PREVALENCE OF ANXIETY AND DEPRESSION IN KIDNEY AND URINARY BLADDER CANCER PATIENTS UNDERGOING SURGICAL TREATMENT: AN INDIAN PERSPECTIVE.

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Abstract

Background-Cancer is a life changing diagnosis that can take an emotional and psychological toll on patients. As cancer patients cope with the physical and emotional effects of their disease, they may experience anxiety, depression, or other mental health problems. According to projections, there will be over 11 million cancer-related deaths worldwide by 2030. Objective- The purpose of this study was to determine the prevalence of depression and anxiety in Indian patients with renal and urinary bladder cancer.

Materials and Methods - A cross sectional study was conducted in which all participants were recruited from the Urology Department of a tertiary care hospital in New Delhi. The study was conducted in a span of 3 months after taking a written consent and 100 newly diagnosed urinary bladder and renal cancer patients were assessed. Data was collected using a self administrated questionnaire and anxiety and depression symptoms were measured using hospital anxiety and depression scale (HADS).

Results-In our study the HADS mean anxiety score in renal cancer patients is higher than HADS mean score in bladder cancer patients and the difference is highly statistically significant (t=1.98, p=0.00). The HADS mean depression score in renal cancer patients is somewhat (borderline) greater than in urinary bladder cancer patients, and the difference is found to be statistically significant (t=1.98 p=0.012).

Conclusion - Our research suggests that cancer patients are more likely to experience numerous psychological issues, namely depression and anxiety in renal and urinary bladder cancer patients. Patients are initially unaware of their illnesses, but once they receive a diagnosis, they experience anxiety symptoms. If these symptoms are not diagnosed and treated then it leads to depression during the cancer treatment. Both physiologically and mentally, cancer severely damages its patients. In this regard, family members and other relatives must provide them with both psychological and emotional assistance. To assist cancer sufferers across the nation, psychologists, public health specialists, social workers, and government and non-government organisations should step forward to improve quality of life of cancer patients in future.

Keywords- Anxiety, Depression, Cancer, Urinary Bladder, Renal Cancer, Hospital anxiety and depression (HADS)

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Introduction

Cancer is a life changing diagnosis that can take an emotional and psychological toll on patients. As cancer patients cope with the physical and emotional effects of their disease, they may experience anxiety, depression, or other mental health problems. According to projections, there will be over 11 million cancer-related deaths worldwide by 2030 (1). Previous research has shown that depression and anxiety are two types of psychological distress in cancer patients. Various International studies show that between 12% and 40% of all cancer patients suffer from some form of anxiety or depression (2,3). In China, the prevalence of depression (54.90%) and anxiety (49.69%) in cancer patients is higher than in normal adults (depression: 17.50%, Anxiety:18.37%) (4). A cross sectional study in the Indian population evaluated 384 brain cancer patients and observed that most common side effects were mood swings (22.6%) and major depression (10.9%) (5). Similarly, another study used Depression, Anxiety, and Stress Scale (DASS) scores and found more stress in patients (6). Anxiety and sadness can have an impact on cancer treatment. As a result, a person's quality of life (QOL) declines, their ability to recover from sickness may take longer, and their survival is put in danger.

However, anxiety and depression in cancer patient s are often underdiagnosed and untreated. This is because psychological distress is seen in part as a response to a cancer diagnosis (7,8). Addressing psychological problems in cancer patients is important as it may adversely affect their quality of life, treatment and prognosis (9,10). Studies have shown that cancer patients are more likely to experience depression t han the general population.

The prevalence and severity of depression sympto ms vary according to the type of cancer. Addition ally, stress and depression affect treatment and are associated with worse outcomes and shorter survi val in cancer patients (11,12). Bladder and kidney cancer are neoplasms of the urinary tract in addition to other types of cancer (13). Cancer of the kidney is one of the 10 most common cancers found globally. Overall, it is the fourth most common cancer in men and the eighth most common cancer in women. Many kidney cancer patients experience psychologic problems and reactions (14). Lefaucheur et al. (15) showed that 24 patients (10%) from a group of 240 patients were diagnosed with cancer at the time of kidney biopsy or within one year. Compared with other malignancies, urinary bladder cancer and renal cancer have low morbidity and mortality (14), and bladder cancer (67.3%) and renal cancer (62.0%) have a high age standardized 5year relative survival rate (15). The age adjusted incidence of cancer in this group is approximately 10 times higher than in the general population (16). Many studies have linked renal and urinary bladder cancer diagnosis to greater mental health and a lower quality of life (17-19).

Urinary Bladder cancer (BC) and kidney cancer are debilitating diseases that can cause severe stress, such as depression and anxiety (20-21).

