Original Article

Access this article online

Quick Response Code:

Website: www.eurasianjpulmonol.com

DOI: 10.4103/ejop.ejop_30_18

Assesment of symptom burden and related factors of patients with lung cancer in a palliative care unit

Derya Kizilgöz, Havva Yeşildağlı, Pinar Akin Kabalak, Tuba İnal Cengiz, Ülkü Yilmaz

ORCID:
Derya Kızılgöz: https://orcid.org/0000-0001-9304-216X
Havva Yeşildağlı: https://orcid.org/0000-0001-9963-9004
Pınar Akın Kabalak: https://orcid.org/0000-0002-4087-7048
Tuba İnal Cengiz: https://orcid.org/0000-0002-7960-1604
Ülkü Yılmaz: https://orcid.org/0000-0003-1493-8385

Abstract:

INTRODUCTION AND AIM: Symptom palliation is important in terms of improving quality of life and therapy compliance in patients diagnosed with lung cancer. In this study, we intend to describe the tumor symptoms and related factors with Edmonton Symptom Assessment Scale (ESAS) in patients who admitted to a palliative care unit.

MATERIALS AND METHODS: Two hundred and ninety patients with lung cancer who admitted to our tertiary outpatient palliative clinic were retrospectively reviewed. Pathological diagnosis, stage, demographic features, comorbidities, treatment modalities, and ESAS score were recorded. Survival was analyzed using Kaplan–Meier analysis.

RESULTS: There was no relation between stage of disease and ESAS score. The mean sleep variance score was significantly higher in Stage IV patients compared to all other groups ($P = 0.038$). The scores of cough and how they felt themselves were significantly higher in patients with metastatic lymph node ($n = 30$; $P = 0.016$ and $P = 0.027$, respectively). The presence of diabetes mellitus was found to be significantly related to higher sadness and anxiety score ($P = 0.046$ and $P = 0.023$, respectively). Treatment modalities (Group 1: best supportive care [$n = 22$] and Group 2: others [$n = 268$]) did not affect the mean ESAS score ($P > 0.05$). The overall survival and mean ESAS score were not related ($P > 0.05$).

CONCLUSION: ESAS contributes significantly to improve general medical condition of patients with lung cancer. Comorbidities should be considered along with ESAS during cancer management. Symptom score evaluation and proper palliative treatment is important in lung cancer patients. Anyway, the treatment period of lung cancer is already difficult enough, so physicians should facilitate this process for patients.

Keywords:

Edmonton Symptom Assessment Scale, lung cancer, palliative care, survival

Ankara Atatürk Chest Disease and Thoracic Surgery Teaching and Research Hospital, Keçiören, Ankara, Turkey

Address for correspondence:
Dr. Derya Kizilgöz, Atatürk Chest Diseases and Thoracic Surgery Education and Research Hospital, Keçiören, 06280, Ankara, Turkey.
E-mail: deryaozaydin01@hotmail.com

Received: 26-06-2018
Revised: 10-10-2018
Accepted: 30-10-2018

Introduction

Elimination of malignancy-related physical or emotional symptoms of these patients improves the social life quality and treatment compliance. Describing the symptoms is the first step in starting malignancy treatment.[1] Advanced stage lung cancer is associated with many symptoms affecting the quality of life (QoL) of patients and has an important role in determining treatment options. Palliative care includes a wide range of treatment

How to cite this article: Kizilgöz D, Yeşildağlı H, Kabalak PA, Cengiz Tİ, Yilmaz Ü. Assesment of symptom burden and related factors of patients with lung cancer in a palliative care unit. Eurasian J Pulmonol 2019;21:93-6.

options aimed at improving survival and symptom palliation in patients with lung cancer. Various scoring systems are used to determine the symptom burden and severity of patients with malignancy.[2] Edmonton Symptom Assessment Scale (ESAS) is a simple, validated test used for this purpose.[3] High ESAS score correlates with disease burden and is important in symptom management.[4] ESAS is a test that needs to be applied as a standard in lung cancer treatment management.[5] Increasing frequency and severity of symptoms is related to poorer prognosis in patients with lung cancer.[6] Hence, management of palliation should be started from diagnosis and last during treatment period.

In this study, we intend to describe the tumor symptoms and related factors with ESAS in patients who admitted to a palliative care unit (PCU).

