ANXIETY, DEPRESSION IN PATIENTS RECEIVING CHEMOTHERAPY FOR SOLID TUMORS

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ABSTRACT

Objective: To determine the frequency of anxiety and depression in patients undergoing chemotherapy for solid tumors using Hospital Anxiety Depression Scale (HADS).

Study Design: Cross sectional descriptive study.

Place and Duration of Study: Out-patient department of Armed Forces Institute of Mental Health, Rawalpindi from June 2011 to December 2011.

Methodology: Consecutive non probability sampling technique was used to select patients of age (25-70 years), male or female, who had received atleast 03 cycles of chemotherapy for solid tumors. Those with history of prior psychiatric illness, current use of psychotropic medication or psychoactive substance use, and any major bereavement in past one year were excluded from the study. After taking informed consent, relevant socio-demographic data was collected and HADS was administered. HADS-A cut off score of 7 was taken as significant anxiety while a HADS-D cut off score of 7 was taken as significant depression.

Results: The total number of participants was 209. The mean age of patients was 42.9 years, with 55.5% males and 44.5% females. Overall 33/209 (15.8%) patients had anxiety while 56/209 (26.8%) were found to have depression. There was a higher frequency of anxiety and depression in younger patients (less than age 40 years), females, patients who were single or divorced, and patients receiving chemotherapy for pancreatic carcinoma.

Conclusion: Patients undergoing chemotherapy suffer from considerable levels of anxiety and depression, thus highlighting the need for specialized interventions.

Keywords: Anxiety, Depression, Chemotherapy, Solid tumors.

INTRODUCTION

Cancer is well known to be a difficult disease, affecting patients and their families both physically and emotionally[1]. The leading cause of death in economically developed countries, and the second leading cause of death in developing countries is reported to be cancer[2]. Thus in spite of biomedical progress, cancer is still often considered synonymous with death, pain and suffering. The mere knowledge of the diagnosis along with ongoing ambiguity regarding the course of illness add up to considerable distress[3].

In addition to this, the treatment modalities of cancer namely surgery, radiation and chemotherapy are also known to contribute towards psychological disturbances. Chemotherapy in particular is an intense and cyclic treatment and has many side-effects like hair loss, nausea, vomiting, fatigue and cognitive impairment[4]. Anxiety and depression in cancer patients are commonly seen on account of long duration and side effects of treatment, repeated hospitalizations, functional restrictions and disabilities leading to an overall diminished quality of life[5,6].

In the past decades, many studies have been published on the psychiatric sequelae of a cancer diagnosis and its treatment. In one research, Pandey et al found that in patients receiving chemotherapy, 15.38% had significant anxiety and 16.2% of patients were suffering from depression[7]. However it is a documented fact that little evidence guides depression treatment for cancer patients as the health care professionals are still not fully aware of the various aspects of psychiatric morbidity specific to this population[8].

Bultz and Carlson described emotional distress as "the sixth vital sign in cancer care",

and accordingly requested health care providers to attach no less importance to the monitoring of emotional distress than to the monitoring of "traditional" vital signs such as blood pressure or heart rate[9]. A diagnosis of depression may lead to higher rates of non compliance to treatment plan, reduced chances of survival and may also predict early mortality[10,11].

The search of local database revealed a paucity of literature on psychiatric disorders in patients receiving chemotherapy. In one of the local studies, Dogar et al concluded that depression and anxiety disorders are common psychiatric disorders among oncology patients and can have a significant impact on functioning of these patients[12]. Another recent multicentre study by Jadoon et al showed that compared with control group, adults with cancer have higher prevalence rates of depression and anxiety. The findings supported screening of patients for symptoms of depression and anxiety as part of standard cancer care and referring those at a higher risk of developing psychological morbidity for appropriate care[13].

The objective of this study was to describe the frequency of depression and anxiety in patients undergoing chemotherapy. Our methodology did not allow the establishment of a definitive cause and effect relationship between chemotherapy and mental health of the patients; however the study was able to provide insight into anxiety and depression that is prevalent in patients undergoing chemotherapy. Thus provisions can be made to screen this at risk population on a regular basis, and to provide necessary clinical interventions, treatment and support. This is of utmost importance in developing countries such as Pakistan with limited health care resources.