Therefore, there is increasing interest in assessing thequalityof life of patients with bladder cancer (2 2–25), such as long-term survival, but often little is known about the psychological problems in the new disease population.

Indeed, patients with urinary bladder and renal cancer experience many stressors, including pain, fatigue, physical changes, and sexual/urinary changes (26,27). Additionally, physical, emotional, and social stress can occur during the first year after a cancer diagnosis. All these unique features can and do lead to mental health problems such as depression, anxiety, and posttraumatic stress disorder (PTSD), which are the most common mental health problems in cancer patients (28,10). However, there are few studies on the evaluation of depression, anxiety, and post-traumatic stress disorder in urinary bladder and renal cancer patients (29,31,32]. More importantly, these psychological disorders can cause physical inactivity, long recovery times, difficulty in managing symptoms non adherence to treatment, and short survival time (29,30,33,34). Therefore, regular examination and appropriate management of these mental disorders is an important part of oncological treatment in cancer patients.

Considering the above issues, this article focuses on research on 1) prevalence of depression and anxiety in Indian patients diagnosed with renal and urinary bladder cancer and secondary objective is to compare the scores of anxiety, depression and socio demographic factors in patients suffering from kidney and bladder cancers using Hospital Anxiety and Depression scale (HADS).

Materials and Methods

2.1 Ethics statement

Data collection was in accordance with the ethical guidelines of the concerned institute.

Written informed consent was obtained from all participants regarding the conduct of the study. We protect the privacy of individuals when processing personal information and keep personal information and accounts confidential.

2.2 Study design and study sample
A cross sectional study was conducted in which all participants were recruited from the Urology Department of a tertiary care hospital in New Delhi. It was an in patient based study.

2.3 Selection of subjects
The study was conducted in a span of 3 months after taking a written consent and 100 patients were assessed. All new registered cases who were diagnosed with renal and bladder cancer were taken into consideration.

2.3.1. Inclusion criteria for this study were as follows:
(1) over 18 years of age, (2) with primary education or higher, (3) diagnosed with pathological cancer, blood or kidney disease, (4) undergoing radiotherapy, chemotherapy/radiotherapy and surgery.

2.3.2 Exclusion criteria included patients
who (1) had a history of mental illness prior to cancer diagnosis and (2) had other cancers. Of the 100 patients with cancer and kidney disease who met the inclusion criteria were assessed, 50 were excluded because they refused to participate in the study.

2.4 Tools of the study
Anxiety and depression symptoms were assessed with the Hospital Anxiety and Depression scale (HADS) (1).

2.5 Measurement of Anxiety and Depression Symptoms
The HADS scale consists of 14 items, and each item is answered on a 4-point Likert-type scale ranging from “Yes definitely” to “No, not at all”. Scoring 0-7 means non cases, 8-10 makes borderline case and more than 11 are cases of anxiety and depression. Higher score means more serious anxiety and depression symptoms.

2.6 Demographic Characteristics
In this study, information on gender, age, marital status, education, employment status, and cancer stage was gathered. "18-35 years," "36-50 years," and "over 50 years" were the categories for age. Higher secondary, graduate, graduation, and above were the several categories for educational levels. Marital status was divided into two categories: married and single. The stages of cancer were labelled "I," "II," and "III."

2.7 Technique of the study
A self-administered questionnaire including HADS was given to the patient after gaining their informed consent. In a discrete setting, the questionnaire was given to each patient and intended to be returned one week following surgery. The HADS is routinely used to assess patients' levels of anxiety and depression. It consists of 14 items and assesses both anxiety (HADS-Anxiety) and depression (HADS-Depression) levels of (HADS-Depression) with a same number of questions.

2.8 Statistical Analysis
SPSS 22 software was used to analyse the data. For HADS anxiety and depression scores, descriptive statistics (mean and standard deviation) were computed. To summarise qualitative data, frequencies and percentages were computed. Other statistical tests, such as the t-test and one way ANOVA, were used to determine the degree of anxiety and depression among patients with renal and urinary bladder cancer.