Materials and Methods

Two hundred and ninety patients with lung cancer were retrospectively reviewed. Patients with lung cancer who admitted to the outpatient clinic of PCU before any treatment were included. Patients' demographic parameters, tumor–node–metastasis (TNM) stages, and treatment protocols were collected from the hospital database or patients' files. Diagnosis was confirmed by pathologically/cytological. Positron-emission tomography-computed tomography (PET-BT) scan and cranial magnetic-resonance imaging were used for staging. (7th edition of TNM was used).

ESAS is a measure evaluating ten symptoms that are common in cancer patients. The severity of each symptom is assessed by numeric numbers from 0 to 10. Zero points indicate no symptoms and 10 points indicate that the symptoms feel very severe, and the severity of the symptoms increases from 0 to 10. ESAS was applied to each patient at the onset of treatment to evaluate the initial symptoms of the patients. The results were recorded for all patients before starting treatment.[7] After detecting the most disturbing symptom by ESAS, palliative treatments were applied to patients in outpatient treatment unit or inpatient service. In following visits response to palliative treatments were assessed individually. But as a limitation, ESAS after treatment was not recorded.

Primary end-point is to detect most disturbing symptoms related to the lung cancer stage and comorbidities of patients.

Statistical analysis

IBM SPSS 18 software package program (IBM SPSS Statistics, Somers, NY, USA) was used for the statistical analysis of the study. Descriptive analysis was used for demographic data, percentage distribution, and standard deviation. The relation between comorbidities and ESAS scale parameters was assessed by nonparametric test (Mann–Whitney test). Kaplan–Meier analysis was used for overall survival analysis. The relation between each ESAS parameter and stage was analyzed using Chi-square test. Differences of ESAS scores between stages were analyzed by Mann–Whitney test because Edmonton score is an ordinal data.

Results

A total of 290 patients (256 males and 34 females) were included in the study. The mean age was 61.4 ± 8.8. Among all participants, 227 were diagnosed with non-small cell lung cancer (NSCLC) and 63 patients had SCLC. There were 102 patients with squamous cell lung cancer, 104 patients with adenocarcinoma, and 12 patients with not otherwise specified among NSCLC group. Distribution of patients according to the stages was as follows: 157 were Stage IV, 93 Stage III, 25 Stage II, and 14 Stage I. The demographic characteristics of the patients are summarized in Table 1.

The mean Edmonton symptom score did not differ between patients with bone metastasis and without ($P > 0.05$). There was no significant difference between disease stage and mean ESAS, whereas in Stage IV group, the mean score for sleep variance was significantly higher than in all other stages ($P = 0.038$). The parameters with highest score for each stage are described in Table 2. Among locally advanced and advanced patients, tiredness and appetite were most disturbing symptoms [Table 2].

Early and locally advanced stage patients ($n = 120$) were assessed in terms of lymph node positivity. Among these patients, 86 of them had pathological lymph node involvement and the scores of cough and how they felt themselves were significantly higher than patients with N0 ($P = 0.016$ and $P = 0.027$ respectively).

Table 1: Demographic characteristics of patients

	Patient number (*n*)
Female/male	256/34
SCLC/NSCLC	63/227
NOS	12
Adenocarcinoma	104
Squamous cell carcinoma	102
Others	9
Stage 1A/1B	9/5
Stage 2A/2B	9/16
Stage 3A/3B	49/44
Stage 4	157

SCLC: Small cell lung cancer, NSCLC: Non-small cell lung cancer, NOS: Not otherwise specified

Table 2: Highest score according to stages

Stage	Highest parameter	Highest score
4	Tiredness	10
3B	Appetite	10
3A	Tiredness	10
	Constipation	10
3	Dyspnea	4
	Cough	4
2B	Emesis	5
	Sadness	5
	Anxiety	5
	How to feel yourself	5
2A	Pain	3
	Appetite	3
1B	Tiredness	7
1A	Dyspnea	10

Table 3: Comparison of patient groups according to treatment types

Characteristics	Group 1	Group 2	*P*
Male/female	57/9	198/25	>0.05
COPD	7	20	>0.05
SCLC/NSCLC	15/50	48/175	<0.001
TNM stage I-II	8	34	>0.05
TNM stage III-IV	58	189	>0.05
Brain metastasis	3	15	>0.05
Bone metastasis	17	32	>0.05

Group 1: Patients under treatment of best supportive care, Group 2: Other treatments (chemotherapy, radiotherapy, surgery, and targeted therapies), COPD: Chronic obstructive pulmonary disease, SCLC: Small cell lung cancer, NSCLC: Non-small cell lung cancer, TNM: Tumor-node-metastasis

Treatment modalities were divided into two groups: Group 1: best supportive care (BSC) ($n = 22$) and Group 2: others ($n = 268$) (systemic chemotherapy, palliative or curative radiotherapy, chemoradiotherapy, and operation). In Group 2, distribution of patients was nonhomogeneous, so they have gathered in a group. There was no statistically significant difference in terms of ESAS scores between patients receiving only supportive care and all other groups ($P > 0.05$) [Table 3].

