

A Single Institutional Study of Depression among Patients of Breast Cancer

Saptarshi Banerjee

Department of Radiotherapy, NRS Medical College, Kolkata, West Bengal, India

ABSTRACT

Breast cancer is the most common cancer among females worldwide, as well as among Indian women. Diagnosis of breast cancer causes a psychological trauma in many patients. It is terrifying disease because of its high mortality, adverse effect on self image and sexual relationship. Almost one-third to half of the patients of breast cancer suffers from psychological distress. Different studies have been done to delineate the trend and degree of depression in breast cancer patients. In this study, the prevalence and degree of depression among breast cancer patients, attending department of radiotherapy of a tertiary hospital of West Bengal, India, during a period of six months, were studied, before, during and after treatment. A large portion of breast cancer patients were detected to be suffering from moderate and severe depression. For the patients with non metastatic breast cancer, the depression was greater during treatment than that was before or after treatment, and the differences were statistically significant. No significant difference was present in depression between pre and post treatment. For patients with metastatic disease, there was no significant difference in depression between before and during treatment.

Keywords: Breast Cancer, Depression, Prevalence

INTRODUCTION

Breast cancer is the most common cancer among females accounting for 24.2% of all cancer incidences per year, worldwide. [1] Also, among Indian women, breast cancer is the commonest cancer. [2,3] In 2018, 1,62,468 new cases of breast cancer were reported in India. [4] Breast cancer is considered as a terrifying disease because of its high mortality, adverse effect on self image and sexual relationship. [5] Surgery is the primary treatment of non metastatic breast carcinoma, whereas radiotherapy, chemotherapy and hormone therapy are used along with surgery, as and when indicated to inhibit distant metastasis and enhance long-term survival. [6] Studies have shown that almost one-third to half of the patients of breast cancer suffer from psychological distress. [7] Depression and

anxiety are most common psychological disorders, encountered in breast cancer patients. [8,9] Prevalence of depression ranges from 1.5% to 50% depending on the sample, definition of depression and method of assessment. [10,11] Even after effective treatment of cancer, the depression may persist for long duration, impairing the quality of life of a patient significantly. [12,13] Aim of this study is to find the prevalence of depression among breast cancer patients, attending department of radiotherapy of a tertiary hospital of West Bengal, India, during a period of six months.

MATERIALS & METHODS

Total 192 patients of carcinoma breast, attending department of radiotherapy of a tertiary hospital of West Bengal, India, from February 2019 to July 2019, were

assessed for depression. Patient health questionnaire-9 (PHQ-9 scale) ([Annexure 1, 2](#)) was used to assess depression status among those patients. Depression status was measured before and during treatment for all patients with non metastatic breast cancer. For metastatic cases, as treatment continues for long time, depression status was assessed before and during treatment.

Statistical Analysis - Data were analyzed using Microsoft Excel and SPSSv.20. Chi square test was used to compare the depression status, in various phases and T-test was used to compare mean scores of depression.

RESULT

Among total 192 patients, at presentation, 7 (3.65%) patients had no depression, 31 (16.15%) had Minimal problem, 72 (37.5%) had mild depression, 64 (33.33%) patients had moderate depression and 18 (9.38%) had severe depression (Fig. 1).

Total 14 cases were metastatic at diagnosis. They were assessed for depression before and during treatment. Rest 178 patients were assessed before, during and after treatment of carcinoma breast.

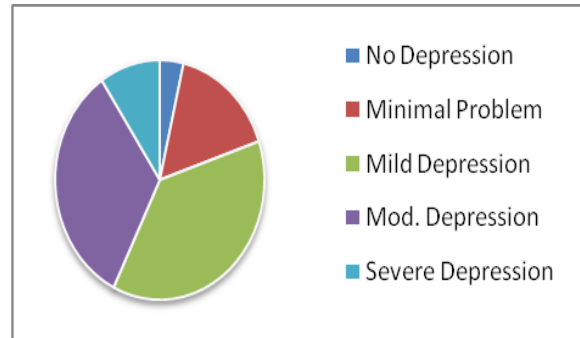


Fig. 1. Distribution of patients according to depression status at presentation

Among those 178 non metastatic cases 7(3.93%) cases had No Depression, 29 (16.3%) had Minimal Problem, 68 (38.2%) patients had Mild Depression, 60 (33.7%) had Moderate depression and 14 (7.87%) patients had Severe Depression, before initiation of treatment.

