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Evaluating Depression, Anxiety, Sexuality and Quality of Life in Metastatic Lung Cancer Patients

Metastatik Akciğer Kanseri Hastalarında Depresyon, Anksiyete, Cinsellik ve Yaşam Kalitesinin Değerlendirilmesi

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ÖZET

Amaç: Akciğer kanseri kısa yaşam beklentisi ve agresif tedavi seçenekleri nedeniyle hastaların hem yaşam kalitesini hem de psikoseksüel durumlarını etkilemektedir. Bu çalışmanın amacı akciğer kanseri hastalarında anksiyete, depresyon, cinsel doyum durumu ve yaşam kalitesinin değerlendirilmesidir.
Yöntemler: Birinci veya ikinci sıra kemoterapi alan metastatik akciğer kanseri hastalarıyla yüz yüze anketler yapılarak bilgiler toplanmıştır. Kullanılan anketler sosyodemografik karakteristikleri, Beck Depresyon Anketini (BDI), Golombok-Rust Cinsel Doyum Anketini (GRISS) and European Organization for Research on Treatment of Cancer Questionnaires-C30 Yaşam Kalitesi Anketini (EORTC-QoL-C30) içermektedir.
Bulgular: Bu çalışma 44 hastanın anket verilerini içermektedir. Hastaların anksiyete ve depresyon durumu için toplam Beck skoru çok yüksek çıkmıştır (sırasıyla; 15.60 ± 12.30 ve 16.02 ± 11.39). Metastatik akciğer kanseri hastalarımızın GRISS skorları anksiyete ve depresyon durumlarına göre değerlendirildiğinde herhangi bir istatistiksel anlamlılık bulunamamıştır. Hastalarımızdan anksiyete ve depresyon skorları yüksek olanlarda EORTC-QLQ-C30'un fiziksel, bilişsel, duygusal ve sosyal fonksiyonları istatistiksel olarak anlamlı şekilde düşük bulunmuştur. Rol fonksiyonu açısından sadece yüksek anksiyete skorlu hastalarda istatistiksel anlamlılık saptanmıştır.
Sonuç: Metastatik akciğer kanserli hastalarda yüksek anksiyete ve depresyon durumu, azalmış cinsel doyum ve bozulmuş yaşam kalitesi izlenmiştir.
Anahtar Kelimeler: Metastatik akciğer kanseri, depresyon, anksiyete, cinsellik, yaşam kalitesi

ABSTRACT

Introduction: Lung cancer (LC) affects psychosexual outcome and quality of life (QoL) of the patients because of short survival period and aggressive treatment modalities. The aim of our study was to investigate anxiety, depression, QoL and sexual satisfaction levels of LC patients.
Methods: The data for metastatic LC patients treated with first or second-line chemotherapy were collected by using four forms completed during face-to-face interviews. The forms consist of socio-demographic characteristics, the Beck Depression Inventory (BDI), Golombok-Rust Inventory of Sexual Satisfaction (GRISS) and European Organization for Research on Treatment of Cancer Questionnaires Quality of Life-C30 (EORTC-QoL-C30).
Results: Forty-four LC patients were participated in this study. The total Beck scores of patients for anxiety and depression were very high (15.60 ± 12.30 and 16.02 ± 11.39; respectively). When we evaluated GRISS scores of our metastatic LC patients with respect to their anxiety or depression levels, we could not find any statistical significance. In the metastatic LC patients whose anxiety and depression scores were high, physical, cognitive, emotional and social functioning of EORTC-QLQ-C30 was found statistically significantly low. Statistical significance in terms of role functioning was only found in the patients with high anxiety scores.
Conclusion: Metastatic LC patients had high anxiety and depression levels, decreased sexual satisfaction and impaired QoL.
Keywords: Metastatic lung cancer, depression, anxiety, sexuality, quality of life

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Introduction

Lung cancer (LC) is the most common cancer in the worldwide. Patients with lung tumors have a poor prognosis with 41% of patients surviving 1 year and only 15% surviving 5 years (1). The mechanisms through which lung cancer and its treatments affect patients' performance status and sexual desire are likely multifactorial; including physical, biological and psychological factors (2). Beyond the direct impact of lung cancer on patients, treatment itself may cause disstress, depression, anxiety and fear contributing to poor health outcomes. As a whole, because of the negative effects of cancer or its treatment, increasing quality of life (QoL) and emotional intimacy of these patients are very important (3).

