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An Investigation on The Clinical Characteristics of Cases with Lung Cancer in The South-eastern Anatolian Region

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Abstract

Objective: *The present study aimed to retrospectively determine the demographic, epidemiological, and clinical characteristics of the patients with lung cancer monitored in our clinic.*

Material and Method: *The study retrospectively investigated 865 patients with lung cancer diagnosed, treated, and monitored between 2000 and 2011 in the Medical Oncology*

Result: *Of the 865 patients with lung cancer, 691 (79.5%) had Non-small Cell Lung Cancer (NSCLC), and 174 (20.5%) had Small Cell Lung Cancer (SCLC). Of the patients with NSCLC, 12.3% were in the local stage, 34.7% in the locally advanced stage, and 53% in the metastatic stage.*

The mean survival time of the patients was 31 months in the local stage, 17 months in the locally advanced group, and 9 months in the metastatic period. The smoking rates of patients were 93.8% in patients with squamous cell cancer, 72.5% in those with adenocarcinoma, and 91.4% in those with SCLC.

Conclusion: *Regarding the histopathological subgroups of the patients in our study, we have observed that adenocarcinoma patients rate was higher compared with the average data observed in our country. The smoking rate in patients with adenocarcinoma was less than the average tendency in our country.*

Keywords: Lung cancer, smoking, metastasis

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Introduction

İnvestigations suggest that lung cancer is the most common cause of death from cancer in men and women[1]. Research also reports that lung cancer incidence and mortality are closely related to smoking. Despite the decrease in the incidence and mortality in developed countries with smoking control initiatives in recent times, it is one of the leading cancer-related deaths due to the high rate of smoking in developing countries[2]. Globally, lung cancer cases and deaths have been on the rise in recent years. It is the third most common cancer type in women and the second most common cause in men, and the most common cause of cancer deaths (18.4%) worldwide. Lung cancer is a preventable disease. Smoking is responsible for lung cancer development in 90% of the cases[3]. Other etiological factors such as age, race, gender, occupation, air pollution, radiation, previous pulmonary disease sequela, diet, viral infections, genetic and immunological factors also play a role at a rate of 6%. Of the lung cancer cases, 90% are symptomatic due to local, regional, metastatic or systemic effects of the tumor[4]. The related symptoms are cough, hemoptysis, dyspnea, fever, hoarseness, bone pain, weight loss, anorexia, confusion, neuropathic pain, weakness, headache, ataxia, etc. Physical examination findings can be completely normal, but findings regarding supraclavicular lymphadenopathy, Horner's syndrome, pleural fluid accumulation, localized rhonchus, hepatomegaly, cachexia, localized bone sensitivity as well as peripheral motor and/or sensory neuropathy findings and neurological findings can also emerge[5]. The stage of the disease is the most important prognostic factor. Unfortunately, more than 80% of NSCLC cases turn out to be at the locally advanced or advanced stage at the time of diagnosis. On the other hand, 60% of SCLC cases are metastatic at the time of diagnosis[6]. The present study aimed at retrospectively determining the demographic, epidemiological, and clinical characteristics of a series of lung cancer cases monitored in our clinic for a long period.

Materials and Methods

The study retrospectively investigated 865 patients with lung cancer diagnosed, treated, and monitored between 2000 and 2011 in the Medical Oncology

Statistical Evaluation

A standard form was created with the pre-determined data of the cases, the files were assesment, and the data were recorded on the computer. The SSPS 16.0 programme was used for statistical analysis. The student's t-test was used to compare parametric variables for two groups, and analysis of variance was used for more than two groups (histopathological subtypes). Pearson's chi-square (x2) test was used to compare categorical variables. Survival analyses were performed using the

Kaplan-Meier method. Overall survival was defined as the period from the date of diagnosis to death.

Result

Of the cases, 691 (79.5%) had NSCLC, and 174 (20.5%) had SCLC.As for the gender of the cases, 780 (90.1%) were men and 85 (9.9%) were women, all with an average age of 59.7. According to histopathological subtypes, the results based on the gender of NSCLC cases show that 98.3% of patients with squamous cell carcinoma were male and 1.7% female. On the other hand, in the cases with adenocarcinoma, 77.5% of the cases were male and 22.5% female.

