Breast Cancer Presentation and Treatment Outcomes: At a Tertiary Care Hospital

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ABSTRACT

Background: Breast Cancer is by far the most frequent cancer among women. Breast cancer in uncommon below the age of 35, the incidence increases rapidly with the ages between 35 and 50. Chemotherapy with or without radiotherapy or hormonal therapy, following surgery is the most important treatment modality. This study explored epidemiological and clinical- hormonal profile of the patients. **Methods**: Socio- demographic and clinic-hormonal profile of the study subjects were obtained from the records. This was a single institutional, open label record-based, descriptive study. The collected data was compiled into EpiInfo 7 software and subsequently analysed data was done using SPSS software version 16 and result were mentioned with the help of the tables. **Results**: Most of the patients have locally advanced carcinoma. Most of the patients received chemotherapy with or without radiotherapy or hormonal therapy following surgery. More than 90% of the patients received chemotherapy. Most of the patients completed their treatment. **Conclusion**: Most of our breast cancer patients are middle aged female (between 35 and 50) with locally advanced carcinoma receiving chemotherapy with or without radiotherapy/hormonal therapy following surgery.

Keywords: Breast carcinoma, Epidemiology, Surgery, Chemotherapy, Radiotherapy, Hormonal therapy.

INTRODUCTION

Breast Cancer is the most common cancer among women, with an estimated 1.67 million new cases diagnosed in 2012 (about 25 percent of all cancers in women).It is now the most common cancer both in developed(794,000 cases) and developing regions(883,000 cases). The range of mortality rate is similar, approximately 6-20 per lac. Breast cancer ranks as the fifth cause of death from cancer, but it is still the most frequent cause of cancer death in women in developing regions.[1]

It is estimated that during the year 2012, about 144,937 new cases of breast cancer in women occurred in India, which accounts for 27.0 per cent of all malignant cases. About 70,218 women died of this cancer, mortality rate being 12.7 per lac population, ranking number one killer in women.[2] Breast cancer represents 12% of all new cases diagnosed and 25% of all cases in women (Breast Cancer Statistics, 2007).[3]

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Breast cancer in uncommon below the age of 35, the incidence increases rapidly with the ages between 35 and 50. A secondary rise in frequency often occurs after the age of 65.Risk Factors in family history, particularly if more than one family member has developed breast cancer. Genetic factor BRCA1 & BRCA2 mutation associate with high risk female breast cancer as well as ovarian cancer. Additional factors that increases breast cancer risk are early menarche, late age at birth of first child and late menopause are established risk factors.[4] Evidence suggests that both elevated oestrogen as well as progesterone are important factors in increasing breast cancer risks.[5] Breast cancer is linked with high fat diet and obesity. It is not known how dietary fat influences breast cancer risk at a cellular level.[5] Present use of birth control pill appears to have small effect on the risk of developing breast cancer. Hormone Replacement Therapy can increase the risk of breast cancer. Prognostic Factor for assessing risk of recurrence of breast cancer are involved number of nodal status, tumour size, Oncotype Dx recurrence score and Mammaprint . Estrogen and Progesterone receptor confer better prognosis. Symptoms and signs of breast cancers include breast and or axillary mass, ulcerations, bleeding and features of metastasis (Halperinet al., 2015; DeVitaet al., 2011). Combined modality treatment is usually the preferred mode

with surgery being the mainstay of treatment. Hormonal therapy forms an integral part of treatment in case of hormone receptor positive cancers. Targeted therapy is also an important part of the treatment in selected patients. Although preoperative irradiation may reduce the tumor size and theoretically facilitate the surgery, postoperative irradiation is nearly always preferable because the extent of tumor has been determined and tissue healing is less impaired (Halperinet al., 2015; DeVita et al., 2011).[6-8] The current study was conducted with an aim to determine the epidemiological and clinical profile and outcomes of patient suffering from breast cancer. Breast screening lead to early diagonosis of breast cancer. The average age of menarche can be increased through a reduction of childhood obesity and increasing strenuous physical activity and the frequency of ovulation (after menarche) decreased by an increasing strenuous physical activity.[9] In general the removal of tumour early is more likely to be more curative than removal of later stage.[10]

MATERIAL AND METHODS

This was a single institutional, open label record-based, descriptive study. This was conducted at the Radiotherapy Department, during the months of November & December, 2019. Several patient records available in the department were reviewed by census method based on pre-decided inclusion and exclusion criteria. Records of patients attending Radiotherapy OPD, Medical College, Kolkata from 1st January, 2017; with histologically proven breast carcinoma were considered. This resulted in 80 records to be considered. But 7 of these records had incomplete treatment details and was therefore excluded. The collected data was compiled into EpiInfo 7 software and subsequently analysed data was done using SPSS software version 16 and result were mentioned with the help of the tables.