Due to the decreased survival of LC patients, very few studies focused especially on sexual functioning during their treatment period (4,5). So, little is known about the effects of lung cancer or chemotherapeutics on intimate and sexual relationships. Additionally, chemotherapy can cause several physical sexual problems, such as erectile dysfunction and ejaculatory failure, and emotional changes that affect lives of LC patients (6,7). Alterations in physical appearance may also play an important role in sexuality of the patients with lung cancer receiving chemotherapy and influence their sexual identities. The impact of treatment with chemotherapy on appearance, self-esteem, and sexuality has been associated with decreased QoL and mental distress (8). Therefore, it is important to recognize the consequences of chemotherapy on sexual desire and counsel LC patients about their sexual activities are important aspects in providing comprehensive care.

Most of the lung cancer patients treated with chemotherapy have deterioration in QoL which is defined within five dimensions; physical well-being, material well-being, social well-being, emotional well-being, and, development and activity (9). However, physicians may sometimes ignore the importance of sexuality and social relationships for quality of life in LC patients. In this study, we aimed to examine anxiety, depression, changes in sexual functioning and QoL of the LC patients during their treatment period.

Patients and Methods

Patient Selection

Forty-four male metastatic LC patients with Eastern Cooperative Oncology Group performance status 0-1 and who was having treatment for first or second-line chemotherapy in medical oncology clinics of Izmir Tepecik Training and Research Hospital, Izmir Katip Celebi University Atatürk Research and Training Hospital and Manisa Government Hospital between January 2015 and February 2016 were included in this study. Patients with poor performance status (ECOG≥2), old age (>70) or receiving chemotherapy in the adjuvant stetting were excluded.A series of forms completed during face-to-face interviews by trained interviewers for determination of the sexual satisfaction, psychological status and quality of life of the patients were used. All of the participants were informed about the study and informed written consent was applied.

Forms Completed

In our study, there were four forms which were completed by the participants. In the first form, questions about the demographic characteristics of the patients were present.

Beck Depression Inventory (BDI) was the second form. It is composed of questions developed to measure the intensity, severity, and depth of depression in patients with psychiatric disorders. BDI included 21 questions or items, each with 4 possible responses. In order to indicate the severity of the symptom, each response is assigned a score ranging from zero to three. The questions of BDI assess mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, body image, work difficulties, insomnia, fatigue, appetite, weight loss, bodily preoccupation, and loss of libido. BDI was translated into Turkish and its reliability was recalculated by Tegin and Hisli (10,11). Items 1 to 13 assess symptoms that are psychological in nature, while items 14 to 21 assess more physical symptoms (12).

The third form was the *Golombok-Rust Inventory of Sexual Satisfaction* (GRISS). The

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GRISS is composed of 28-item questionnaire used to assess the presence and extent of sexual problems (13). It includes 12 subscales evaluating impotence, premature ejaculation, orgasmic disorder, vaginismus, lack of communication, avoidance in males and females, nonsensuality, insensitivity and dissatisfaction. In any category, a score of 5 points or higher indicates sexual dysfunction. A validation and reliability study of the GRISS in Turkish population was performed by Tugrul et al (14).

