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Evaluation of patients hospitalized due to chronic obstructive pulmonary disease at a secondary care center: experience of a state hospital

İkinci düzey bakım merkezinde yatarak tedavi edilen kronik obstrüktif pulmoner hastalığı olan olguların değerlendirilmesi: bir devlet hastanesi tecrübesi

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Abstract

Aim. The aim of this study was to evaluate the patients hospitalized due to chronic obstructive pulmonary disease (COPD) at a pulmonary ward of a state hospital as a secondary care center. **Methods.** The retrospective analysis of 110 patients who were admitted to the department of chest diseases in Sivas State Hospital between March 2006-March 2007 for the diagnosis and the treatment of COPD was performed. The age, gender, smoking status, biomass exposure, occupation, the presence of any additional disease, the causes of the exacerbations, patients' symptoms, physical findings, pulmonary function test (PFT), direct chest radiography, and the outcome of hospitalization were recorded. **Results.** Of 110 patients included in this study, 88 (80%) were male and 22 (20%) were female. The mean age was 68.7 ± 7.9 years and the age range was between 42 and 82. We detected that the smoking rate was 82%, the rate of exposure to biomass was 44%, and the frequency of coexistence of smoking and biomass exposure was 31%. Dyspnea (100%), cough (78%), sputum production (66%), and chest pain (52%) were the most common symptoms. Rhonchi (86%) and inspiratory rales (74%) were the most common finding in physical examination of the patients. Chronic comorbidity was found in 40% of the cases, the most common being the cardiovascular diseases. **Conclusions.** Several risk factors were identified in patients hospitalized due to COPD. Intense exposure to biomass, especially in women, was found to be a significant risk factor for COPD in our region.

Keywords: Chronic obstructive pulmonary disease, biomass, smoking

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Özet

Amaç. Bu araştırmanın amacı bir devlet hastanesi akciğer hastalıkları servisinde ikinci düzey bakım için yatırılan kronik obstrüktif akciğer hastalığı (KOAH) olgularının değerlendirilmesidir. **Yöntem.** Sivas Devlet Hastanesi Göğus Hastalıkları Servisinde Mart 2006-Mart 2007'de yatırılarak tedavi edilen 110 hastanın retrospektif analizi gerçekleştirildi. Yaş, cinsiyet, sigara kullanımı, biomas maruziyeti, iş, eşlik eden hastalık, atakların nedenleri, belirtiler, bulgular, akciğer fonksiyon testleri (AFT), direkt akciğer grafisi ve tedavi sonuçları kaydedildi. **Bulgular.** Çalışmaya alınan 110 olgunun 88'i (%80) erkek ve 22'si (%20) kadındı. Ortalama yaş 68,7 ± 7,9 (42-82) yıl bulundu. Sigara kullanım oranı %82, biomas maruziyeti %44 ve sigara ve biomas birlikte maruziyeti %31 olarak saptandı. Dispne (%100), öksürük (%78), balgam çıkarımı (%44) ve gögüs ağrısı (%52) olarak en sık görülen belirtilerdir. Ronkus (%86) ve inspiratuvar ral (%74) ile en sık saptanan muayene bulgularıydı. En fazla kardiyovasküler hastalık olmak üzere %40 olguda kronik komorbidite bulundu. **Sonuçlar.** KOAH nedeniyle yatarak tedavi edilen olgularda çeşitli risk faktörleri bulunmaktadır. Özellikle kadınlarda biomasın yoğun maruziyeti bölgemizde önemli bir risk faktörü olarak dikkati çekmektedir.

Anahtar sözcükler: Kronik obstruktif akciğer hastalığı, biomas, sigara kullanımı

Introduction

Chronic obstructive pulmonary disease (COPD), is a progressive and largely preventable disease that occurs against harmful particulates and gases, it's characterized by an abnormal inflammatory response, and fully characterized by irreversible airflow limitation lung [1]. The disease is seen mostly in adults over 45 years. The most important risk factors are smoking, exposure to biomass fuel smoke and working in smoky and dusty workplace [2]. İncrease of cigarette consumption is one of the most important causes of the COPD increase in the world.

In recent years, the occurrence of a large increase in mortality from COPD in the world occupied an important place among the causes of death worldwide [3]. According to World Health Organization, COPD, which is fifth cause of death in the world, will become the third cause of death in 2030 [2-4]. COPD constitutes a serious burden for the community socio-economic aspects, because of it's a long-lasting chronic disease, frequent course with acute exacerbations, respiratory failure related with acute exacerbations, sometimes remaining of patients in intensive care and make loss of power to create business [5].

Purpose of this study is to evaluate the clinical data of patients with COPD who were hospitalized in pulmonary ward of our secondary care hospital for diagnosis and treatment.