The classification of the cases by age groups has revealed that 31 (3.5%) of the cases were under 40 years of age, 583 (67.3%) in the age group of 40 to 65, and 251 (37.2%) over the age of 65 years.

The study also evaluated the relationship between lung cancer and smoking, one of the most important etiological factors in developing the disease. Of the patients with NSCLC, while 587 (85.2%) were smokers, 104 (14.8%) reported being non-smokers. Of the patients who reported being a smoker, 577 (93%) were men and 10 (14.5%) women. Based on the smoking rates calculated according to the histopathological subtype of cases with NSCLC, the study found that the smoking rate was 93.8% in 241 cases with squamous cell cancer and 72.5% in 193 adenocarcinoma cases.

The most frequent complaint that stimulated the patients to present in our clinic was cough in 514 cases (59.4%), followed by other symptoms such as hemoptysis (208 patients / 24%), dyspnea (315 patients / 36.4%), chest pain (344 patients / 39.7%) and weight loss (270 patients / 31.2%).

The patients presented to our clinic were grouped according to the NSCLC staging system as local, locally advanced, and metastatic stage. While 85 (12.3%) of the cases were in the local stage, the number of locally advanced cases was 240 (34.7%). The majority of the cases (366 patients / 53%), on the other hand, were in the metastatic stage.

The study also investigated the average survival times of the patients diagnosed with NSCLC based on the disease stage. The related results show that, while the mean survival time was found to be 31 (1-72) months in patients in the local period, it was 17 (1-72) months in the locally advanced group and only 9 (1-42) months in the metastatic period (Table 1).

The patients presented to our clinic were identified as patients at a limited stage and those at the disseminated stage based on the SCLC staging system. In the initial phase, while the number of the patients with SCLC at the limited stage was 73 (42%), 101 patients (58%) were diagnosed with one at the disseminated stage. While the average survival time of the patients with SCLC at the limited

stage was calculated to be 14 months, it was 8 months in those with one at the disseminated stage (Table 2).

Table 1. SCLC demographic and clinical characteristics

SCLC 174(%20)	
Gender	
Men	**158(90.8)**
Women	**16(9.2)**
Age (average)	**57.7±10.2**
Men	**57,9±9.9**
Women	**56,6±13.2**
Smoker	
Yes	**159(%91.4)**
Men	**152(%96.2)**
Women	**7(%43.7)**
No	**15(%8.6)**
Men	**6(%3.8)**
Women	**9(%56.3)**
Symptoms	
Cough	**101(%58)**
Haemoptysis	**35(%20.1)**
Chest Pain	**51(%29.3)**
Dyspnoea	**55(%31.6)**
Weight Loss	**64(%36.7)**
Stage	
Limited Disease	**73(%42)**
Disseminated Disease	**101(%58)**

Table 2. NSCLC demographic and clinical characteristics

NSCLC691(%80)	
Gender	
Men	**622(%90)**
Women	**69(%10)**
Age (average)	**59.8±10.8**
Men	**60.4±10.1**
Women	**55±13.7**
Smoker	
Yes	**587 (%85.2)**
Men	**577 (%93)**
Women	**10(%14,5)**
No	**104 (%14.8)**
Men	**45(%7)**
Women	**59(%85.5)**
Symptoms	
Cough	**413(%59.7)**
Haemoptysis	**173(%25)**
Chest Pain	**293(%42.4)**
Dyspnoea	**260(%37.6)**
Weight Loss	**206(%29.6)**
Stage	
Local	**85(%12.3)**
Locally advanced	**240(%34.7)**
Metastatic	**366(%53)**
Histopatologic sub-type	
Adenocancer	**193(%22)**
Squamous cancer	**242(%28)**
Others	**256(%30)**

Discussion

Although lung cancer cases are divided into subtypes histopathologically, SCLC has an aggressive clinical course, with a shorter doubling time and a much greater tendency for regional or distant metastases than other major lung cancer types. SCLC accounts for 14% of all lung cancers[7], a rate which is 16.1% in Turkey according to the cancer statistics for 2015. Of the 865 cases investigated in our study, 174 (20%) were diagnosed with SCLC, a rate which was slightly higher than the ones observed in previous research performed in our country and around the world.