The fourth form was *European Organization for Research on Treatment of Cancer Questionnaires Quality of Life-C30* (EORTC-QoL-C30). In this form, there are 30 items divided into three major domains that measure the quality of life of cancer patients: functional scales, global health/quality of life and symptom scales (15). Functional scales consist of physical (five items), social (two items), emotional (four items), role (two items) and cognitive (two items) items. Quality of life scale consists of two items. There are also nine symptom scales which were not included in our analysis (16).

Statistical Analysis

The data was analyzed by using SPSS for Windows version 20.0. A value of $p<0.05$ was considered as significant. Descriptive statistics summarized frequencies and percentages for categorical variables, mean and standard deviation for continuous variables. For independent samples, T-tests were used to compare categorical variables.

Results

The median age of metastatic lung cancer survivors was 53.9 (range: 36-66). Thirty of 44 had received chemotherapy in the first-line while the rest had in the second-line treatment. About 6.8% of the LC patients had university educations. Thirty % of the lung cancer patients had members with cancer in their family before. Most of the patients (86.4%) were smoker. Nearly almost all of the patients were married (95.5%). Demographic variables of the patients were shown in *Table 1*.

In the validation study of BDI in Turkey, the cut off value of anxiety is defined as ≥8 and the cut off value of depression is defined as 10. The total Beck scores of lung cancer patients for anxiety were 15.60 ± 12.30 and for depression were 16.02 ± 11.39. In our study, the depression rate of LC patients was 68.2% (n:32) and anxiety rate was 75% (n:34) respectively.

When the patients' GRISS scores were evaluated with respect to their anxiety or depression levels, we could not find any statistical significance in our metastatic lung cancer patients. The mean GRISS scores of lung cancer patients were shown in *Table 2*. The mean GRISS scores of our patients according to their anxiety and depression levels were shown in *Table 3*.

Table 1: Socio-demographic variables of the patients

Socio-demographic Characteristics	**Patients (n=44)**
Age (mean±SS) (min-max)	53.9 ± 7.56(36-66)
Education	
Primary Education	5 (11.4%)
High School	36 (81.8%)
University	3 (6.8%)
Marital status	
Married	42 (95.5%)
Single	2 (4.5%)
Cancer History of Family	
Yes	13 (29.5%)
No	31 (70.5%)
Smoking History	
Yes	38 (86.4%)
No	6 (13.6%)
Alcohol History	
Yes	30 (68.2%)
No	14 (31.8%)
Lung Cancer Surgery	
Yes	17 (38.6%)
No	27 (61.4%)

In the metastatic lung cancer patients whose anxiety scores were high, physical, role, cognitive, emotional and social functioning subscores of EORTC-QLQ-C30 was found statistically significantly low. In the metastatic lung cancer patients whose depression scores were high, physical, cognitive, emotional and social functioning subscores of EORTC-QLQ-C30 were found statistically significantly low. There was not any significant difference in terms of global quality of life scores. The mean

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EORTC-QLQ-C30 scores of our patients were shown in *Table 4*. The mean EORTC-QLQ-C30 scores of our patients according to their anxiety and depression levels were shown in *Table 5*.

Discussion

In our study, the depression and anxiety rates of our metastatic patients were very high (68.2%, 75%; respectively) and most of the patients had high psychological distress as expected. They were affected in terms of anxiety and depression mostly because of the short life-expentancy (17). Cataldo et al also found high anxiety, depression and symptom severity in metastatic lung cancer patients (18). In another study conducted by Haun, not only lung cancer patients but also their partners are prone to high levels of depression and anxiety or severe distress related to the poor prognosis of the illness (19). In advanced lung cancer patients, the changes of the severity of psychological distress was also investigated and moderate to severe depressive symptoms were found almost three times more common in the final 3 months of life (20). In addition to the chemotherapy duration, the place where cancer patients recieve chemotherapy may also be important. Delibegovic et al reported that when they treated the lung cancer patients at the Palliative Care Centre, they found that their high levels of anxiety and depression scores were significantly reduced and they represented a better way of treatment than treatment at home (3).

