DOI: 10.18410/jebmh/2015/924

ORIGINAL ARTICLE

PREVALENCE OF BREAST CANCER IN PATIENTS ATTENDING CIMS, BILASPUR, C.G.: A TERTIARY HOSPITAL BASED STUDY

R. C. Arya[1], M. K. Minj[2], Amit Kumar Tiwari[3], Amit Kumar Bhardwaj[4], Digvijay Singh[5]

HOW TO CITE THIS ARTICLE:
R. C. Arya, M. K. Minj, Amit Kumar Tiwari, Amit Kumar Bhardwaj, Digvijay Singh. "Prevalence of Breast Cancer in Patients attending CIMS, Bilaspur, C.G.: A Tertiary Hospital Based Study". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 40, October 05, 2015; Page: 6777-6782,
DOI: 10.18410/jebmh/2015/924

ABSTRACT: INTRODUCTION: Cancer of the breast is among the commonest of human cancers throughout the world. The incidence of breast cancer in Indian women is much lesser than the counterparts in industrialized nations. **OBJECTIVE:** This study is designed to find out prevalence of breast cancer in patients attending Chhattisgarh Institute of Medical Sciences (CIMS), a teaching institute in Bilaspur Chhattisgarh. **MATERIAL AND METHODS:** The biopsy samples of all patients were received and studied in department of pathology. A retrospective series study was conducted on 316 cases of breast tumours, reported from March 2003 to August 2015. **RESULTS AND OBSERVATIONS:** Mean age of the subjects is 45 years with standard deviation 12.06 years ranging from 12 to 75 years. Among 316 neoplastic lesions, 198 (62.66%) were found benign, 02 (0.63%) borderline and 116 (36.71%) were malignant. Among histological types of malignant breast tumours, infiltrating duct carcinoma dominated, and is followed by medullary carcinoma. **CONCLUSION:** Mean age of our female breast cancer patients was found to be lower compared to the western world, with an average difference of one decade. A majority of the patients were from a rural background and had a longer duration of symptoms compared to urban patients. Lump in the breast was a dominant symptom. Familial breast cancer was uncommon.

KEYWORDS: Breast lesions, CIMS, Fibroadenoma, Infiltrating duct carcinoma, Malignant.

INTRODUCTION: Breast cancer is the most frequently diagnosed cancer in women worldwide. About half of these cases occurred in economically developing countries. Breast cancer awareness programs are more concentrated in the cities and have not reached the remote and rural parts of the country.[1,2] India is a sub-continent with wide ethnic, cultural, religious, and economic diversity and variation in the health care infrastructure. The health care facility pattern is heterogeneous, with numerous regions where the benefits of the awareness, early diagnosis, and multidisciplinary treatment programs have not reached. Breast lesions are one of the major causes of surgical problems in females and present with marked variation in their histological types. The clinical presentation of breast diseases can be varied, including breast lump, breast "lumpiness," nipple discharge, pain and redness of the overlying skin, or axillary lymph node enlargement. Women often do not present for medical care early enough due to various reasons such as illiteracy, lack of awareness, and financial Constrains. It is hardly surprising that the majority of breast cancer patients in India are still treated at locally advanced and metastatic stages.[2,3] Most palpable breast masses are benign, and less than 30% of women with palpable masses have a diagnosis of cancer.[4,5,6] Over 100,000 new breast cancer patients are estimated

DOI: 10.18410/jebmh/2015/924

to be diagnosed annually in India.[1,7] Approximately 4% of breast cancers present with a palpable mass without mammographic or ultrasonographic evidence of the disease.[8]

The rise in incidence of 0.5–2% per annum has been seen across all regions of India and in all age groups but more so in the younger age groups (< 45 years).[9] Breast carcinoma ranks first among the malignant tumours affecting females in many parts of the world.[10,11,12] There is a wide variation in the spectrum of breast diseases and the epidemiology of breast carcinoma in various countries or ethnic groups.[13,14,15]

MATERIAL AND METHODS: This hospital based case control study was carried out during the period between March 2003-August 2015. This case-series study has been carried out on 316 patients who had undergone surgical lumpectomy or mastectomy. Samples were analysed in the Pathology department of CIMS Bilaspur, a tertiary centre of Chhattisgarh. These were mostly referred from Surgery department of CIMS Bilaspur, a tertiary centre of Chhattisgarh. The data was retrieved from the record files of Pathology department. The acquired data was analysed using the descriptive statistics. Breast tumors are broadly divided into three major groups including benign, borderline and malignant tumours, table-1.