During treatment, the number of patients with severe and moderate depression increased and the patients in the groups of no depression, minimal problem and mild depression decreased. This change was statistically significant (p-value= 0.031) (Table 1). The mean scores (\pm standard error) of depression according to PHQ-9 scale were 13.55 ± 0.35 and 15.07 ± 0.37 respectively before and during treatment (p-value= 0.003).

Table 1. Number of patients in different groups of depression before and during treatment (P-value= 0.031)

Time	Depression					Total
	No	Minimal Problem	Mild	Moderate	Severe	
Before Treatment	7	29	68	60	14	178
During Treatment	4	22	50	74	28	178

There was no statistical significant difference with respect to various depression groups, between patients before and after treatment (p-value=0.73) (Table 2). The mean values of depression scores were also comparable between pre and post treatment (13.55 ± 0.35 and 13.17 ± 0.36 respectively, p-value=0.45).

Table 2. Number of patients in different groups of depression before and after treatment (P-value= 0.73)

Time	Depression					Total
	No	Minimal Problem	Mild	Moderate	Severe	
Before Treatment	7	29	68	60	14	178
After Treatment	10	33	66	51	18	178

Again, while comparing status of depression among patients, during and after treatment, the difference is statistically significant (p-value= 0.01) (Table 3). During treatment, numbers of patients with severe and moderate depression were more, in comparison to post treatment.

The mean score of depression was also significantly higher during treatment (15.07±0.37) than post treatment (13.17±0.36) (p-value=0.0003).

Table 3. Number of patients in different groups of depression during and after treatment (P-value= 0.01)

Time	Depression					Total
	No	Minimal Problem	Mild	Moderate	Severe	
During Treatment	4	22	50	74	28	178
After Treatment	10	33	66	51	18	178

For the 14 metastatic cases, before treatment 2 had minimal problem, 4 patients had mild depression, 4 had moderate, and rest 4 had severe depression. During treatment, number of patients with moderate and severe depression increased but not significantly (p-value=0.45) (Table 4). There is also no statistically significant difference between mean depression, before and during treatment in metastatic cases (15±1.46 and 16.79±1.14) (p-value= 0.34).

Table 4. Number of metastatic patients in different groups of depression during and after treatment (P-value= 0.45)

Time	Depression				Total
	Minimal Problem	Mild	Moderate	Severe	
Before Treatment	2	4	4	4	14
During Treatment	0	3	5	6	14

Pre treatment mean depression score for 14 metastatic patients (15±1.46) was more than 178 non metastatic cases (13.55±0.35), but it was not statistically significant (p-value= 0.28).

DISCUSSION

Diagnosis of breast cancer causes a psychological trauma in many patients. According to different previous studies, prevalence of depression in breast cancer patients ranged from 1.5% to 46%. [14,15] A meta-analysis by Zainal et al included 10,826 breast cancer patients from 32 research studies and found that the incidence of depressive disorder varied from 1% to 56%. [16]

In this study, at presentation, around 20 % of patients had no depression or minimal problem. Around 37.5% had mild depression, whereas, 33.3% had Moderate depression and around 9.4% patients had Severe Depression.

While assessing the association of different treatment interventions with depression, it was found in some studies, that depression is more likely in patients undergoing chemotherapy, [17,18] or radiotherapy. [19-21] Broeckel et al reported that longer periods after cancer diagnosis and chemotherapy completion were positively related to greater depressive symptoms. [22] Depression has been associated with more prolonged hospital stays, increased physical distress, [23] poorer treatment compliance, [24] lower quality of

life, [25] and increased desire for hastened death. [26]

In this study, number of non metastatic carcinoma breast patients with moderate and severe depression increased significantly during treatment. There was no statistically significant difference in depression between before and after treatment. With respect to mean score of depression, the same trend was observed. Mean score of depression during treatment was significantly higher than pre or post treatment score. Pre treatment mean depression score for metastatic patients was more than non metastatic cases, but it was not statistically significant. In case of metastatic breast cancer patients there was no significant difference in depression between before and during treatment.

CONCLUSION

Psychological distress in the form of depression is a common phenomenon among breast cancer patients. In this study, a large portion of breast cancer patients, attending in the department of radiotherapy of a tertiary hospital, during a span of 6 months, were detected to be suffering from moderate and severe depression. The depression was significantly greater during

treatment than that was before or after treatment.

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Annexure 1. PHQ-9

Patient health questionnaire-9 (PHQ-9)				
Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Annexure 2. Depression score

TOTAL SCORE	DEPRESSION STATUS
0-4	NO DEPRESSION
5-9	MINIMAL PROBLEM
10-14	MILD DEPRESSION
15-19	MODERATE DEPRESSION
20-27	SEVERE DEPRESSION

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