THE TREATMENT OUTCOME OF BREAST CANCER PATIENT

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ABSTRACT

Objective: *In this study our main goal is to evaluate the treatment outcome of breast cancer patient.* **Method:** *This quasi-experimental study was carried out at Dept. of Microbiology, Department of radiotherapy & Department of Surgery, Sylhet MAG Osmani Medical College Hospital from January, 01, 2011 to December, 31, 2011. Samples from the 30 cases were collected, first from Department of surgery (before operative procedure) and then, from Department of radiotherapy (after surgery and 3 cycles of adjuvant chemotherapy) from the same patient.* **Results:** *During the study, invasive ductal carcinoma in 28 (93.3%) cases and invasive lobular carcinoma in 2 (6.7%) cases. Lymph node was positive in 18 (60.0%) cases and negative in 12 (40.0%) cases. CD4/CD8 ratio before chemotherapy was 1.7 (SD ± 0.4) and CD4/CD8 ratio after chemotherapy was 1.3 (SD ± 0.5). CD4/CD8 ratio was significantly reduced after chemotherapy than before chemotherapy (Z=3.500; p<0.001).* **Conclusion:** *from our study we conclude that, the breast cancer patients demonstrated increased levels of CD4 and CD8+T cells and CD4/CD8 ratio before commencement of any treatment, but the levels were markedly reduced following chemotherapy.*

KEYWORD*: breast cancer, CD4/CD8 ratio, chemotherapy.*

INTRODUCTION

Breast cancer has been recognized since at least 1600 BC, when an ancient Egyptian medical text described eight cases of a tumor or ulcer of the breast that were treated by cauterization. There followed many historical reports of the disease, all concluding that there was no cure.[1] In the seventeenth century an understanding of the lymphatic circulation enabled the link to be made between the breast and the axillary lymph nodes and led to the first lymph node surgery in women with breast cancer.[2]

Radical surgery for breast cancer reached its zenith in the nineteenth century, at the hands of the US surgeon William Halsted, who removed not only the affected breast, but also the contra lateral breast, all associated lymph nodes and the underlying pectoral muscles.[3] In the twenty first century, breast carcinoma is one of the most common malignant tumors and the leading cause of cancer death among women.[4]

The World Health Organization estimated breast cancer incidence is, more than 1.2 million new cases per year in the world, accounting for 22% of the all newly diagnosed cancer cases and remains the leading cause of cancer mortality, representing 14% of the all cancer related death in female.[5]

In this study our main goal is to evaluate the treatment outcome of breast cancer patient.

Objective
General objective
- To evaluate the treatment outcome of breast cancer patient.

Specific objective
- To detect histological type of the tumor
- To identify lymph node involvement.

METHODOLOGY
Study type: This was a quasi-experimental study.

Place and period of study: This study was carried out at Dept. of Microbiology, Department of radiotherapy & Department of Surgery, Sylhet MAG Osmani Medical College Hospital from January, 01, 2011 to December, 31, 2011.

Sampling technique: Purposive sampling.

Inclusion Criteria

All female diagnosed patients of breast carcinoma –

- Of 25 – 65 years of age.
- Planned for adjuvant FAC protocol after surgery.

Exclusion Criteria

- H/o any complication in breast surgery, which causes delayed wound healing.
- Malignancy complicated with other chronic diseases.
- H/o any immunosuppressive disease, like DM, Rheumatoid arthritis.
- Patients not willing to participate in the study.
- H/O taking any myeloid growth factors (Granulocyte colony stimulating factor, granulocyte-macrophage colony stimulating factor).

Study Design

- A total number of thirty breast cancer patients were enrolled for the study, and from them consecutive two blood samples were taken. The first sample was taken before surgery, when they were admitted into surgery ward. And the next sample was taken after surgery and the third cycle of the scheduled six cycled adjuvant FAC (5-Fluouracil, Adriamycin, Cyclophosphamide) protocol chemotherapy .Samples were selected purposively, according to inclusion and exclusion criteria.

Data Collection Procedure

Samples from the cases were collected, first from Department of surgery (before operative procedure) and then, from Department of radiotherapy (after surgery and 3 cycles of adjuvant chemotherapy) from the same patient. Prior ethical permission was obtained from the E.C. of Sylhet MAG Osmani Medical College. Written informed consent was obtained from each patient Detailed history from the patient was taken.

Statistical analysis

All data will be checked and analyzed with the help of SPSS (statistical package for social sciences) with version 12.0. Statistical significance will be calculated using paired T test.

