

Original Article

Anxiety and Depression in Lung Cancer Patients

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Abstract

Introduction: Cancerous diseases are a major health problem and accompanied by a high psychiatric morbidity.

Objectives: It was to investigate two major mental health disorders, anxiety and depression in patients with lung cancer.

Materials and Methods: One hundred and twenty eight patients of a provincial general hospital filled in the Depression, Anxiety and Stress Scale 21 (DASS). Descriptive statistics and inferential statistics was performed. SPSS 17.0 was used for analysis. Statistical significance was set at $p=0.05$.

Results: Men were 55.5 %. The estimation of depression in the sample 21.8%, while anxiety was estimated at 17.9%. Statistically significant correlations were observed between depression and hospitalization, with patients being hospitalized exhibiting almost doubled rates of severe depression (34% vs 14%).

Conclusion: Patients suffering from lung cancer exhibit high levels of anxiety and depression. Hospitalization is associated with higher rates of anxiety and depression and appropriate interventions are necessary.

Key words: Lung cancer, anxiety, depression, hospitalization.

Introduction

Cancer is a major health problem in the developed countries. It is estimated that 1 in 4 deaths is due to malignancy. In particular, lung cancer is considered the most common

cancer worldwide both in terms of incidence and mortality, while in the United States, cancer of the lung and bronchus ranks second in both genders (Cruz et al., 2011; Institut Jules Bodet, 2015).

The prevention and treatment of psychological morbidity in cancer patients as well as the identification of patients with possible mental disorders may lead to the implementation of specific interventions. Transient mood disturbances occur frequently among cancer patients during the disease trajectory, and depression often persists in these patients (Mehta & Roth 2015). Depression is the most common psychiatric diagnosis in cancer patients, and occurs in approximately 20% of patients. The inability to recognize and assess the comorbidity of psychiatric conditions may lead to serious consequences such as inability to comply with the therapeutic intervention. One of the issues concerning researchers is the different perception of the patients' psychological state that both patients and the doctors have (Trichopoulos 1996; DeFlorio & Massie 1995; Ginsberg et al., 2001; Miovic & Block 2007)

Depression in particular frequently remain underdiagnosed and undertreated in the cancer setting, despite its prevalence and the suffering it imposes on cancer patients (Vodermeier et al., 2009; Die Trill 2012).

In order to investigate the extent of cancer patients' depression and anxiety, questionnaires and scales have been created aiming at the truth as far as possible. However, on several occasions clinicians, relatives and healthcare personnel cannot accept the use of calculation scales for psychopathological symptoms due to factors such as the perception that depression is a normal reaction to the dreadful disease and therefore it cannot be addressed and it is not realistically measurable (Vodermeier et al., 2009; Rosenstein 2011).

The purpose of this study was to investigate the frequency of two major mental disorders, i.e. stress and depression, in patients with lung cancer who were observed in the oncology department of a secondary hospital in the Greek province.

Materials and Methods

The study was conducted at a General Hospital of a provincial town. The hospital operates an Oncology Clinic with a capacity of 12 beds and a Day Hospitalization Unit with 11 beds. This study was conducted in

patients with lung cancer who visited the outpatient department, were hospitalized or treated in the Oncology Clinic, with concomitant retrospective study of the medical records of the clinic, over a period of 4 months. The hospital's ethical committee approved the study. Informed consent was obtained and patients filled in the questionnaires anonymously. It was explained to them that the questionnaires were administered for purely research purposes, their answers would not affect in any way the choice of treatment. Nobody refused participation.

One hundred and twenty eight patients with lung cancer who were followed up for their disease in the oncology department were enrolled in the study. All the patients surveyed had undergone chemotherapy treatments lasting at least 3 months. The following cases of patients were excluded from the study:

- illiterate patients
- patients with known history of psychiatric disorders, which may be evidenced by respective medical reports or medications
- patients who are unable to communicate

The questionnaire DASS 21 (Depression, Anxiety and Stress Scale 21-Greek version) was used. This questionnaire consists of 3 groups of 7 questions. Each of these groups measures the degree of depression, anxiety and stress. The depression sub-scale evaluates the degree of discomfort, despair, low self-esteem, lack of interest and anhedonia. The anxiety sub-scale evaluates the condition of the muscles, the emotional anxiety disorder and the subjective feeling of anxiety. Each question has 4 choices which are rated from 0-3. The overall result for each disorder separately ranges from 0-21 (Taylor et al., 2005). Then the result is doubled and the final score is calculated. Regarding depression, the values 0-9 are normal. Values 10-13 indicate mild forms of depression, values 14-20 low forms of depression, while values 21 and above indicate serious depression. Regarding anxiety, the values 0-7 are normal. Values 8-9 indicate mild forms of anxiety disorder, values 10-14 low forms of anxiety disorder,

while values 15 and above indicate serious anxiety disorder. For convenience, mild and low forms of mental disorders were considered as one entity. They indicate people with impaired scores on tests that may not meet the criteria for definitive diagnosis (psy.unsw.edu.au 2015).

Statistical analysis

The statistical analysis of the results was conducted with the statistical package SPSS.17.0. For the description of sociodemographic features, complications and psychometric characteristics of the sample, frequency tables were constructed and percentiles were used. Based on the total score of the DASS questionnaires three scales for anxiety and depression resulted (Normal values, mild and severe symptoms). Comparisons between the sub-categories of DASS and the binary variable of hospitalisation were performed with the statistical test χ^2 . The level of statistical significance was set at 5% ($p < 0.05$).

Results

Most patients were men (55.5%, $n=71$). Thirty five individuals have been hospitalized during last month, while 18% ($n= 23$) have undergone surgery (Table 1). Patients' lung cancer stages are shown in table 2. Most patients were in stage one or two (cumulative 53.1% $n=68$).

