Prevalence of Depression in Patients with Cancer

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Abstract: Depression is the most prevalent psychological symptoms among patients with cancer but may remain undiagnosed and untreated. Studies in this field are not adequate and there is no large study to evaluate different cancer types. So we planned a survey on measuring depression by means of Beck depression inventory (BDI) and the different associated factors in this group of patients. 249 patients with definite cancer diagnosis referring to pathology department of Shahid Beheshti hospital were evaluated by means of BDI. Age, sex, type of cancer, type of treatment and duration of cancer (through diagnosis) were recorded. Data were analyzed through SPSS software. 21.7 % of the patients were not depressed but 78.3% had different rates of depression. Overall depression score was 12.3 accounts for mild depression. Neither age, sex nor cancer duration correlated with depression scores (all p values >0.05). This study showed a very high prevalence of depression in cancer patients. Although most of them are mildly depressed, it needs to be taken into consideration. This group of patients seems to be neglected and their rest life years are greatly influenced by depression regardless of their age and sex. New policies and strategies are needed for this group of patients.

Key words: Depression · Neoplasms · Prevalence

INTRODUCTION

Studying the psychological effects of cancer diagnosis in patients just has a 2 decade history [1]. This was the time of psycho-oncology merging. This branch of oncology studies the burden of diagnosis, treatment on patients with cancer and educating them about their disease [2]. It also studies the reactions of physicians and family members to all aspects of cancer [3]. Depression is the most prevalent psychological symptoms among patients with cancer [4]. A wide range of depression prevalence has been reported among cancer patients. These rates vary from 1 to 40% in some studies. Depression can be a source of suffering in cancer patients. The physician may be unfamiliar with depression symptoms that may be masked with symptoms that cancer produces; therefor depression can remain undiagnosed and untreated. Besides, physicians may consider symptoms of clinical depression as the normal sadness cancer itself can result. Cancer can normally cause sadness as a normal human feeling. But this sadness has rising and falling periods, furthermore patients gradually accommodate to the circumstance that disease make with

medical staff, friends and family. Patients that suffer from clinical depression may experience impairment of normal social activities and suffer somatic and psychological manifestations of depression [5]. It's been nearly 40 years since Beck introduced an inventory (BDI) for rapid screening of depression. Since then it has been widely used to evaluate depression in different populations [6-10]. A recent Dutch study showed that BDI is an adequate tool for screening depression in patients with cancer [11].

Psychological problems are of great concern in patients with cancer, but studies in this field are not adequate. So we planned to do a survey on measuring depression with BDI and the associations with different factors in this group of patients.

MATERIALS AND METHODS

This cross-sectional study was conducted between 2005 until 2013. The whole study protocol was confirmed by Ethic Committee of Kashan Medical Science University. 266 patients with definite cancer diagnosis, referred to pathology department of Shahid Beheshti

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hospital involved in our study. They were called and asked if they orally consented to participate in our study. They were excluded if one of these conditions existed: psychosis, bipolar disorder, cognitive impairment and substance abuse. Three patients were excluded because 2 had substance abuse and one had bipolar disorder. 263 remained patients' demographic data and cancer course information, like age, sex, type of cancer, type of treatment and duration of cancer (from diagnosis) were recorded and they were asked to complete BDI. After deleting incomplete inventories, we found that only 249 patients thoroughly completed the questionnaire and data were extracted and analyzed.

BDI is a 21 item self-reporting inventory that gives each item 0-3 point, so every patient get a 0-63 score. If they meet 0-9, 10-18, 19-29 and 30-63 they will be labeled as no depression, mild, intermittent or severe depression respectively [11].

Data were studied through SPSS software version 11.5 and analyzed with chi-square test.

RESULTS

The mean age of the 249 enrolled patients were 58 years old (SD=13). 133 patients (53.4%) were male and 116 (46.6%) female. The mean cancer duration (at the time of diagnosis) was 11 months. From these patients 54 (21.7 %) were not depressed but 195 (78.3%) had different rates of depression. The mean BDI score was 12.3, which accounts for mild depression. Statistical analysis revealed that neither age (p value=0.389), sex (p value=0.858) nor cancer duration (p value=0.270) correlated with depression scores (all p values >0.05) (Table 1).