Age, a factor effective in lung cancer development, is one of the most important determinants of risk. Research reports that lung cancer incidence increases with age and peaks in decades 6 and 7. A study conducted by Wells CK et al. reported a mean age of 61.2 years[8]. In a study conducted in our country, on the other hand, the mean age was found to be 58.4 years[9]. Another study performed in our country investigating 7303 cases with lung cancer reported that 90.5% of all cases were men, and the remaining 9.5% were women[10]. In our study, 90.2% of the cases were male and 9.8% female. These data are compatible with the overall data observed in our country.

Lung cancer risk in smokers is 24-36 times higher than non-smokers. Passive smoking, on the other hand, accounts for 3.5% of all cases. While the prevalence of smoking in developed countries is 20-40% in women and 30-40% in men, it is 2-10% and 40-60%, respectively, in developing countries[11]. In Turkey, on the other hand, evidence indicates a smoking prevalence of 24% in women and 63% in men. A study performed in our country on 7303 cases with lung cancer reports that 91.5% of the cases reported being a smoker[10]. The smoking rate varies according to the histopathological subgroup. In the present study, 91.4% of the cases were smokers, a result similar to the ones observed in past research in our country. On the other hand, 93.8% of the patients with squamous cell carcinoma were smokers. Our study results indicate that 72.5% of the patients with adenocarcinoma lung cancer, which is the histopathological subgroup likely to have the least relation with smoking, were smokers.

The most frequent symptom of lung cancer is cough. Previous research reports an incidence rate of cough between 50 and 75 % on average[12]. In the present study, 514 (59.4%) of the 864 cases presented to the clinic with cough, an incidence similar to the one observed in previous studies. On the other hand, 188 cases (%21.7) had hemoptysis, 315 (% 36.4) respiratory disorders, and 344 (% 39.7) chest pain. SCLC is one of the most aggressive tumours and has been grouped as a limited and disseminated disease since the possibility of surgical removal of the tumour is very low. Research reports that 60% of the patients had metastasis at the time of diagnosis, a rate that is consistent with the results observed in studies previously performed in our country[13]. In our study, 101 (58%) of the 174 SCLC cases already had metastasis at the date of diagnosis.

Since the symptoms are noticed, and the findings are detected late in NSCLC, the diagnosis is also established in the late period. The cases with NSCLC are mostly detected in advanced (Stage IV) or locally advanced stage (Stage IIIA and IIIB). Generally, 70% of the cases do not have the chance of surgery used as a radical treatment method at the time of diagnosis[14]. In our country, the cancer statistics for 2015 reveal that 14.8% of patients with NSCLC have been identified in the local stage. In our study, NSCLC was diagnosed in the late period, and the disease was already at the local stage

in 85 (12.3%) of the patients. While the studies conducted in our country in 2001 found an incidence of 16.9%, the statistics for 2015 show that it was the most common subtype with a rate of 47.1%. Adenocarcinoma accounted for 22% of the cases in our study. Since SCLC patients do not have a surgical chance, radiotherapy and chemotherapy are given limited disease periods. In the present study, the median survival time of the patients was 14 months. Metastasis was detected in 60% of the patients with SCLC at the time of diagnosis. The average survival time of the cases in our study was 8 months.

Although curative surgery is the only chance in cases with NSCLC at the local stage, very few lung cancer cases are diagnosed in the local stage. The average survival time of the patients diagnosed at the local stage in our study was 31 months. On the other hand, the mean survival time for locally advanced patients was 17 months, and it was 12 months for metastatic patients.

Conclusion

İn the present study we found a significant difference between the mean ages of the cases according to histopathological subtypes. Another result indicates that adenocarcinoma and SCLC emerged at an earlier age than cases with squamous cell cancer. Analysing smoking, one of the etiological factors of lung cancer, based on the gender of cases, showed significantly higher smoking behaviour in men than women. On the other hand, the smoking rate was significantly lower in cases with adenocarcinoma. Another result is that the most frequent smokers were those diagnosed with squamous cell cancer.

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