CLINICO-PATHOLOGICAL EVALUATION OF PATIENTS OF EARLY BREAST CANCER ATTENDING TERTIARY CARE INSTITUTE: A STUDY FROM CENTRAL INDIA

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ABSTRACT

Background: According to the International Agency for Research on Cancer's (IARC) World Cancer Report, cancer rates are expected to rise at an alarming rate over the world. In the year 2020, cancer rates could rise by 50%, resulting in 15 million new cases. Breast cancer is the most common cancer in women worldwide, and it is also the second greatest cause of cancer death in women (after lung cancer).

Aims and Objectives: To assess individuals with early breast cancer who are undergoing treatment at a tertiary care facility.

Materials and Method: In the current trial, a total of 100 individuals were enrolled. All of the cases were first assessed clinically. A full history of the current disease, prior history, history of risk factors (age at menarche, family history, menopausal status), and a thorough physical examination were all part of the clinical evaluation. Both the breasts and the axillae were examined and palpated during the local examination. To rule out any symptoms of distant metastases, a systemic examination was performed. The disease was clinically staged based on these findings, using the AJCC classification system. Following a clinical evaluation, the patient was subjected to diagnostic, staging, and fitness tests. FNAC or biopsy, as well as Mammography, were used as diagnostic tests. When the lump was palpable, FNAC was performed quickly, but when the mass was not palpable, a USG-guided or mammography-guided localised biopsy was performed.

Results: Seventy-one percent of the patients were between the ages of 41 and 60. Patients were found to be postmenopausal in 56 percent of cases, premenopausal in 28 percent, and perimenopausal in 16 percent. Ninety percent of the patients had two or more children, according to the findings. It's worth noting that just 28% of patients who had an early full-term pregnancy developed breast cancer, compared to 72% of women who were pregnant between the ages of 21 and 30 years.

Conclusion: As a result, we infer that patients with breast cancer who visited a tertiary care facility were multiparous, postmenopausal females between the ages of 41 and 60. Infiltrating Duct Carcinoma was the most prevalent histological type found, with tumour sizes ranging from 2 to 4 cm and grades II and III tumour types, with ER/PR positivity in 64% of patients.

Keywords: breast cancer, Infiltrating Duct Carcinoma, parity

Introduction

According to the International Agency for Research on Cancer's (IARC) World Cancer Report, cancer rates are expected to rise at an alarming rate over the world[1]. In the year 2020, cancer rates could rise by 50%, resulting in 15 million new cases. Breast cancer is the most common cancer in women worldwide, and it is also the second greatest cause of cancer death in women (after lung cancer)[2]. Every year, 75,000 new cases are diagnosed among Indian women. This result must be seen in the context of the fact that the National Cancer Registry and Hospital-based Tumor Registries only represent about 3% of

the entire population[3]. More than half to seventy percent of individuals with locally advanced breast cancer (LABC) present for therapy. Except for a few papers on small samples, there is relatively little information on the epidemiology of breast cancer in India[4]. BC is a multifaceted illness. Other risk variables include reproductive risk factors such as early menarche and late menopause, nulliparity, older age at first full-term birth, number of children, and duration of breastfeeding, in addition to nonmodifiable risk factors such as genetic mutation, age, and family history of BC[5]. BC has been linked to epidemiological variables such as sociodemographic profile, socioeconomic position (SES), and educational status. Changes in lifestyle, such as lack of physical activity and a high-fat diet, can raise the risk[6].

Aims and Objectives: To assess individuals with early breast cancer who are undergoing treatment at a tertiary care facility.

Materials and Method

The current study was carried out over a three-year period at a tertiary healthcare centre in central India to assess patients with early breast cancer who visited the facility.

The study comprised a total of 100 patients for this aim. All of the cases were first assessed clinically. A full history of the current disease, prior history, history of risk factors (age at menarche, family history, menopausal status), and a thorough physical examination were all part of the clinical evaluation. Both the breasts and the axillae were examined and palpated during the local examination. To rule out any symptoms of distant metastases, a systemic examination was performed. The disease was clinically staged based on these findings, using the AJCC classification system. Following a clinical evaluation, the patient was subjected to diagnostic, staging, and fitness tests. FNAC or biopsy, as well as Mammography, were used as diagnostic tests. When the lump was palpable, FNAC was performed quickly, but when the mass was not palpable, a USG-guided or mammography-guided localised biopsy was performed. An X-ray of the chest, an ultrasound of the abdomen, and a bone scan were used to rule out metastasis during the staging process. They were given advice on the disease's diagnosis as well as treatment alternatives.