Patients with diabetes mellitus had higher scores for sadness and anxiety variable ($P = 0.046$ and $P = 0.023$, respectively).

The overall survival and mean ESAS score were not related ($P > 0.05$) [Figure 1]. When analyzed in terms of each of ESAS parameters, even none of them had significant relation, but only the question of "how do you feel" had highest ($P = 0.07$).

Discussion

Although many symptoms can be seen in patients with lung cancer, pain, shortness of breath, and fatigue are the most common of them and these impair the QoL of the

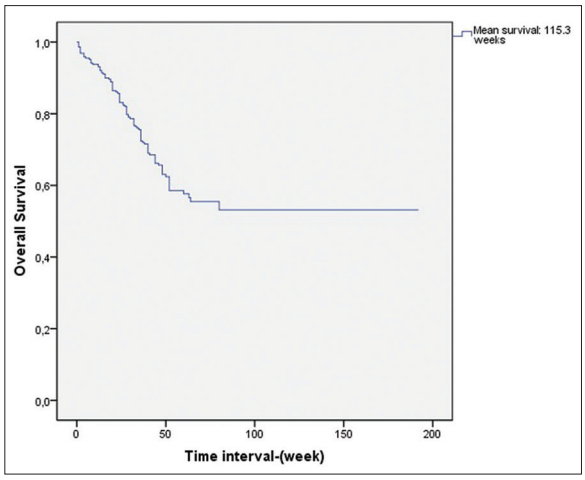

Figure 1: Kaplan–Meier curve for overall survival

patients.[8,9] ESAS focuses on most disturbing symptoms and guides the physicians about the treatment.[10] Even our study population is heterogeneous similar to the existing studies, majority of patients were male, in sixth decade and diagnosed in locally advanced and advanced stages.[11,12] In the current study, because it is a common cause for pain and poor medical condition, bone metastasis was evaluated individually and there was no relation between the mean ESAS score and existence of bone metastasis.[13] Sleep disorders can be observed due to anxiety disorder in patients with lung cancer, and regular psychologist interviews can be helpful in PCUs for these patients.[14,15] In the current study, the mean score for sleep variant of ESAS was observed statistically higher in Stage IV patients, and regular psychologist supports are being held in our clinic. There was no significant difference between ESAS parameters, but among locally advanced and advanced patients, tiredness and appetite were most disturbing symptoms. According to a study assessing the symptom burden of NSCLC, majority of patient-reported symptoms revealed a difference between Stage IIIB and Stage IV lung cancer.[16] According to a study with 182 advanced stage cancer patients by giving outpatient palliative care, a significant improvement was obtained in ESAS, especially in patients with moderate-to-severe symptoms. Thus, our data revealed no significant difference between patients receiving only supportive care and all other groups. In our opinion, this finding is a result of providing palliative care at the beginning of cancer diagnosis.[17]

It was observed that having ESAS ≥ 7, had a negative impact on the patients' physical, social, and emotional function.[18] Unsurprisingly, cough was associated with poor prognosis.[11] Lymph node positivity was related to a higher score for parameters of coughing and how they felt themselves.

ESAS is a useful tool for the screening of depression and anxiety in cancer patients without ideal cutoff value.[19]

To the best our knowledge, there is no data investigating ESAS and comorbidities together in lung cancer. ESAS can be helpful to determine the comorbidities. According to our study, the presence of DM increased the level of sadness and anxiety scores significantly.