2.9 Results
This was a three-month hospital-based cross-sectional study involving newly diagnosed renal and urinary bladder cancer patients getting surgical treatment at a tertiary care hospital in New Delhi. The study included patients of both genders over the age of 18 and up to 75 years. During the study period, a sample of 100 cancer patients, 50 of whom had bladder cancer and 50 of whom had renal cancer, were interviewed and screened for anxiety and depression. The severity scores of anxiety and stress according to HADS are shown in Table -1. For the statistical analysis, SPSS 22 was employed.
Table1: HADS (Hospital Anxiety and Depression Scale) Scores for the Assessment of Depression and anxiety in urinary bladder and cancer patients (N=100)

SEVERITY	NON-CASE	BORDERLINE CASE	CASE
HADS DEPRESSION	0-7	8-10	11-21
HADS ANXIETY	0-7	8-10	11-21

The HADS mean anxiety score in renal cancer patients is higher than HADS mean score in bladder cancer patients, according to Table 2, and the difference is highly statistically significant (t=1.98, p=0.00). The HADS mean depression score in renal cancer patients is somewhat (

boarderline) greater than in urinary bladder cancer patients, and the difference is found to be statistically significant (t=1.98 p=0.012).

Table 2 displays the mean, standard deviation, and t-test values for depression and anxiety in patients with urinary bladder and renal cancer.

Group	N	Mean	SD	t	p
HADS- Anxiety (Renal Cancer)	50	10.16	4.70		
HDAS- Anxiety (Bladder Cancer)	50	8.58	5.55	1.98	0.00
HADS- Depression (Renal Cancer)	50	9.74	2.24		
HADS-Depression(Bladder Cancer)	50	8.58	2.27	1.98	0.012

SD- standard deviation; t: independent t test

Table 3 compares the mean scores of HADS anxiety, HADS depression, and socio-demographic factors among renal cancer patients: -

Variables	N	HADS ANXIETY MEAN(SD)	HADS DEPRESSION MEAN (SD)
Gender			
Male	33	1.7(2.8)	1.17(2.3)
Female	17	4.0(4.8)	2.1(2.9)
t		0.91	2.54
p- value		0.01**	0.02*
Age group (in years)			
18-35	4	2.1(1.6)	2.1(2.6)
36-50	23	2.3(1.4)	2.4(2.2)
50 and above	23	2.9(4.4)	2.2(2.6)
F		3.12	0.09
p-value		0.01**	0.91
Marital status			
Married	41	2.2(2.8)	2.2(3.3)
Single	9	1.6 (1.4)	1.6(2.7)
t		0.44	0.41
p-value		0.33	0.67
Education			
Higher Secondary	29	3.8(2.6)	2.4(2.2)
Graduate	15	2.8(3.2)	2.1(3.4)
Graduate and above	6	1.6(2.0)	2.2(1.6)
F		0.80	0.09
p-value		0.71	0.91
Employment status			
Working	39	5.1(5.2)	2.6(1.5)
Not working/retired	11	3.0(4.9)	2.1(1.2)
t		-0.45	-0.34
p-value		0.29	0.41
Cancer stage			
Stage I	17	2.6 (3.2)	0.9(1.4)
Stage II	29	2.9(4.4)	1.7(1.5)
Stage III	2	3.9(2.7)	3.8(2.6)
F		3.14	0.29
p-value		0.01**	0.18

SD- standard deviation; t: independent t test; F: one way ANOVA;
*significance level at 0.05; **significance level at 0.01

The mean scores of HADS- Anxiety (t = 0.91, p = 0.01) and HADS-Depression (t = 2.54, p = 0.02) were stastically different across genders. The mean HADS-Anxiety scoring (t = 3.12, p = 0.01) were found to be substantially different between age groups. Similarly, the mean scores of HADS-Anxiety (t=3.14, p=0.01) and HADS Depression (t=0.29, p=0.18) in renal cancer patients were found to be substantially different between cancer stages.

Participants aged 50 and more, with higher secondary education and working, reported

significantly lower psychologic well-being than their younger, graduated, and retired counterparts. Females had higher HADS-Anxiety and HADS-Depression scores than males.

When compared to single participants, married participants had higher mean scores in HADS-Anxiety and HADS-Depression. Finally, patients with stage iii and stage ii had higher mean scores in HADS-Anxiety and HADS-Depression than patients with stage i (Table 3).

Similarly the HADS Anxiety (t=3.12, p=0.01) mean scores of male and female were found to be statistically more significant than HADS depression (t=0.09, p=0.91) mean scores in urinary bladder cancer patients. The risk of anxiety in cancer stage iii and stage ii was higher as compare to patients who were observed in stage i and found highly statistically significant (t=2.87, p=<0.01). Similarly, HADS depression mean core was found to be statistically significant in different cancer stages (t=2.42, p=0.02). As regard HADS depression and anxiety mean scores for marital status and employment status were not statistically significant. Urinary bladder Cancer group with age 18-35, 50 and above, educated with graduation were observed with more anxiety and depression symptoms as compare to population falls within 35-50 age group (Table 4).