Results

Table 1: Age distribution of the patients

Age group	Number of patients	Percentage
20- 30 years	8	8%
31-40 years	10	10%
41- 50 years	32	32%
51- 60 years	24	24%
61- 70 years	10	10%
71- 80 years	16	16%

Seventy-one percent of the patients were between the ages of 41 and 60.

Table 2: Distribution of patients according to various factors associated

Parameter		Number of patients	Percentage
Menopausal status	Premenopausal	28	28%
	Perimenopausal	16	16%
	Postmenopausal	56	56%
Parity	Nulliparous	4	4%
	One child	6	6%
	Two children	56	56%

	3 or more children	34	34%
Age at first fullterm pregnancy	Before 20 years	28	28%
	21- 30 years	68	68%
Breast feeding	Yes	96	96%
	No	4	4%
Family History	Positive	26	26%
	Negative	74	74%

Patients were found to be postmenopausal in 56 percent of cases, premenopausal in 28 percent, and perimenopausal in 16 percent. Ninety percent of the patients had two or more children, according to the findings. It's worth noting that just 28% of patients who had an early full-term pregnancy developed breast cancer, compared to 72% of women who were pregnant between the ages of 21 and 30. In this study, 96 percent of the patients were breastfed. A total of 26% of the patients had a positive family history of breast, colon, or ovarian cancer.

Table 3: Distribution of patients according to FNAC results

FNAC results	Number of patients	Percentage
Positive for malignancy	74	74%
Suspicious of malignancy	20	20%
Negative for malignancy	02	02%
No FNAC	04	04%
Total	100	100%

FNAC was positive for malignancy in 77% of patients, suspicious in 20% of those who had a biopsy, which came out positive in 20%, and negative in 2% of those who had a biopsy (for which open biopsy was done, and concluded to be positive). There were no incidents of false positives. Mammographic guided needle localization biopsy was conducted in 4% of patients with nonpalpable tumours, and the results were positive for malignancy.

Table 4: Distribution of patients according to characteristics of tumor

Parameter		Number of patients	Percentage
Type of malignancy	IDC	92	92%
	Lobular carcinoma	4	4%
	Medullary carcinoma	2	2%
	Papillary carcinoma	2	2%
Tumor size (in cm)	<2	44	44%
	2-4	56	56%
Grade of tumor	I	12	12%
	II	68	68%
	III	20	20%
Involvement of axillary nodes	Positive	28	28%
	Negative	72	72%
ER/PR status	Positive	64	64%
	Negative	36	36%
Total		100	100%

Infiltrating Duct Carcinoma accounted for 92% of the histological type, lobular carcinoma accounted for 4%, and papillary and Medullary carcinoma accounted for 2% each. The tumour size ranged from 0cm to 2cm in 44 percent of patients, and from 2.1cm to 4cm in 56 percent. The largest tumour included in this study was 4cm in diameter. Grade I histology was found in 12% of patients, grade II histology in 68 percent of patients, and grade III histology in 20% of patients. A total of 28% of node positive cases were found. In 64 percent of patients, the ER/PR was positive, while in 36 percent, it was negative.

Discussion

The current study was conducted at a tertiary healthcare centre in central India over a three-year period to assess patients with early breast cancer who attended the facility. It was shown that 71.4 percent of the patients were between the ages of 41 and 60. The average age at diagnosis of cases in Pakseresht, et al's study was 47.73 years. According to other studies, 33% of breast cancer patients were under the age of 50 at the time of diagnosis. The majority of the patients in Sofi et al's study (88 percent) were between the ages of 35 and 65. In Western countries, BC peaks at 60–70 years old, but in Asian countries, it peaks at 40–50 years old[7-10]. When compared to women in Western countries, BC incidence in India peaks at a younger age. Patients were found to be postmenopausal in 56 percent of cases, premenopausal in 28 percent, and perimenopausal in 16 percent[11-13]. Pakseresht et al. also discovered similar results. Ninety percent of the patients had two or more children, according to the findings. It's worth noting that just 28% of patients who had an early full-term pregnancy developed breast cancer, compared to 72% of women who were pregnant between the ages of 21 and 30. In the Pakseresht, et al study, 69.6% of subjects had their first child at the age of 21. In the current investigation, it was discovered that 96 percent of the patients had breastfed. However, studies by Pakseresht, et al. and Gajalakshmi, et al. found that breastfeeding