46 patients had GI cancer while there were 43, 31, 25, 20, 20, 16, 15, 12, 6, 6, 5 and 4 patients suffering from breast, lung, testis, skin, metastatic, ovaries, blood, lymphatic system, MM, bladder, liver and brain cancers respectively. By assessing the depression severity in patients with different cancers, in most of patients with skin cancer (65%), depression was not.

Table 1: Depression severity in cancer patients based on sex, age group and cancer duration

Depression severity		None	Mild	Moderate	Severe	Sum	P value
Sex	Male	30 (22.6)	56 (42.1)	35 (26.3)	12 (9)	133	0.858
	Female	24 (20.7)	45 (38.8)	36 (31)	11 (9.5)	116	
Age group (years)	≤39	6 (28.6)	8 (38.1)	7 (33.3)	0 (0)	21	0.389
	40-59	21 (18.9)	41 (36.9)	37 (33.4)	12 (10.8)	111	
	≥60	27 (23.1)	52 (44.4)	27 (23.1)	11 (9.4)	117	
Cancer duration (month)	≤6	25 (21.7)	45 (39.1)	32 (27.8)	13 (11.3)	115	0.270
	7-11	18 (23.1)	29 (37.2)	23 (29.5)	8 (10.3)	78	
	12-23	4 (12.1)	20 (60.6)	7 (21.2)	2 (6.1)	33	
	≥24	7 (30.4)	7 (30.4)	9 (39.1)	0 (0)	23	

Table 2: Depression severity in different cancer type groups

| D.S | | Cancer type | | | | | | | | | | | | | Sum (%) |
		Lu.	Brs.	Tes.	GI.	L.S.	MM.	Ova.	Met.	Blad.	Br.	Sk.	Liv.	Blo.	
No.	#	8	11	4	2	2	0	6	3	0	0	13	0	5	54 (21.7)
	%	25.8	25.6	16	4.3	16.7	0	37.5	15	0	0	65	0	33.3	
Mild	#	12	14	18	19	6	2	9	2	2	2	6	1	8	101 (40.6)
	%	38.7	32.6	72	41.3	50	33.3	56.3	10	33.3	50	30	20	53.3	
Mod.	#	8	16	3	18	3	4	1	9	3	1	1	3	1	71 (28.5)
	%	25.8	37.2	12	39.1	25	66.7	6.3	45	50	25	5	60	6.7	
Sev.	#	3	2	0	7	1	0	0	6	1	1	0	1	1	23 (9.2)
	%	9.7	4.7	0	15.2	8.3	0	0	30	16.7	25	0	20	6.7	
Sum		31	43	25	46	12	6	16	20	6	4	20	5	15	249 (100)

No=No depression, Mild=Mild depression, Mod.=Moderate depression, Sev.= Severe depression, Lu.= Lung cancer, Brs.= Breast Cancer, Tes.= Testis Cancer, L.S.= Lymphatic System malignancies, MM.= Multiple Myeloma, Ova.= Ovaries, Met.= Metastatic Cancer, Blad.= Bladder malignancies, Br.= Brain malignancies, Sk.= Skin Cancer, Liv.= Liver cancer, Blo= Blood cancer, #=Number of patients.
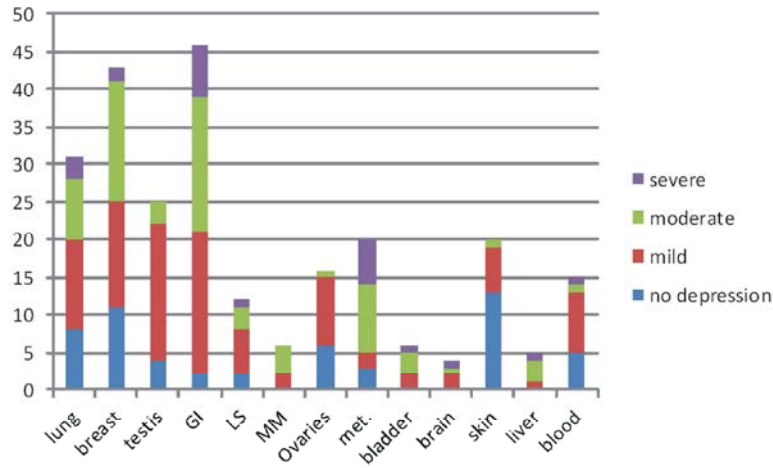
Graph 1: Depression severity in different cancer type groups
GI=Gastro-intestinal, LS= Lymphatic System, MM=Multiple Myeloma
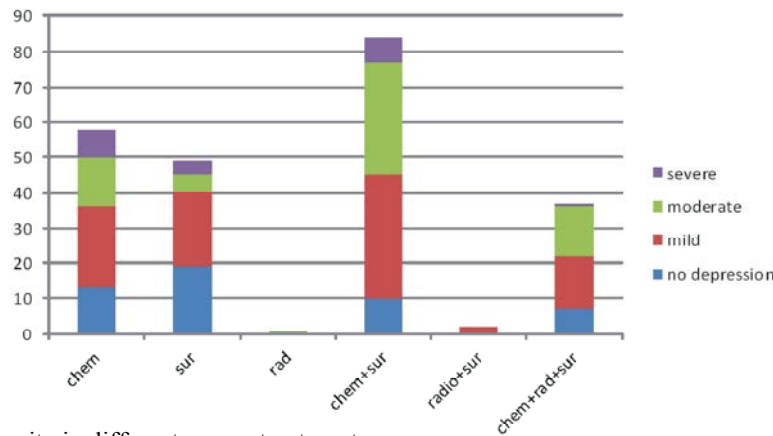
Graph 2: Depression severity in different cancer treatment groups
Chem=chemo-therapy, sur=Surgery, Rad=Radiotherapy.

