiros Nancarrow, Kitt Shaffer, Ursula Matulonis, Peter Mauch, Donna Neuberg, Nancy J. Tarbell, Heather Litman and Judy Garber. Breast Cancer Screening in Women Previously Treated for Hodgkin's disease: A Prospective Cohort Study. American Society of Clinical Oncology, April 15, 2002. PP- 2085-2091.

6. U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999–2010 Incidence and Mortality Web-based Report. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2013.
7. Nanda kumar, A. Anantha, N. and Venugopal, T.C, Sankaranarayanan R, Thimmasetty K and Dhar M: Survival in breast and cervical cancer- A population Based study in Bangalore, India. Int J of Cancer, 1995; 60, 593-96.
8. Norman S. Williams, Christopher J.K. Bulstrode, P. Ronan O' Connell, Bailey and Love's Short Practice of Surgery, 26 Edition, Feb 18, 2013 Page 808.
9. Bonadonna G, Va1agussa P: Combined modality approach for high risk breast cancer: The Milan Cancer Institute Experience. Surg. Oncol Clin North America.1995; 4:701.
10. Meden H et al. A clinical mammographic, sonographic and histologic evaluation of breast cancer. International Journal of Gynaecology and Obstetrics 1995: 4 (2): 193-199.
11. Agarwal, G., & Ramakant, P. (2008). Breast Cancer Care in India: The Current Scenario and the Challenges for the Future. Breast Care, 3(1), 21–27.
12. Haagensen CD: Diseases of the breast, 3rd ed., United States, Philadelphia: Saunders, 1986 pp-1050.

AUTHORS:

1. Sonia Moses
2. Sapna Shukla
3. Imran Khan Mansoori

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of General Surgery, M. G. M. Medical College, Indore, M. P.
2. Assistant Professor, Department of General Surgery, M. G. M. Medical College, Indore, M. P.
3. Senior Resident, Department of General Surgery, M. G. M. Medical College, Indore, M. P.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Sonia Moses,
9-B, Swarn Vatika,
Tilak Nagar, Indore – 452001.
E-mail: drsoniamoses@gmail.com

Date of Submission: 13/04/2015.
Date of Peer Review: 14/04/2015.
Date of Acceptance: 16/04/2015.
Date of Publishing: 22/04/2015.