RESULTS

From the study, it was observed that out of seventy three patients, mean age of the patients was 46.62 years, with minimum age being 27 years and Maximum 83 years. Median age was found to be 44 years. All of whom were married with 95.9% females, majority (87.7%) were Hindu by religion. Majority (49.2%) presented with locally advanced carcinoma, while 10.8% had advanced carcinoma with rest having local presentation. Nearly 91.5% did not have any metastasis while presenting to the OPD. Hypertension was the major co-morbidity identified (17.8%) followed by IHD (4.1%).Eighty-nine percent of the patients had undergone surgery prior to attending the OPD & rest did not have any surgical history related to their illness. Among those who had surgery earlier 93.9% had definitive intent while remaining 6.1% were palliative.

Table 1: Clinical Parameters

Clinical Parameters	Character of Patients	No. of Patients (%)
Presentation of carcinoma(n=65)	Local	26 (40.0)
	Locally Advanced	32 (49.2)
	Advanced	7 (10.8)
Status of Metastasis (n=59)	Present	5 (8.5)
	Absent	54 (91.5)
Comorbidities (multiple response)	Diabetes mellitus	1 (1.4)
	Hypertension	13 (17.8)
	IHD	3 (4.1)
	COPD	0 (0.0)
Surgery done or not	Prior Surgery	65(89.0)
	Surgery during treatment	0 (0.0)
	No Surgery	8 (11.0)
Intent of Surgery (n=65)	Definitive	61(93.9)
	Palliative	4 (6.1)
Hormonal Status	Known	60 (82.2)
	Unknown	13 (17.8)

Table 2: Chemotherapy parameters of Breast Carcinoma

Chemotherapy Parameter	Character of Patients	No. of Patients (Percentage)
Intent of Chemotherapy (n=67)	Curative	62 (92.54%)
	Palliative	5 (7.46%)
Completion of Chemotherapy (n=67)	Completed	59 (88.06%)
	Did not complete	8 (11.94%)

Table 3: Hormonal therapy Parameters

Hormonal therapy Parameters	Patients Characteristic	No. Of Patients (%)
Received hormonal therapy (n=73)	Yes	23 (31.5%)
	No	50 (68.5%)
Which hormonal drug given (n=23)	Anastrazole	6 (26.09%)
	Letrozole	2 (8.69%)
	Tamoxifen	15 (65.22%)

Table 4: Distribution as per hormonal therapy among those with known hormonal status (n=60)

ER status	PR status	Hormonal therapy given	
		Yes	No
Positive	Positive	13 (21.67%)	0 (0.0%)
	Negative	0 (0.0%)	0 (0.0%)
Negative	Positive	0(0.0%)	1 (1.67%)
	Negative	0 (0.0%)	13 (21.67%)
Positive	Positive	10 (16.67%)	3 (5.0%)
	Negative	1 (1.67%)	1 (1.67%)
Negative	Positive	1 (1.67%)	2 (3.33%)
	Negative	0 (0.0%)	15 (23.33%)

Majority (49.2%) presented with locally advanced carcinoma, while 10.8% had advanced carcinoma with rest having local presentation. Nearly 91.5% did not have any metastasis while presenting to the OPD. Hypertension was the major co-morbidity identified (17.8%) followed by IHD (4.1%).Eighty-nine percent of the patients had undergone surgery prior to attending the OPD & rest did not have any surgical history related to their illness. Among those who had surgery earlier 93.9% had definitive intent while remaining 6.1% were palliative. Among the seventy three records available, majority (72.5%)

completed their treatment as per advice, but 21.9% did not follow-up till completion of therapy, and death occurred among 2.8%. Hormonal status was known for 82.2% of the patients.Out of the patients 91.78% received chemo-therapy while 73.97% received radio-therapy.

Table 5: Treatment Outcome

Treatment Outcome	Completed	Did not Follow up	Death	Clinically unfit for further surgery
No. of Patients	53	16	2	2
Percentage	72.5	21.9	2.8	2.8

While 71.23% of the patients received both, 5.48% received neither. [Figure 1] 98.15% of the patients, who received radio-therapy, received it with curative intent. All of them who received radio-therapy had EBRT.
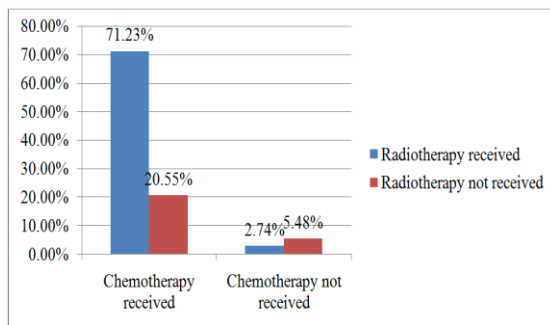

Figure 1: Clustered bar diagram showing distribution of patients as per status of radiation therapy and chemotherapy (n=73)

Among those who received chemotherapy 92.54% received it with curative intent. Majority completed their course of chemotherapy (88.06%) [Table 2]. Those who received hormonal therapy, were 31.5% amongst all the available records. Anastrazole (26.09%), Letrozole (8.69%) &Tamoxifen (65.22%) were used for hormonal therapy. [Table 3] Hormonal status was considered in the backdrop of whether or not hormonal therapy was given. It was observed that 18.32% of the patients received hormonal therapy who were also positive for all of HER 2, ER & PR status. Considering HER2 negative status, 16.67% patients overall were positive for ER & PR and received hormonal therapy. While 23.33% patients did not receive hormonal therapy, being negative for HER2, ER & PR; it was also observed that 21.67% patients were not given any hormonal therapy, being ER & PR negative but HER2 positive [Table 4]. Hormonal status was also considered in the backdrop of whether or not chemo-therapy was given.