length was linked to a higher risk of breast cancer, regardless of ER/PR status[14]. BC has also been linked to reproductive risk factors such as age at first childbirth and total number of children. Only 4% of patients in the Sofi, et al research were 30 years or older when they had their first kid. However, 42% of patients had three or more children. It was discovered that having fewer children (1–2) and being older at the time of first pregnancy (>25 years) had a beneficial relationship with BC[15]. Approximately 93 percent of women have nursed their children, with the smallest kid receiving an average of 27 14 months of nursing. In an Indian multicentric case–control study on breastfeeding and the risk of BC, it was discovered that lifetime breastfeeding length was inversely related to the risk of BC in premenopausal women. A total of 26% of the patients had a positive family history of breast, colon, or ovarian cancer[16]. Family history of breast cancer did not demonstrate any significant association with breast cancer in the study of Pakseresht, et al. A woman's risk of breast cancer is enhanced if she has blood relatives with the disease on either her mother's or father's side of the family[17]. Although the majority of women do not have a family history of breast cancer, it has long been recognised as a significant risk factor for the disease's development. We found no link between breast cancer and family history in the current investigation. This could be owing to the small number of patients in our study, or it could be related to an increase in the disease's occurrence in recent years[18-20]. FNAC was positive for malignancy in 77% of patients, suspicious in 20% of those who had a biopsy, which came out positive in 20%, and negative in 2% of those who had a biopsy (for which open biopsy was done, and concluded to be positive). There were no incidents of false positives. Mammographic guided needle localization biopsy was conducted in 4% of patients with nonpalpable tumours, and the results were positive for malignancy. Infiltrating Duct Carcinoma accounted for 92% of the histological type, lobular carcinoma accounted for 4%, and papillary

and Medullary carcinoma accounted for 2% each[21]. The tumour size ranged from 0cm to 2cm in 44 percent of patients, and from 2.1cm to 4cm in 56 percent. The largest tumour included in this study was 4cm in diameter. Grade I histology was found in 12% of patients, grade II histology in 68 percent of patients, and grade III histology in 20% of patients[22]. According to the study, 47 percent of patients had stage II, 36 percent had stage III, 14 percent had stage I, and 3 percent had stage IV BC. Previous research studies on stage of BC have reported that more than 50 percent of newly diagnosed patients have stage III or IV BC. Earlier studies have implicated factors such as lack of awareness, lack of fundi, and lack of education. Previous research has shown that 20%–50% of patients in low and middle-income nations are diagnosed at an earlier stage. A total of 28% of node positive cases were found[23]. In 64 percent of patients, the ER/PR was positive, while in 36 percent, it was negative. According to Michael et al., increasing age at first full-term pregnancy increased the risk of ER + PR + breast cancer while decreasing the risk of ER - PR - breast cancer. According to similar studies, the average age at first delivery was 21 years.

Conclusion

Breast cancer is the most common cancer in women worldwide, and it is also the second greatest cause of cancer death in women (after lung cancer). Thus we conclude that patients of breast cancer attending tertiary care institute were the multi parus, post menopausal females in the age group 41-60 years of age. Infiltrating Duct Carcinoma was the most common histological type diagnosed with tumor size between 2- 4cm and grade II and grade III tumor type with ER/PR was positive in 64% patients.