The estimation of severe depression in the sample was 21.8% ($n=28$), while severe anxiety was estimated at 17.9% ($n=23$).

Statistically significant difference was observed in DASS depression scale depending on the severity and the history of previous month hospitalisation. Of patients hospitalised during the previous month, the 34.2% (12/35) met criteria for severe depression, compared with the 17.9% (16/93) of those without hospitalization – p value = 0.040 (Table 3).

Although no statistically significant difference at $p=0.05$ was observed in DASS anxiety scale compared to the history of hospitalisation of the previous month, 28.5% (10/35) of the hospitalised patients had severe anxiety compared with the 13.9% (13/93) of those with no hospitalization, a fact reflected

at a rather marginal p -value: $p=0.074$ (Table 4).

Discussion

According to the results of this study, patients with lung cancer exhibit high rates of anxiety and depression, similar to those reported in international studies. About 50% of patients with advanced cancer meet criteria for a psychiatric disorder, the most common being adjustment disorders (11%–35%) and major depression (5%–26%) (Mehta & Roth 2015). Of note, depression remains undiagnosed in 20-25% of cancer patients, percentage reaching the 80% in the group of end stage patients (Die Thrill 2012). Dugan et al (1998) found an incidence of depressive symptoms of 35% in ambulatory patients with various types of cancer in different stages of the disease. In hospitalized patients this rate exceeds the 50%. Better rates are observed in ambulatory patients with gynaecologic cancers, as they approach those of the general population (Dugan et al, 1998). Overall, however, it is estimated that 25% of cancer patients exhibit severe symptoms of depression or major depression, without a predominance of women, as would be the case with the general population (DeFlorio & Massie 1995). In the Greek study with patients of the pathological and surgical field the incidence of depression found reached 29% with a predominance of women and workers in the service sector (Lykouras et al., 1989).

There seems to be a bidirectional relationship between depression and cancer morbidity/mortality. The disease itself and the patient's stress induce depressive symptoms, while the depression increases, directly or indirectly, the risk of death and hospitalization in cancer patients, as does in patients with other chronic diseases. It is speculated that depression acts directly reducing the reserves of the immune system or causing hormonal changes that suppress its function. Indirectly, depression can reduce the patients' chances of survival because it affects their lifestyle or their compliance with the instructions of their doctors resulting in them not following their treatment properly (Reiche et al., 2004).

Table 1. Demographic and nosological features of the sample

Variables	N	%
Gender		
Women	57	44,5
Men	71	55,5
Total	128	100,0
Previous month hospitalization		
No	93	72,7
Yes	35	27,3
Total	128	100,0
Surgery		
No	105	82,0
Yes	23	18,0
Total	128	100,0

Table 2. Patients' lung cancer stages

Stage	N	%
I	36	28,1
II	32	25,0
III	39	30,5
IV	21	16,4
Total	128	100,0

Table 3. Association between depression (DASS) and hospitalisation

		DASS_ Depression			
		Normal values	Mild	Severe	Total
Hospitalisation	NO	50 (53.8%)	27 (29.0%)	16 (17.2%)	93 (100.0%)
	YES	11 (31.4%)	12 (34.3%)	12 (34.3%)	35 (100.0%)
Total N=128					
Pearson Chi-Square =6.284,p=0.043					

Table 4. Association between anxiety (DASS) and hospitalisation

		DASS_ Anxiety			
		Normal values	Mild	Severe	Total
Hospitalisation	NO	56 (60.2%)	24 (25.8%)	13(14.0%)	93 (100.0%)
	YES	14 (40.0%)	11 (31.4%)	10 (28.6%)	35 (100.0%)

Total N=128

Pearson Chi-Square
=5.208,p=0.074

Depression aggravates the prognosis in cancer patients. Depression has been found to be a predictor of treatment in women with breast cancer, regardless of their age, the stage of disease, or the time elapsed since the diagnosis (Oleske et al., 2004).

The study of Prieto et al, involving patients who underwent bone marrow transplant found that, after the confounding effect of other factors had been taken into account, major depression was positively correlated with high mortality 1 and 3 years after transplantation (Prieto et al., 2005). In another study, it has been found that patients with depressive symptoms had 25% higher death rates, whereas in cancer patients who had been diagnosed with mild or severe depression, the mortality was 39% higher than in cancer patients who had no symptoms of depression. The increased death rates due to depressive states remained even after taking account of other clinical features affecting the survival of cancer patients (Satin et al., 2009).

The high percentage of disorders in this study highlights the risk of underestimation of depression and anxiety in cancer patients and the need for similar interventions aimed at achieving what Weissman and Hackett call "appropriate death" (Weisman & Hackett 1961). Prerequisites for this is to relieve the person from pain and satisfy the principles consistent with his ideals. Psychotherapeutic interventions, including education, behavioral training, group interventions, and individual psychotherapy, show significant improvements in distress, anxiety, and quality of life in cancer patients. Effective communication involves active listening,

exploring emotion and meaning, addressing prognosis, and discussing end-of-life issues (Miovic 7 Block 2007). The care and effort to provide the best quality of life to the patient should be a key concern of the healthcare professional, until the last breath of the patient.

Limitations of the study

Apart from the questionnaires, no psychiatric interview was conducted, which could provide additional information on both the current psychological state and the psychiatric history of patients, even if there was no official record of psychiatric illness in the past in the booklets of patients in the study. Also, the question of hospitalisation concerned only the last month, while control group was not used. The results, although indicative of the psychic burden of cancer patients, involve patients with lung cancer monitored in a provincial general hospital and their generalisation should be done cautiously.

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