Original Article

THE INCIDENCE OF ANXIETY AND ITS CORRELATES IN CANCER PATIENTS RECEIVING RADIOTHERAPY

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ABSTRACT:

Objective: To observe the incidence of anxiety in radiotherapy cancer patients in relation to their age, gender, education, marital status, performance status and type of disease.

Design: Data regarding socio-demographic variables and disease type was recorded on a data capture form. The presence of anxiety was measured by administering Taylor Manifest Anxiety Scale, whereas patients' performance status was measured by administering Kernofsky Performance Status Scale.

Setting: Patients coming to the Department of Radiation Oncology, Shaukat Khanum Memorial Cancer Hospital and Research Centre for their treatment were included in this study.

Subjects and Methods: A consecutive sample of 113 patients was taken and followed up to study the incidence of anxiety. Data over various parameters like age, gender, education, marital status, disease type and performance status was recorded.

Results: Fifty percent of cancer patients receiving radiotherapy were found to be suffering from anxiety. Among 89% of patients, anxiety lowered after the therapy, in 3% it increased and remained static in 8%. Patients with low education and low performance status presented with high anxiety. Among all the patients, no significant relationship between anxiety and gender, age, marital status and site of the disease was observed.

Conclusion: Correlates other than radiotherapy procedure can also cause anxiety in patients but further research is required to establish those correlates of anxiety. It is recommended that all radiotherapy patients should be provided education and procedural information designed to familiarize them with the forthcoming experience in order to reduce their anxiety.

KEY WORDS: Anxiety, Correlates, Radiotherapy, Cancer.

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INTRODUCTION

Some degree of anxiety in cancer patients is understandable and does not require psychological treatment. Some patients suffer more anxiety at such time, because they are harboring ungrounded fears about their illness or treatment and are too frightened to mention those to the staff looking after them. Patients receiving radiotherapy may develop anxiety reactions at the beginning of the treatment course and during treatment course especially when some changes in therapy are made because of the distressing side effects or extensions of the disease. They may experience the same anxiety reactions at the end of treatment when the results of therapy are still unknown. Majority of the radiation therapy patients reports their waiting

room experience as a most distressing aspect of the treatment. Here, they face other patients of varying ages, stages of the disease and degree of disabilities[1, 2] That distressing waiting room experience may lead to an expectation that treatment will be very hard to bear. Anxiety and fears are often present, particularly if the patient does not know what is happening to him[3, 4, 5]. The average patients know little about radiation therapy before the treatment is recommended, but almost all have strong preconceived notions about it. They are understandably apprehensive about the distressing side effects of the radiation therapy[6,7,8].

Lamszus K, et al found that more than half of patients reported anxiety during their first irradiation, which usually decreased during subsequent session, and in no case increased [9]. It was also found that radiation therapy patients had significantly greater problems with decreased stamina, symptoms related to operation scar and anxiety when compared with the patients receiving chemotherapy [10]. More than half of all patients receiving radiotherapy are reported to be suffering from anxiety which is usually correlated with the radiotherapy procedure but the other probable correlates like patient's age, gender, education, marital status, performance status and disease type are ignored. We have attempted to observe the incidence of anxiety and its correlates other than the radiotherapy procedure.

PATIENTS AND METHODS

A consecutive sample of one hundred and thirteen adult cancer patients, coming to the department of Radiation Oncology, Shaukat Khanum Memorial Cancer Hospital & Research Centre for their treatment was taken. Of these, one hundred patients gave consent to participate in the study and remaining thirteen refused their participation. Most probably due to language barrier they were unable to understand instructions as all of them were "Pushto" speaking. The overall median age of patients was observed to be 47.5 years. Male patients contributed (56%) to the sample with median age

of 45 years while female patients being lower in number presented with median age of 49 years. Patients with the history of a psychiatric disorder and those receiving palliative radiotherapy were excluded from the study. The information given to patients by the radiotherapist and radiotherapy technician was crosschecked with patients to make sure that all patients are fully aware of their disease status, prognosis and the radiotherapy procedure. Data over various parameters like demographics, disease status, performance status was collected on relevant data capture form. All patients were interviewed and assessed one hour before the start of their first fraction of radiotherapy. They were also reassessed at the end of radiotherapy to observe any change in the severity of anxiety. For the assessment of anxiety and performance status of the patients, Taylor Manifest Anxiety Scale and Karnofsky Performance Status Scale were administered respectively. Taylor Manifest Anxiety Scale is a fifty items self-report questionnaire drawn from Minnisota Multiphasic Personality Inventory by Taylor to assess the patient's anxiety[11]. Karnofsky Performance Status Scale is utilized to describe how well a patient can go about their daily activities. It is more stratified than the others [12].

Independent sample t-test was used to analyze mean difference of the data collected on quantitative variables for the subgroup analysis, while paired sample student's t- test was utilized to test for any significance of mean difference among the same group of patients experiencing anxiety over a period of time. We used Chi - square test for checking any possible significant independence between various categorical variables. Pearson correlation coefficient was calculated and tested for its significance at 5% level to see any correlation between the two sets of variables.