TABLE 4 shows the comparison of mean scores of HADS anxiety, HADS depression and socio-demographic characteristics taken into consideration for urinary bladder cancer patients

VARIABLES	N	HADS ANXIETY MEAN(SD)	HADS DEPRESSION MEAN (SD)
Gender			
Male	37	2.2(1.6)	1.17(2.3)
Female	13	2.3(1.4)	2.1(2.9)
t		3.12	2.5
p		0.01**	0.02*
Age group(in years)			
18-35	2	2.6(1.7)	2.4(2.2)
36-50	18	2.3(1.6)	2.2(1.6)
50 and above	30	2.4(1.8)	2.8(4.2)
F		2.48	0.09
p		0.02*	0.91
Marital status			
Married	45	3.5(4.8)	3.2(4.2)
Single	5	3.2(4.4)	2.7(3.2)
t		0.71	0.57
p		0.77	0.81
Education			
Higher Secondary	15	2.0(1.5)	2.1(1.3)
Graduate	30	2.2(1.4)	2.2(1.6)
Graduate and above	5	2.6(1.4)	2.4(1.4)
t		2.87	3.12
p		<0.01**	0.01**
Employment status			
Working	18	1.6(2.0)	2.0(3.2)
Not working/retired	32	1.8(2.8)	3.1(4.4)
t		-0.51	-0.22
p		0.61	0.91
Cancer stage			
Stage I	22	2.0(1.5)	2.1(1.3)
Stage II	24	2.3(1.4)	2.2(1.4)
Stage III	4	2.6(1.4)	2.6(1.4)
t		2.87	2.42
p		<0.01**	0.02*

SD- standard deviation; t: independent t test; F: one way ANOVA;
*significance level at 0.05; **significance level at 0.01

Discussion

The current study found the presence of psychological disorders mainly anxiety and in about 65-70% of patients diagnosed with urinary bladder and renal cancer. In this study, we discovered that the HADS anxiety mean score was

higher in renal cancer patients than in urinary bladder cancer patients in the Indian population who were undergoing surgical treatment. Another investigation was conducted by Türev Demirtaş et al. observed that psychological illnesses of anxiety, sadness, and stress were present in approximately 90% of kidney and bladder cancer patients (35).

Surprisingly, our data revealed that depressive symptoms were borderline in patients with kidney cancer, affecting their quality of life (QOL) and recovery. However, the population with urinary bladder cancer was shown to be more protective, with fewer signs of sadness. A recent study found that cancer patients are more prone than non-cancer patients to acquire depression, which impairs their QOL and prognosis (36)

The interpretation of HADS scores revealed the presence of anxiety and sadness in individuals with renal and bladder cancer. However, when comparing the HADS anxiety and depression scores of renal cancer and bladder cancer, individuals with renal cancer were shown to be more worried and had fewer depressive symptoms than those with bladder cancer. Another study found that anxiety and despair were common among cancer patients. The authors advocate screening and counselling for anxiety and depression in cancer patients to help them cope with their disease and reduce the negative consequences on their mental health (37).

Long-term and late consequences of cancer treatment are likely to have an impact on cancer survivors' mental health, potentially leading to sadness and anxiety (38). We feel that the limitation of our study is that it is a single centred study and comparison of anxiety and depression scores pre surgery and post surgery has not been included.

Recently, the National Cancer study Institute in the United Kingdom advised that priority study be directed towards the short- and long-term psychological difficulties associated with cancer and its treatment (39). It is obvious that a more personalised strategy to supporting people with cancer's psychological health is required to prevent anxiety and depression, which lead to poor QOL in cancer patients (40).

Conclusion

The purpose of this study was to determine the prevalence of anxiety and depression in patients undergoing therapy for renal and bladder cancer. We discovered that individuals receiving surgery for renal cancer had more prominent anxiety and depression symptoms than those undergoing surgery for bladder cancer. Patients who were more anxious developed severe depression. As a result, anxiety and sadness are more common in cancer patients, resulting in a lower quality of life. According to our findings, cancer patients are more likely to have a variety of psychological disorders, including despair and anxiety among individuals with renal and urinary bladder cancer.

Patients are initially ignorant of their ailments, but after diagnosed, they begin to experience anxiety symptoms. If these symptoms are not identified and managed, they can result in depression during cancer treatment. Cancer causes significant bodily and psychological harm to its patients. In this sense, family members and other relatives must offer both psychological and emotional support.

To assist cancer sufferers across the nation, psychologists, public health specialists, social workers, and government and non-government organisations should step forward to improve quality of life of cancer patients in future. We believe that excellent cancer care necessitates ongoing anxiety and depression screening. It is critical that, following the diagnosis of clinically significant psychological illnesses, appropriate treatment interventions be carried out in order to improve the patients' mental health and quality of life.

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