PATIENTS AND METHODS

This cross sectional descriptive study was conducted in out-patient department of Armed Forces Institute of Mental Health, Rawalpindi. The sample size was calculated by WHO sample size calculator, and a total of 209 patients were included in the study through consecutive non probability sampling, drawn from the patients referred by Dept of Medicine, Military Hospital and Dept of Oncology, Combined Military Hospital Rawalpindi. The patient recruitment was completed from June 2011 to Dec 2011.

Permission was taken from Hospital Ethical Committee and all patients between 25 to 70 years who had received atleast 03 cycles of chemotherapy for solid tumors (to ensure standardization of duration of exposure to chemotherapy), were approached for inclusion in the study. The confounding variables were taken care of by detailed history taking about any psychiatric illness prior to the chemotherapy, current use of psychotropic medication or psychoactive substance use, and any grief or major bereavement in past one year. The patients were educated regarding the nature of the study and its significance in highlighting the importance of detection and management of psychiatric morbidity in cancer patients, and written Informed consent was taken from those patients who showed willingness to participate.

The demographic details of the patients including age, gender and marital status along with the type of solid tumor (according to location of carcinoma i.e. breast, lung, liver, colorectal and pancreas) were entered in a specially designed proforma. The researcher administered Hospital Anxiety and Depression Scale (HADS) to the patients. It is a 14-item questionnaire consisting of two subscales: HADS-A for Anxiety and HADS-D for Depression. Each item is rated on a four-point scale giving maximum scores of 21 for anxiety and depression. HADS-A cut off score of 7 was taken as significant anxiety while a HADS-D cut off score of 7 was taken as significant depression[14]. All the data collected was entered and analyzed through Statistical Package for Social Sciences (SPSS) version 14.0. Frequency (%) was calculated for anxiety and depression, gender, marital status

and type of solid tumor for which patient was receiving chemotherapy.

RESULTS

The total number of study participants was 209. The mean age of the patients was 49.25 years (SD ± 8.73) with a range of 29 to 67 years. The patient age was divided into three groups as follows: Group 1 (≤ 40 years), group 2 (41 to 54 years) and group 3 (≥ 55 years). Of all, 116 (55.5%) were males and 93 (44.5%) were females. Based on marital status, the patients were divided into single, married, widowed and divorced groups. Patients were divided into 5 groups based on the type of their solid tumor diagnosis (the site of carcinoma i.e. breast, lung, liver, colorectal and pancreas). Table-1 details the socio-demographic distribution of the sample population. The mean total HADS A score was 4.82 (SD ± 2.604), whereas the mean total HADS D score of the 209 participants was 7.03 (SD ±

anxiety while 56/209 (26.8%) patients were found to have depression.

DISCUSSION

Cancer is an illness associated with significant psychosocial morbidity. This study identified significant levels of anxiety and depression amongst patients receiving chemotherapy. In our study, overall 15.8% patients had anxiety while 26.8% were found to have depression. These findings are comparable to an evidence report on the occurrence, assessment, and treatment of depression in cancer patients by Pirl, which concluded that depression appears to be highly prevalent in people with cancer. Although reported prevalence rates vary widely, it appears to affect 10-25% of cancer patients[15].

Pandey et al evaluated the effect of chemotherapy on distress, anxiety and

Table: Demographics of the sample population (n = 209).

Sociodemographic variable	Number of participants	Percentage of total participants
Age in years		
• ≤ 40	38	18.2%
• 41 to 54	87	41.6%
• ≥ 55	84	40.2%
Gender		
• Male	116	55.5%
• Female	93	44.5%
Marital status		
• Single	11	5.3%
• Married	170	81.3%
• Widowed	20	9.6%
• Divorced	8	3.8%
Type of solid tumor		
• Breast cancer	74	35.4%
• Lung cancer	54	25.8%
• Carcinoma liver	34	16.3%
• Colorectal CA	31	14.8%
• Pancreatic CA	16	7.7%

4.485). Overall 33/209 (15.8%) patients had

depression. A total of 117 patients were evaluated by using Distress Inventory for Cancer (DIC2)

and Hospital Anxiety and Depression Scale (HADS). Of the 117 patients, 52 (44.4%) were taking chemotherapy for solid tumor while 33 (28%) had lympho-proliferative disease and 20 (17%) had hematological malignancies. The mean distress score was 24, 18 (15.38%) were found to have anxiety while 19 (16.23%) had depression[7]. Their results also appear to support the findings of our study.