References

1. Pal SK, Mittal B. Improving cancer care in India: Prospects and challenges. Asian Pac J Cancer Prev 2004;5:226-8.
2. Dumitrescu RG, Cotarla I. Understanding breast cancer risk-where do we stand in 2005? J Cell Mol Med 2005;9:208-21.
3. Chandra AB. Problems and prospects of cancer of the breast in India. J Indian Med Assoc 1979;72:43-5.
4. Gupta P, Sharma RG, Verma M. Review of breast cancer cases in Jaipur region. J Indian Med Assoc 2002; 100:282-3, 286-7.
5. Nouh MA, Ismail H, El-Din NH, El-Bolkainy MN. Lymph node metastasis in breast carcinoma: clinicopathological correlations in 3747 patients. J Egypt Natl Canc Inst 2004;16:50-6.
6. Pakseresht S, Ingle GK, Bahadur AK, Ramteke VK, Singh MM, Garg S, Agarwal PN. Risk factors with breast cancer among women in Delhi. Indian J Cancer. 2009 Apr-Jun;46(2):132-8.
7. Ganz PA, Guadagnoli E, Landrum MB, Lash TL, Rakowski W, Silliman RA. Breast cancer in older women: Quality of life and psychosocial adjustment in the 15 months after diagnosis. J Clin Oncol 2003;21:4027-33.
8. Dalton SO, During M, Ross L, Carlsen K, Mortensen PB, Lynch J et al. The relation between socioeconomic and demographic factors and tumor stage in women diagnosed with breast cancer in Denmark, 1983-1999. Br J Cancer 2006; 95:653-9.
9. Leong SP, Shen ZZ, Liu TJ, Agarwal G, Tajima T, Paik NS, et al. Is breast cancer the same disease in Asian and western countries? World J Surg 2010;34:2308-24.
10. Agarwal G, Pradeep PV, Aggarwal V, Yip CH, Cheung PS. Spectrum of breast cancer in Asian women. World J Surg 2007;31:1031-40.
11. Gajalakshmi CK, Shanta V. Risk factors for female breast cancer: A hospital-based case-control Study in Madras, India. Acta, Oncol. 1991;30:569-74.
12. Babita R, Kumar N, Karwasra RK, Singh M, Malik JS, Kaur A, et al. Reproductive risk factors associated with breast carcinoma in a tertiary care

hospital of North India: A case-control study. Indian J Cancer 2014;51:251-5.

13. Iwasaki M, Otani T, Inoue M, Sasazuki S, Tsugane S; Japan Public Health Center-based Prospective Study Group, et al. Role and impact of menstrual and reproductive factors on breast cancer risk in Japan. Eur J Cancer Prev 2007;16:116-23.

14. Gajalakshmi V, Mathew A, Brennan P, Rajan B, Kanimozhi VC, Mathews A, et al. Breastfeeding and breast cancer risk in India: A multicenter case-control study. Int J Cancer 2009;125:662-5.

15. Zeleniuch JA, Roy ES. Epidemiology of breast cancer. In: Roses FD, editors. Breast Cancer. 2nd ed. Philadelphia: Elsevier; 2005. p. 3-14.

16. Skeie G, Hjartaker A, Lund E. Diet among breast cancer survivors and healthy women: The Norwegian women and cancer study. Eur J Clin Nutr 2006; 60:1046-54.

17. Rookus MA, van Leeuwen Fe; Netherlands Oral Contraceptives and Breast Cancer Study Group. Oral contraceptives and risk of breast cancer in women aged 20-54 years. Lancet 1994;24:844-51.

18. Akhtar M, Akulwar V, Gandhi D, Chandak K. Is locally advanced breast cancer a neglected disease? Indian J Cancer 2011;48:403-5.

19. Agarwal G, Pradeep PV, Aggarwal V, Yip CH, Cheung PS. Spectrum of breast cancer in Asian women. World J Surg 2007;31:1031-40.

20. Porter P. "Westernizing" women's risks? Breast cancer in lower-income countries. N Engl J Med 2008;358: 213-6.

21. Michae IJ, Jemal A. Cancer epidemiology, prevention and screening. vCancer Medicine. Hollan. Frei. American Cancer Society. Philadelphia: BC Decker Inc; 2003. p. 367-81.

22. Sim X, Ali RA, Wedren S, Goh DL, Tan CS, Reilly M, et al. Ethnic differences in the time trend of female breast cancer incidence: Singapore, 1968-2002. BMC Cancer 2006;6:261-70.

23. Nayeri K, Pitaro G, Feldman JG. Marital status and stage at diagnosis in cancer. N Y State J Med 1992;92:8-11.