Table 2: The mean scores of Glombock-Rust Sexual Satisfaction of the patients

	Patient score
Frequency	5.08 ± 1.78
Communication	4.47 ± 2.30
Satisfaction	3.70 ± 1.91
Avoidance	5.65 ± 1.03
Touch	3.77 ± 2.27
Premature Ejaculation	5.02 ± 1.67
Erectile Dysfunction	6.0 ± 1.12

When we evaluated our patients' sexuality in terms of their depression and anxiety scores, we could not find any significant relation between the patients with low and high depression and anxiety scores. However, their GRISS scores were very high which means sexual dysfunction. This may be due to the psychological factors other than their mood disorders which may play an important role in sexuality of LC patients as well as their toxic treatments. Limited number of the studies was focused on sexual functioning during the treatment of patients with metastatic lung cancer. Because this was a cancer in which the mortality was too high. Besides, patients with lung cancer receiving chemotherapy can be affected by changes in appearance, self-esteem, and sexuality, and therefore may need sexual counseling (6). Lindau et al evaluated the communication about intimacy and sexual relationships for couples affected by lung cancer. They found that couples described negative effects which were driven by cancer or its treatment, including physical and psychological effects, and positive effects included an increase in non-coital physical closeness and appreciation of the spouse (4). Reese et al assessed the sexual concerns in patients with lung cancer and concluded that sexual concerns were common and stable, with 52% of patients reporting at least mild sexual concerns which were basically related to physical and emotional symptoms. They also found an association between age, gender and distress causing sexual symptoms in this population (5). In another study, researchers investigated changes in sexual functioning for lung cancer patients having treatment and determined baseline sexual function below-normal which was also worsened over time (7). According to this analysis, age was found to be a significant factor affecting sexual function.

Quality of life is usually associated with physical, phycological, sexual and social factors of cancer patients (21). We found that the presence of anxiety and depression in metastatic lung cancer patients deteriorated nearly all of these QoL functional scales

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except the global quality of life. For this reason, we have to consider rehabilitation of lung cancer patients in every stage of their disease. In a prospective study examining patients with advanced stage LC, depression and anxiety which was present in one-third of the cohort were associated with decreased QoL scales, and depression was independently associated with treatment adherence and with poor prognosis (2). Chen et al analyzed the effects of the walking exercise programme on anxiety, depression and cancer-related symptoms in patients with lung cancer and found that it is an effective intervention method for managing anxiety and depression in lung cancer (22).Similar to this study, Quist et al showed that a 6-week hospital-based supervised and structured exercise program, patients with advanced-stage lung cancer improved their physical capacity, functional capacity, anxiety level, and emotional well-being (23).In advanced lung cancer patients, poor performance status and psychological distress was found to be related with fatigue (24). So, by decreasing fatigue with exercise, both functional and psychological functions of the patients can be improved.

Table 3. The mean GRISS scores according to anxiety and depression levels of the patients

	Patient score	P		Patient score	P
Frequency			**Frequency**		
Anxiety ≥ 8	5.87 ± 1.80	0.734	Depression ≥ 10	6.01 ± 1.76	0.126
Anxiety < 8	5.66 ± 1.77		Depression < 10	5.21 ± 1.71	
Communication			**Communication**		
Anxiety ≥ 8	4.53 ± 2.27	0.803	Depression ≥ 10	4.56 ± 2.11	0.711
Anxiety < 8	4.33 ± 2.49		Depression < 10	4.28 ± 2.75	
Satisfaction			**Satisfaction**		
Anxiety ≥ 8	3.93 ± 2.06	0.190	Depression ≥ 10	3.96 ± 1.97	0.186
Anxiety < 8	3.08 ± 1.31		Depression < 10	3.14 ± 1.70	
Avoidance			**Avoidance**		
Anxiety ≥ 8	5.71 ± 1.17	0.398	Depression ≥ 10	5.76 ± 1.16	0.318
Anxiety < 8	5.50 ± 0.52		Depression < 10	5.42 ± 0.64	
Touch			**Touch**		
Anxiety ≥ 8	3.96 ± 2.30	0.356	Depression ≥ 10	3.76 ± 2.20	0.980
Anxiety < 8	3.25 ± 2.17		Depression < 10	3.78 ± 2.48	
Premature Ejaculation			**Premature Ejaculation**		
Anxiety ≥ 8	5.31 ± 1.59	0.060	Depression ≥ 10	5.33 ± 1.68	0.072
Anxiety < 8	4.25 ± 1.71		Depression < 10	4.35 ± 1.49	
Erectile Dysfunction			**Erectile Dysfunction**		
Anxiety ≥ 8	6.09 ± 1.14	0.371	Depression ≥ 10	6.13 ± 1.13	0.253
Anxiety < 8	5.75 ± 1.05		Depression < 10	5.71 ± 1.06	