In a study conducted to determine the prevalence of psychological distress among a large sample of cancer patients (n = 4496), Zabora[16] and colleagues found that the overall prevalence rate of distress for this sample was 35.1%. The cancer diagnoses of the sample population spanned[14] types including solid tumors of lung, brain, pancreas, breast and liver along with hematological malignancies. Pancreatic cancer patients produced the highest mean scores for symptoms such as depression. The authors Turaga and colleagues also reported that depression is highly prevalent in patients with pancreatic cancer and can result in fatal outcomes from suicides[17]. This is similar to our study where a cross tabulation of type of tumor with levels of depression revealed that all 16 patients of pancreatic cancer included in our study were found to be depressed.

However, our results indicated lower levels of anxiety and depression as compared with some local studies conducted earlier. These include a recent study from Pakistan by Dogar and colleagues. Over a 6-month period, 60 eligible patients were enrolled in the study. The major types of cancers included in the study were breast cancer, lung carcinoma, renal cell carcinoma and leukemia. They concluded that 43.3% subjects reported HADS-Anxiety (HADS-A) scores over seven, while 61.6% reported HADS-Depression (HADS-D) scores over seven[12].

Similarly Jadoon and colleagues carried out a cross sectional study in outpatient departments of Multan Institute of Nuclear Medicine and Radiotherapy and Nishtar Medical College Hospital, Multan. Aga Khan University Anxiety and Depression Scale (AKUADS) was used to define the presence of depression and anxiety in study participants. The sample consisted of 150 diagnosed cancer patients and 268 participants without cancer (control group). The common diagnoses were urological (21.3%), hematological (18.0%), and head and neck malignancies (15.0%) and breast (14.0%) cancer. Overall, 66.0% of the cancer patients were found to have depression and anxiety[13].

High prevalence rates of anxiety and depression were also reported in a study from Iran. This research focused on a variety of gastrointestinal cancers including stomach, esophagus, colon, rectum and small intestine. The authors concluded that 57% of patients with gastrointestinal cancer have anxiety while 47.2% were depressed[3].

The following factors could contribute to the variance in reported prevalence of anxiety and depression: Lack of standardization in terms of population studied, disease site and stage, sample size, assessment instrument, cut-off scores and diagnostic criteria employed.

The findings of our study are strengthened by the use of appropriate sample size calculated using WHO sample size calculator. In addition, we have used the standardized measure of Hospital Anxiety and Depression Scale which is a widely used valid questionnaire to measure psychological distress in cancer patients[18,19].

However, the scope of our research only allowed us to describe the frequency of anxiety and depression; related issues such as patients' quality of life and global functioning were not studied[20]. In addition to this, health statistics reveal that anxiety and depression are common psychiatric morbidities in general population, and a local study on prevalence of depression in general population revealed that 45% of the Pakistani population is depressed[21]. The present study was an observational study that indicated the presence of anxiety and depression in the patients receiving chemotherapy, but did not obviate that anxiety and depression in patients is

linked to their cancer diagnosis or particularly the effects of chemotherapy. Future research should include a case control study in order to establish a definite link between chemotherapy and associated anxiety and depression.

CONCLUSION

This high prevalence of anxiety and depression in oncology patients in Pakistan as shown in our study becomes an even more important issue as there is already lack of adequate infrastructure for provision of mental health services, thus making it more important for the general practitioners and oncologists to understand the importance of risks of untreated anxiety and depression in cancer patients.

This study therefore emphasizes the need to raise awareness about the prevalence of psychological sequelae of chemotherapy, as well as provision of interventions for early detection and treatment of these patients as an essential part of their comprehensive care plan.

Conflict of Interest

This study has no conflict of interest to declare by any author.

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