RESULTS

Fifty percent of patients were presented with above normal range of anxiety on first assessment while remaining were found to be normally anxious. Female patients have high anxi-

ety scores when compared with the mean anxiety scores of male patients (22.455 vs. 18.625) but in both sexes, a significant decrease in anxiety was observed (P < 0.001). Among all the patients, there was not any significant dependence between anxiety and gender, age group at presentation, marital status, and site of the disease. The average overall anxiety before radiotherapy was 20.31±0.876 (Mean ± Standard Error of Mean), which lowered after the therapy to settle at 15.26±0.817 (p value: 0.001). Of all these patients, among 89%, the anxiety lowered after the therapy, in 3% it increased and remained static in 8%. We found significant dependence between anxiety and education (Chi Square = 6.632, df = 2, P Value < 0.001) and performance status of patients (Chi Square = 14.729, df = 1, P Value < 0.001). On further analysis of these variables, we observed a significant negative correlation between the level of anxiety and years of education (-0.247, P Value<0.013) and performance status (-0.384, P Value <0.001).

DISCUSSION

Patients diagnosed with cancer are usually prescribed radiotherapy that is a source of much anxiety and distress for majority of them [13]. In literature, there is only little information about the influence of irradiation on the psychological health of cancer patients. However, the psychological distress and anxiety related to irradiation are often observed [14].

In this study, 50 percent of cancer patients were presented with above normal range of anxiety. Although female patients have high anxiety when compared with mean anxiety of male patients (22.455 vs. 18.627) but overall, we observed no significant dependence between anxiety and gender, age, marital status and the site of disease (Table: I). Anxiety was observed to be decreasing after the radiotherapy in a large number of patients i.e. 89% (P Value: 0.001). These findings are in agreement with earlier findings that anxiety in radiotherapy patients

Table-I: Patients' demographic, disease status and anxiety

Variables		Anxiety		Significance
		Yes	No	
Age				
	Below 25	4	2	
	25 - 35	8	4	
	35 - 45	12	13	
	45 - 55	9	13	
	55 - 65	11	8	
	65 and above	6	10	Not Significant
Gender				
	Male	25	31	
	Female	25	19	Not Significant
Marital Status				
	Married	42	45	
	Unmarried	8	5	Not Significant
Site of Disease				
	Breast	14	13	
	Genitourinary Organs	8	7	
	Lip and Oral Cavity	7	9	
	Bone and Connected Tissues	8	7	
	Brain and CNS	3	3	
	Respiratory Organs	4	7	
	Others	6	4	Not Significant

is common which usually decreases after radio-therapy [9,15,16], but the observed increase in anxi-ety after radiotherapy is contrary to the find-ings of Lamszus K. et. al. [9]. In literature, the de-crease in anxiety is usually attributed to radio-therapy procedure and it is thought that patients prescribed this treatment have little information about the radiotherapy procedure, which causes anxiety for them. Interestingly, our all study patients were fully explained the radiotherapy procedure before the start of treatment. In this condition, decrease after treatment in our study is difficult to interpret. May be the method of explaining radiotherapy procedure matters; may be just briefing procedure does not help patients reduce their anxiety in the start and ex-periencing it does, because having a knowledge of something and actually going through it are two different things. We need to probe this de-crease in anxiety further. In the present study, the increase in anxiety was observed in three patients; all were married females aged between 30 and 35 years. Two of them were suffering from genitourinary cancer and one from carcinoma of breast. We observed a significant dependence between anxiety and years of formal education (Chi Square = 6.632, df = 2, P

Value < 0.001, Table: II). Further statistical analysis revealed that patients' anxiety and their formal educational status are negatively correlated with each other (r = - 0.246, P Value = 0.013). It means anxiety in patients decreases as their years of formal education increases. Re-searchers have already established the role of formal education in developing psychiatric dis-orders. It has been observed that lack of formal education is a major risk factor for developing psychiatric disorders as it is felt that education provides coping mechanisms in more than one way. It raises self-efficacy, makes us feel less perhaps in situations, and produces a greater sense of control over environment [17]. So, the high incidence of anxiety in less educated can-cer patients is understandable because when they are described about their disease and treat-ment process especially the radiotherapy pro-cedure, they may not be comprehending that information fully. The dependence between anxiety and performance status was also ap-peared to be significant in this study (Table: III). We also found negative correlation between anxiety and performance status (r = - 0.384, P Value < 0.001). The decrease in anxiety in pa-tients with better performance status is also

Table-II: Anxiety vs. Education

Educational status	Anxiety		Total
	Yes	No	
Nil	20	12	32
Till 10 Years	24	22	46
Above 10 Years	6	16	22
TOTAL	50	50	100

Chi Square = 6.632, df = 2, P Value < 0.001

Table-III: Anxiety and patients' performance status

Performance Status	Anxiety		Total
	Yes	No	
30 – 70	38	19	57
70 and above	12	31	43
TOTAL	50	50	100

Chi Square = 14.729, df = 1, P Value.< 0.001

comprehendible as patients with low performance status remained over concerned about their problems because of the losses of role, independence and physical strength they face.

From the results of this study, we concluded that patients' formal education and performance status are negatively correlated with their anxiety during cancer irradiation. The more detailed information in the form of counseling sessions, video tapes, and written material about radiotherapy procedure, possible side-effects, prognosis, experiences of recovered patients, etc. is recommended in order to reduce anxiety in radiotherapy patients especially in those having low education and low performance status. All patients should be assessed for symptoms of anxiety and those who suffer from severe anxiety should be provided psychological support. We also emphasize the need of further research on a large number of patients to study other possible correlates of anxiety not directly related to patient's illness as their worries related to family's well-being, financial constraints, family conflicts, etc might also be contributing to their anxiety.

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