Age of the patients and their histopathological diagnosis were recorded. Patients were divided into seven age groups, table 2. The specimens were received in 10% neutral buffered formalin, stained by H & E stain processed in tissue processors and studied under routine light microscopy. All the data was collected and tabulated as per their histopathological types including benign and malignant and their percentage.

The neoplastic lesions contributed 316 cases in which 198 lesions were benign dominated by fibroadenoma followed by benign phyllodes tumour. Malignant lesions contributed 118 cases dominated by infiltrating duct carcinoma and followed by medullary carcinoma table-3.

RESULTS AND OBSERVATION: In a total of 316 neoplastic lesions comprised 198 (62.66%) benign, 2 (0.63%) borderline and 118 (36.71%) malignant tumours, table-1. The commonest age group affected in malignant lesions was 40 to 49 years followed by 50 to 59 years. The youngest patient was 18 years old and the oldest was 75 years old table-2.

Histological Classes	Benign Tumors	Borderline Tumors	Malignant Tumors	Total
All types	(n =198)	(n=02)	(n = 116)	**316**

Table 1: Frequency of benign, borderline and malignant breast tumours

Age (years)	No. of Cases (Benign)	Percentage	No. of Cases (Malignant)	Percentage	Total number of cases
<20	63	31.81%	1	0.85%	64
20 – 29	78	39.40%	2	1.70%	80
30 – 39	37	18.69%	19	16.10%	56
40 – 49	16	8.08%	35	29.67%	51

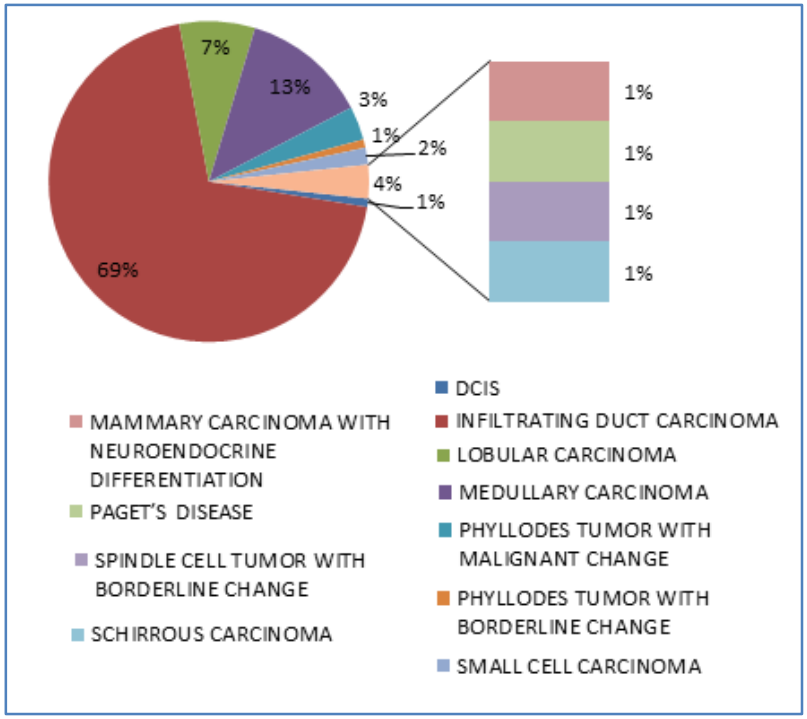
DOI: 10.18410/jebmh/2015/924

50 – 59	2	1.01%	28	23.72%	30
60 – 69	2	1.01%	11	9.32%	13
>/=70	0	0.00%	22	18.64%	22
Total	**198**	100.00%	**118**	100.00%	**316**

Table 2: Age wise distribution of cases of neoplastic lesions (n=316)

Types of malignant tumors	No. of Cases	Percentage
DCIS	1	0.85%
Infiltrating duct carcinoma	82	69.46%
Lobular carcinoma	9	7.63%
Medullary carcinoma	15	12.73%
Phyllodes tumor with malignant change	4	3.38%
Phyllodes tumor with borderline change	1	0.85%
Small cell carcinoma	2	1.70%
Mammary carcinoma with neuroendocrine differentiation	1	0.85%
Paget's disease	1	0.85%
Spindle cell tumor with borderline change	1	0.85%
Schirrous carcinoma	1	0.85%
Total	**118**	**100%**