It was observed that 21.67% of the patients received chemo-therapy who were positive for all of HER2, ER & PR status. While 1.67% patients did not receive chemo-therapy, being negative for HER2,

ER & PR, but 23.33% of the patients received chemo-therapy. It was observed that 21.67% patients were given chemo- therapy, being ER & PR negative but HER2 positive. [Table 6]

Table 6: Distribution as per chemotherapy among those with known hormonal status.

ER status	PR status	Chemotherapy given		HER2 status
		Yes	No	
Positive	Positive	13 (21.67%)	0 (0.0%)	Positive
	Negative	0 (0.0%)	0 (0.0%)	
Negative	Positive	1 (1,670%)	0 (1.67%)	
	Negative	13 (21.67%)	0 (21.67%)	
Positive	Positive	11 (18.33%)	2 (2.330%)	Negative
	Negative	2 (3.33%)	0 (1.67%)	
Negative	Positive	3 (5%)	0 (3.33%)	
	Negative	14 (33.33%)	1 (1.67%)	

DISCUSSION & CONCLUSION

The average age of breast cancer patients has been reported to be 35-50 years in various population-based studies done in different parts of the country. This study is obtained from the records .Going with the trend in India, the median age is 44 years (~30%) (Mc Cormack et al., 2013; Statistics of Breast Cancer in India, 2017).[11] In our study most presentation was from locally advanced (49.2%) and advanced (10.8%) similar to the prevailing trend (McCormack et al., 2013). Most of the patients of carcinoma breast receive chemotherapy also reflected in our study (91.78%). While a majority received radiotherapy (73.97%). In our study ER positive breast carcinoma was around 38.4% while in the studies it is usually about 65%. This may be due to the fact that some statuses were not known. Among the patients with known status it increases to 46.67%. Similarly with PR status 41.09% is positive in whole sample while 50% in known ones. This is consistent with the known trials (53%). Her2 positive in 36.9% of whole sample and 45% of known ones. The percentage of triple negative in known cases is 25% similar to trials (21%) (Halperinet al., 2015; DeVitaet al., 2011; McCormack et al., 2013). Patient with positive hormonal status received hormonal therapy. All the patients receiving radiotherapy received EBRT according to the present recommendations. The present study was a record- based study. Depending on the results, a longitudinal study can be undertaken in future, primarily focussing on the treatment outcomes and survival pattern. Also data was collected in a census method. So we did not seek any statistical association among different variables. However a longitudinal study in a similar setting can be undertaken. Since it is difficult to pursue a similar study in a community-based manner so we decided to stick to a record-based method (OPD based).

REFERENCES

1. GLOBOCAN 2012, Fact Sheet (2012),Breast Cancer Incidence and Mortality, Worldwide 2012 Summary.
2. GLOBOCAN 2013, India Fact Sheet, 2013, Section of Cancer Information, International Agency for Research on Cancer, Lyon, France.
3. Halperin , Edward C, Luther W Brady, and Carlos A Perez. Perez & Brady's principles and practice of radiation oncology. 1st ed. Philadelphia: wolterskluwer, 2015. Print.
4. Miller, A.B. and Bulbrook, R.D.(1980), N.Eng.J.Med., 303:1246 1248.
5. Pike, M.C. and R.K. Ross (1984),Br. Med. Bull.,40(4)351-354
6. Devita, Vincent T, Theodore S Lawrence, and Steven A Rosenberg. Cancer. 1st ed. Philadelphia: wolterskluwer/lippincottwilliams&wilkins health, 2011. Print.
7. 1st ed. 2017 [cited 4 June 2017]. Available from: https://www.nccn.org/professionals/physician_gls
8. McCormack V, Joffe M, Van Den Berg E, Broeze N, dos Santos Silva I, Romieu I et al. Breast cancer receptor status and stage at diagnosis in over 1,200 consecutive public hospital patients in Soweto, South Africa: a case series. Breast Cancer Research, 2013;15(5).
9. Frisch, R.E., et al (1981), JAMA, 246: 1559-1563.
10. WHO (1984), Bull WHO, 62(6) 861-869.
11. Statistics of Breast Cancer in India- Trends in India (Internet). Breastcancerindia.net 2017 (cited 4 June 2017). Available from https://www.breastcancerindia.net/statistics/trends.html