In our study, the overall survival and mean ESAS score were not related. Advanced stage NSCLC patients have been shown that early palliative treatment is related to better survival.[11]

Conclusion

Regardless of cancer treatment protocol (including BSC) in all stages of lung cancer, symptom palliation should start at the time of diagnosis to end of life to improve patients' treatment compliance and physical, social, and emotional status. In addition, existence and appropriate management of comorbidities should be considered during malignancy treatment.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Henoch I, Lövgren M. The influence of symptom clusters and the most distressing concerns regarding quality of life among patients with inoperable lung cancer. Eur J Oncol Nurs 2014;18:236-41.
2. Liao YC, Shun SC, Liao WY, Yu CJ, Yang PC, Lai YH, *et al*. Quality of life and related factors in patients with newly diagnosed advanced lung cancer: A longitudinal study. Oncol Nurs Forum 2014;41:E44-55.
3. Chang VT, Hwang SS, Feuerman M. Validation of the edmonton symptom assessment scale. Cancer 2000;88:2164-71.
4. Cheifetz O, Packham TL, Macdermid JC. Rasch analysis of the edmonton symptom assessment system and research implications. Curr Oncol 2014;21:e186-94.
5. Barbera L, Seow H, Howell D, Sutradhar R, Earle C, Liu Y, *et al*. Symptom burden and performance status in a population-based cohort of ambulatory cancer patients. Cancer 2010;116:5767-76.
6. Cheung WY, Barmala N, Zarinehbaf S, Rodin G, Le LW, Zimmermann C, *et al*. The association of physical and psychological symptom burden with time to death among palliative cancer outpatients. J Pain Symptom Manage 2009;37:297-304.
7. Oldenmenger WH, de Raaf PJ, de Klerk C, van der Rijt CC. Cut points on 0-10 numeric rating scales for symptoms included in the edmonton symptom assessment scale in cancer patients: A systematic review. J Pain Symptom Manage 2013;45:1083-93.
8. Alshemmari S, Ezzat H, Samir Z, Sajnani K, Alsirafy S. Symptom burden in hospitalized patients with cancer in Kuwait and the need for palliative care. Am J Hosp Palliat Care 2010;27:446-9.
9. Gupta M, Sahi MS, Bhargava AK, Talwar V. A prospective evaluation of symptom prevalence and overall symptom burden among cohort of critically ill cancer patients. Indian J Palliat Care 2016;22:118-24.
10. Hua MS, Li G, Blinderman CD, Wunsch H. Estimates of the need for palliative care consultation across United States İntensive Care Units using a trigger-based model. Am J Respir Crit Care Med 2014;189:428-36.
11. Wang XS, Shi Q, Lu C, Basch EM, Johnson VE, Mendoza TR, *et al*. Prognostic value of symptom burden for overall survival in patients receiving chemotherapy for advanced nonsmall cell lung cancer. Cancer 2010;116:137-45.
12. Temel JS, Greer JA, Muzikansky A, Gallagher ER, Admane S, Jackson VA, *et al*. Early palliative care for patients with metastatic non-small-cell lung cancer. N Engl J Med 2010;363:733-42.
13. Ovayolu N, Ovayolu Ö, Serçe S, Tuna D, Pirbudak Çöçelli L, Sevinç A, *et al*. Pain and quality of life in Turkish cancer patients. Nurs Health Sci 2013;15:437-43.
14. Mercadante S, Aielli F, Adile C, Ferrera P, Valle A, Cartoni C, *et al*. Sleep disturbances in patients with advanced cancer in different palliative care settings. J Pain Symptom Manage 2015;50:786-92.
15. Veldhuisen H, Zweers D, de Graaf E, Teunissen S. Assessment of anxiety in advanced cancer patients: A mixed methods study. Int J Palliat Nurs 2016;22:341-50.
16. Iyer S, Roughley A, Rider A, Taylor-Stokes G. The symptom burden of non-small cell lung cancer in the USA: A real-world cross-sectional study. Support Care Cancer 2014;22:181-7.
17. Shamieh O, Khamash O, Khraisat M, Jbouri O, Awni M, Al-Hawamdeh A, *et al*. Impact of outpatient palliative care (PC) on symptom burden in patients with advanced cancer at a tertiary cancer center in Jordan. Support Care Cancer 2017;25:177-83.
18. Selby D, Chakraborty A, Myers J, Saskin R, Mazzotta P, Gill A, *et al*. High scores on the edmonton symptom assessment scale identify patients with self-defined high symptom burden. J Palliat Med 2011;14:1309-16.
19. Vignaroli E, Pace EA, Willey J, Palmer JL, Zhang T, Bruera E, *et al*. The edmonton symptom assessment system as a screening tool for depression and anxiety. J Palliat Med 2006;9:296-303.