Most of those having breast cancer, MM, Metastatic, bladder and liver malignancies were moderately depressed and other types of cancer were in mild depression group (Table 2 and graph 2). Patients were mostly mildly depressed in different treatment type groups (except 1 patient of radiotherapy group that had moderate depression) (Table 2 and graph 2).

DISCUSSION

This study assessed the depression severity in 249 cancer patients by means of BDI. Overall depression score was 12.3 accounts for mild depression. Depression severity in different types of cancer was not the same. There are studies that evaluate depression levels in cancer patients but there are no studies that correlate it with cancer treatment types. Another study in our region showed a 60% of depression in cancer patients although other studies showed half of these rates in their countries while our results showed 78.3% of depression in our center [12]. Another study by Tebbi *et al.* [13] had much lower rates of depression in 30 cancer patients, just 13% of patients had moderate depression and no patient had severe depression. Age and Gender differences were not observed in depression levels in the study, like our study. Our results showed that cancer patients having cancer less than 24 month (from diagnosis) are mostly mildly depressed compared to the patients with cancer duration more than 24 months that are mostly moderately depressed (Table 1). This means that cancer duration more than 24 years affects depression level and worsens it.

Medeiros *et al.* [14] studied a group of 50 breast cancer patients and found that most of patients (56%) have no depression and mild, moderate and severe depression are seen in 18, 22 and 4 % of these patients.

Although severe depression was seen in 4.7% of our patients, similar to the results of the mentioned study, But moderate, mild and patients with no depression made 37.2, 32.6 and 25.6% of our results. These results showed that breast cancer group needs more attention in medical health policies of our center. In different ways, any society faces this kind of cancer may be another factor for our patients to have higher rates of depression. The women may be abandoned after the cancer manifestations in our society. Higher costs of beauty surgery centers in our community may also be another reason.

In a study by Frick *et al.* [15], the rate of severe depression in cancer patients undergoing radiation therapy was 9.5% and our results showed a similar rate 9.2 %. Another study by Mehnert *et al.* [16] who reported overall 24% rate of depression in cancer patients, which is too less than our 87% rate of depression, although they used DSM criteria to diagnose depression, higher rates of depression in our study is obvious.

Harrison *et al.* [17] indicated that depression is less prevalent in younger cancer patients, comparing to elders, although newly diagnosed patients with cancer were evaluated in the study. In our study no difference were observed between different age groups. We did not compare patients younger than 2 month with the elders and this may be a pitfall of our study. The level of depression may correlates with age and as the age increases the patients more and more tend to suffer from depression [18]. But in our study there is no difference between different age groups and genders. This may be because old patients are highly supported by their families in this region.

This study showed very high prevalence of depression in cancer patients. Although most of them are mildly depressed, it needs to be taken into consideration. This group of patients seems to be neglected and their rest life years are greatly influenced by depression regardless of their age and sex. New policies and strategies are needed for this group of patients.

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