GRISS: Golombok-Rust Inventory of Sexual Satisfaction

Table 4. The mean scores of EORTC-QLQ-C30 function scales of the patients

	Patient score
Physical functioning	57.9 ± 24.54
Role functioning	71.09 ± 31.2
Cognitive functioning	77.5 ± 25.3
Emotional functioning	68.47 ± 27.33
Social functioning	68.81 ± 25.11

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Global quality of life	53.93 ± 29.54

Table 5. The mean EORTC-QLQ-C30 scores according to anxiety and depression levels of the patients

	Patient score	P		Patient score	P
Physical functioning			**Physical functioning**		
Anxiety ≥ 8	49.31 ± 21.04	**0.000**	Depression ≥ 10	53.23 ± 22.16	**0.064**
Anxiety < 8	80.83 ± 17.82		Depression < 10	67.92 ± 27.15	
Role functioning			**Role functioning**		
Anxiety ≥ 8	62.81 ± 31.85	**0.000**	Depression ≥ 10	65.86 ± 30.17	0.105
Anxiety < 8	93.16 ± 14.92		Depression < 10	82.20 ± 31.59	
Cognitive functioning			**Cognitive functioning**		
Anxiety ≥ 8	70.06 ± 25.87	**0.000**	Depression ≥ 10	71.30 ± 26.90	**0.005**
Anxiety < 8	97.33 ± 6.22		Depression < 10	90.64 ± 15.51	
Emotional functioning			**Emotional functioning**		
Anxiety ≥ 8	61.81 ± 27.79	**0.001**	Depression ≥ 10	58.93 ± 26.92	**0.000**
Anxiety < 8	86.25 ± 16.38		Depression < 10	88.92 ± 13.89	
Social functioning			**Social functioning**		
Anxiety ≥ 8	61.75 ± 24.41	**0.001**	Depression ≥ 10	61.93 ± 24.36	**0.006**
Anxiety < 8	87.66 ± 15.91		Depression < 10	83.57 ± 20.46	
Global quality of life			**Global quality of life**		
Anxiety ≥ 8	55.09 ± 28.10	0.675	Depression ≥ 10	53.79 ± 29.32	0.966
Anxiety < 8	50.83 ± 34.20		Depression < 10	54.21 ± 31.11	

Our study, although conducted in a limited number of patients, emphasized that depression and anxiety rates of metastatic LC patients were very high. Symptoms of depression and anxiety are frequently seen after the diagnosis of LC and may deteriorate both health-related QoL and survival (25,26). Additionally, diagnosis of this type of mostly incurable cancer increases their psychological distress including sexual dysfunction. Therefore, we have to deal with all problems of metastatic lung cancer patients while treating them with chemotherapeutics. Their state of anxiety, depression and sexual satisfaction needs to be assessed as frequently as possible. When there was significant depression or anxiety, we have to refer them for psychosocial treatment in order to improve their quality of life.

Conflict of Interest: None

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