Table 3: Distribution of various types of malignant breast tumours (n=118)



Graph 1: Distribution of various types of malignant breast tumours (n=118)

DOI: 10.18410/jebmh/2015/924

The malignant tumours were divided into two groups namely carcinoma and sarcoma. The carcinoma divided into, DCIS, infiltrating duct carcinoma, medullary carcinoma, lobular carcinoma, Small cell carcinoma, mammary carcinoma with neuroendocrine change and Paget,s disease. The Infiltrating Duct Carcinoma were maximum in number 82/118; 69.46%), followed by Medullary carcinoma (15/118; 12.73%).

Frequency pattern of different types and subtypes of malignant breast neoplasms (n=118) is shown in table-3. Among all the malignant lesions (n=118), infiltrating duct carcinoma is at the top (82/118; 69.46%), followed by Medullary carcinoma (15/118; 12.73%). The commonest borderline tumour was Phyllodes tumour with borderline change.

DISCUSSION: This analytical study was undertaken to find out the prevalence of breast cancer attending a tertiary care hospital in Bilaspur, Chhattisgarh, a tribal belt of Central India. During the study period from January 2003 to August 2015 total surgical biopsy specimens received at department of pathology were 3858, in which malignant cases were 732 (18.98%), and benign cases were 3126 (81.02%). Out of total biopsies 118 (3.06%) cases found breast malignancies and 2 cases were having borderline changes. The percentage of breast malignancy (including borderline cases) among overall malignancies is 16.12% (118/732).

The age of patients presenting with breast malignancy varied from 18 to 75 years. Present study shows the highest incidence of breast lesions between 20 to 50 years of age and it correlates with other study conducted in India.[16] Mean age at the diagnosis was 45 years, which is less as compared to that in the western literature where the mean age is 54 years.[17] In our study neoplastic lesions were 316 and it contained 62.66% (198/316) benign, 36.71% (116/316) malignant and 0.63% (2/316) borderline cases. The commonest breast cancers encountered was infiltrating duct carcinoma (69.46%), followed by medullary carcinoma (12.73%), lobular carcinoma (7.63%), Phyllodes tumour (with borderline and malignant changes together) (4.23%) and small cell carcinoma (1.70%). The present study, and other studies in India and the reports from western world also indicates that infiltrating duct carcinoma is the most commonly encountered histopathology.[18,19,20,16,21,22] Other rare malignant tumours encountered were mammary carcinoma with neuroendocrine differentiation, schirrous carcinoma, spindle cell tumour with borderline change and premalignant lesion DCIS (0.85% each).

Most of the patients presented at advanced stages with axillary node metastasis. A combination of many factors seems responsible for this late stage of detection. These include lack of awareness about the disease resulting in few women following self-breast examination or opting for a periodic examination by a healthcare worker or mammography for breast cancer screening. Even after detecting an abnormality such as a lump, the visit to a doctor for diagnosis and treatment is postponed substantially, as the initial manifestations – lumps, etc. – are not associated with pain or other troublesome symptoms. Inadequate staff and diagnostic facilities at the peripheral/ community health centers close to a woman's home act as a deterrent from seeking specialist advice. That may mean traveling long distances, and substantial expenditure on transportation and professional fees. Lack of governmental or nongovernmental support for screening, diagnosis, and treatment costs is another major deterrent in getting timely advice and treatment.

CONCLUSION: According to this study breast cancers are common in age group of 40 to 49 years and patients presented with advanced stages in our area. Among the histological types of breast cancers infiltrating duct carcinoma is predominant type, followed by medullary carcinoma. We have concluded this study in order to gain insight about the overall prevalence of breast diseases in our settings.

REFERENCES:

1. Agarwal G, Pradeep PV, Aggarwal V, Yip CH, Cheung PS: Spectrum of breast cancer in Asian women. World J Surg 2007; 31: 1031–40.
2. Chopra R: The Indian scene. J Clin Oncol 2001; 19 (18 suppl): 106S–111S.
3. Aggarwal V, Agarwal G, Lal P, Krishnani N, Mishra A, Verma AK, Mishra SK: Feasibility study of safe breast conservation in large and locally advanced cancers with use of radiopaque markers to mark. pre-neo adjuvant chemotherapy tumor margins. World J Surg 2007, Nov 21.
4. Amin TT. Al-Mulhim AR. Chopra R. Histopathological patterns of female breast lesions at secondary level care in Saudi Arabia. Asian Pac J Cancer Prev. 2009; 10: 1121–6.
5. Hisham AN, Yip CH. Spectrum of breast cancer in Malaysian women: Overview. World J Surg. 2003; 27: 921–3.
6. Kuraparthy S. Reddy KM. Yadagiri LA. Yutla M. Venkata PB. Kadainti SV et al. Epidemiology and patterns of care for invasive breast carcinoma at a community hospital in Southern India. World J SurgOncol. 2007; 5: 56.
7. Nandakumar A, Anantha N, Venugopal TC, Sankaranarayanan R, Thimmasetty K, Dhar M: Survival in breast cancer: a population-based study in Bangalore, India. Int J Cancer 1995; 60: 593–6.
8. Beyer T. Moonka R. Normal mammography and ultrasonography in the setting of palpable breast cancer. Am J Surg. 2003; 185: 416–9.
9. Murthy NS, Agarwal UK, Chaudhry K, Saxena S: A study on time trends in incidence of breast cancer – Indian scenario. Eur J Cancer Care 2007; 16: 185–6.
10. Chaudhry MA. Hayward JL. Buibrook RD et al. A comparison of epidemiological characteristics in breast cancers patients and normal females in Great Britain and Japan: results of prospective study Breast Lancer Res Treat 1991: 18(Suppl I): S19-22.
11. Ellis H. Cox PJ Breast problems in 1000 consecutive referrals to surgical out patients. Postgrad. Med. J. 1984: 60: 653-66.
12. Yonernoto R. Breast cancer in Japan and United States, epidemiology, hormone receptors, pathology and survival. Arch Surg 1980: 115 1056-62.
13. Black WC. Bordin GM. Varsa LW et al. Histologic comparison of mammary carcinomas among a population of Southwestern American. Indian Spanish American and Anglo females. Am J ClinPathol 1979: 71 42-5.
14. Lin TM. Chen KP. Mac Mohon B. Epidemiologic characteristic of cancer of breastin Taiwan. Cancer 1971: 27: 1497-1504.
15. Mahboubi E. Epidemiology of cancer ts Saudi Arabia. 1975-1985 Ann Saudi Med 1987: 7:265-6.

DOI: 10.18410/jebmh/2015/924

16. Hussain MA. Ali S. Tyagi SP. Reza H. Incidence of cancer breast at Aligarh. J Indian Medical Assoc 1994; 92: 296-7.
17. Yancuek R. Ries IG. Yates JW. Breast cancer in aging women A population based study of contrasts in stage, surgery and survival Cancer. 989: 63976-81.
18. Ahn SH. Clinical characteristics of Korean breast cancer patients in 1998. The Korean Breast Cancer Society. J Korean Med Sci 2000; 114: 143-45.
19. Goel A. Bhan CM. Srivastava KN. Five year clinicopathological study of breast cancer. Indian J Med Sci 2003; 57: 347-9.
20. Harirchi I. Ebrahimi M. Zamani N. Jarvandi S. Montazeri A. Breast cancer in Iran: a review of 903 case records. Public Health 2000; 114: 143-5.
21. Jain SB. Jain I. Shrivastava J. Jain B. A clinicopathological study of breast lumps in patients presenting in surgery OPD in a referral hospital in Madhya Pradesh, India. Int. J. Curr. Microbiol. App. Sci 2015-4-8: 919-923.
22. Seymour I. Schwartz. Breast In. Principles of Surgery. 7th Edition. McGraw-Hill. 1999. p. 564.

AUTHORS:

1. R. C. Arya
2. M. K. Minj
3. Amit Kumar Tiwari
4. Amit Kumar Bhardwaj
5. Digvijay Singh

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor & HOD, Department of Pathology, CIMS.
2. Associate Professor, Department of Pathology, CIMS.
3. Assistant Professor, Department of Pathology, CIMS.
4. Demonstrator, Department of Pathology, CIMS.
5. Demonstrator, Department of Pathology, CIMS.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. R. C. Arya,
Associate Professor,
Department of Pathology,
Chhattisgarh Institute of Medical Sciences,
Bilaspur.
E-mail: aryan_ramesh2004@yahoo.co.in

Date of Submission: 21/09/2015.
Date of Peer Review: 21/09/2015.
Date of Acceptance: 24/09/2015.
Date of Publishing: 01/10/2015.