RESULTS

In figure-1 shows age distribution of the patients where the age of the patients ranged from 25 to 65 years with the mean age of 44.6 (SD± 8.6) years. The following figure is given below in detail:
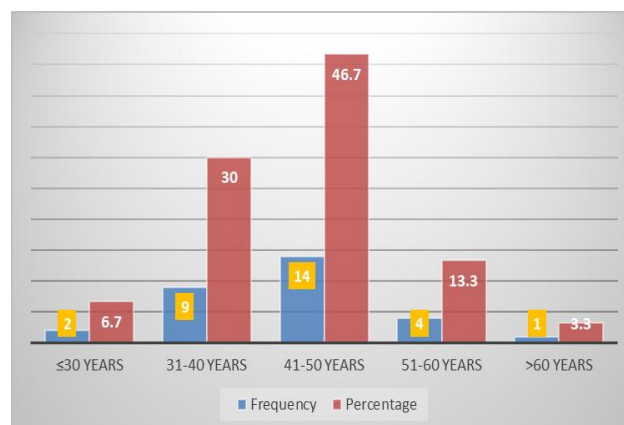

Figure-1: Age distribution of the patients.

In figure-2 shows distribution of patients according to positive family history. Family history of breast cancer was found in 8 (26.7%) and absent in 22 (73.3%). The following figure is given below in detail:
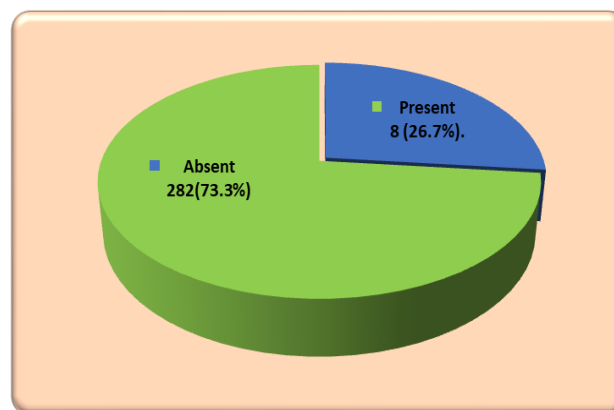

Figure-2: Distribution of patients according to positive family history (n=30).

In table-1 shows distribution of the patients according to Histological type of the tumor where invasive ductal carcinoma in 28 (93.3%) cases and invasive lobular carcinoma in 2 (6.7%) cases. The following table is given below in detail:

Table-1: Distribution of the patients according to Histological type of the tumor

Histological type of the tumor	n, %
Invasive ductal carcinoma	28(93.3%)
Invasive lobular carcinoma	2(6.7%)

In table-2 shows Lymph node involvement of the patients. Lymph node was positive in 18 (60.0%) cases and negative in 12 (40.0%) cases. The following table is given below in detail:

Table-2: Lymph node involvement of the patients.

Lymph node involvement	n, %
Positive	28(93.3%)
Negative	2(6.7%)

Table-3 showed the comparison of CD4/CD8 ratio before and after chemotherapy. CD4/CD8 ratio before chemotherapy was 1.7 (SD ± 0.4) and CD4/CD8 ratio after chemotherapy was 1.3 (SD ± 0.5). CD4/CD8 ratio was significantly reduced after chemotherapy than before chemotherapy (Z=3.500; p<0.001). The following table is given below in detail:

Table-3: Comparison of CD4/CD8 ratio before and after chemotherapy (n=30).

Parameter	CD4/CD8 ratio		*p-value
	Before Chemotherapy	**After Chemotherapy**	
Mean	1.7	1.3	p=0.002
SD	0.4	0.5	
Range	0.73-2.62	0.39-2.54	

SD=Standard deviation
*Pair-t test was applied to analysed the data

DISCUSSION
In this study, the age range of 30 patients was 25 to 65 years. Mean (±SD) age of the patients was 44.60 (±8.6) years. Considering the decade age as a group, patients were divided into five groups. The maximum number, 14 (46.7%) cases in this study was belonged to the age group of 41 to 50 years, which is similar to other study.[6] But another study found it 61-70 years.[7] In this study, among the 30 patients; 18 were found lymph node positive (60.0%) and 12 patients had no lymph node involvement (40.0%).

On histological examination, 93.3% were Invasive Ductal Carcinoma NST type in this study. According to one study found 93% invasive ductal carcinoma NST type.[8] Other studies foundthat 96.7% invasive ductal carcinoma, 98% and 82% invasive ductal.[9-11]

In one study noted that, the increased hazard ratio of the severe co-morbidity was most evident in patients who did not receive adjuvant therapies. Indeed, the patients with ASA III classification showed significantly worse outcome in tumor recurrence and deaths when they did not receive adjuvant therapies. This prognostic association was not seen in patients who underwent adjuvant therapies. We further investigated the incidence of serious adverse effect during adjuvant therapy in 2,367 patients who underwent adjuvant therapy including 36 patients in ASA III classification.[12] Where as in our study. CD4/CD8 ratio before chemotherapy was 1.7 (SD ± 0.4) and CD4/CD8 ratio after chemotherapy was 1.3 (SD ± 0.5). CD4/CD8 ratio was significantly reduced after chemotherapy than before chemotherapy (Z=3.500; p<0.001).

CONCLUSION
From our study we conclude that, the breast cancer patients demonstrated increased levels of CD4 and CD8+T cells and CD4/CD8 ratio before commencement of any treatment, but the levels were markedly reduced following chemotherapy.

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