Material and Methods

In our study, retrospective analysis of 110 patients who were hospitalized with a diagnosis of COPD and have been treated in chest disease ward of Sivas State Hospital between March 2006 and March 2007 were performed. In this study, classification and diagnosis of COPD was made according to the symptoms, history, physical examination described under GOLD guidance and pulmonary function test (FEV1 reduction and FEV1/VC <% 0.7) (6). The age, gender, smoking status, biomass, occupation, whether or not additional

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disease, the causes of attack, symptoms of patients, physical examination findings, PFT, chest X ray including the status of parameters were recorded at the end of hospitalization. All data was mean as ± standard deviation or ratio as appropriate.

Results

The study included 110 patients, 88 (80%) were male and 22 (20%) were female. The mean age was 68.7 ± 7.9 years and age range was 42-82. The majority of patients had a history of smoking. The distributions of the patients according to risk factors for COPD such as smoking, biomass, occupational exposure shown in Table 1.

Dyspnea (100%), cough (78%), sputum production (66%) and chest pain (52%) were the most common symptoms in patients. The most frequently physical examination findings detected in patients were ronchi (86%), and inspiratory rales (74%), respectively. The distribution of patients according to GOLD calcification is seen in Table 2. Looking at the state of co-morbidity of patients with chronic hypertension and diabetes mellitus was the most common comorbid disease (Table 3). Lung infection is an important cause while hospitalization of patients. Except for lung infection, inconsistent treatment, pulmonary thromboembolism, comorbidity status were the causes of hospitalization. The distribution of states at the end of hospitalization of patients seen in Table 4.

Table 1. Distribution of risk factors in the study group.

	Male (n = 88)	Female (n = 22)	Total (n = 110)
Smoking	84 (95%)	6 (27%)	90 (82%)
Occupational exposure	31 (35%)	3 (14%)	34 (31%)
Biyomas exposure	31 (35%)	17 (77%)	48 (44%)
Smoking plus occupational exposure	30 (34%)	0	30 (27%)
Smoking plus biomass exposure	30 (34%)	4 (18)	34 (31)
With undetectable risk factor	2 (2%)	0	2 (2)
Data were presented as n (%).			

Table 2. Distribution of patients according to GOLD classification.

COPD severity by GOLD criteria (FEV1/FVC<70%)	Patient (n = 110) n (%)
GOLD I. Mild: FEV1% >80%	12 (10)
GOLD II. Moderate: 50>FEV1%<80	23 (21)
GOLD III. Severe: 30>FEV1<50	43 (39)
GOLD IV. Very severe: FEV1%<30	32 (29)

Table 3. Patients with chronic comorbidity states.

	n (%)
Hypertension	28 (25%)
Diabetes mellitus	24 (22%)
Coronary artery disease	23 (21%)
Congestive heart failure	20 (18%)
Bronchiectasis	20 (18%)
Malignancy	8 (7%)

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Table 4. Status of patients at the end of hospitalization.

	Total (n=110) n (%)
Discharge	87 (79)
Referred to the another hospital	15 (14%)
Transfer to another unit	6 (5%)
Voluntarily discharged	2 (2%)
Exitus	Nil

Discussion

In this study, 110 patients mean age was 68.7 ± 7.9 years and a large proportion of patients were found to be 55 years of age and over. Because of COPD is a chronic progressive disease, the incidence of the disease is increasing and symptoms are getting obviously by age [5, 7]. However the average age found as 69.9 ± 9.0 years in a study [8], in a study conducted in Turkey found to be 65.5 ± 9.9 years [5]. Our results were consistent with the literature. In this study, % 20 were women of 110 patients. The rate of COPD is increasing in women due to increasing of smoking rates in women in high-income countries, and exposure to indoor air pollution in low-income countries. In one study in women found to be 1% of COPD (8). In a study conducted in Turkey, it was found to be 27.8% [5].

In this study while %95 of smoking, %35 of exposure to biomass were detected as a risk factor in men, in woman, %77 of exposure to biomass, %27 of smoking was in the foreground While the most important risk factor is tobacco smoke in high-and middle income countries, indoor air pollution is the major risk for COPD such as biomass fuels which is used to warm up in low-income countries [2, 9-11]. In this study the rate of smoking of %82 of all individuals, exposure to biomass %44, combination of smoking and biomass was %31. Occupational exposure as a risk factor in this study were % 35 of men, %14 of women. Generally many jobs where dust and fume exposures (coal dust, silica, cadmium, animal feed and of dust, smoke, or flux that exposure to other jobs) have been reported to be associated with the development of COPD [2, 7]. While the occupational exposure, is %15-19, this rate is getting up to % 30 in lifelong non-smokers, [2, 12]. In this study, the occupational exposure rate was %31. %27 of smokers also had occupational exposure.

In this study, cardiovascular diseases were the leading comorbidity, when looking at chronic diseases associated with COPD. Including cardiovascular diseases at first, COPD can be seen along with many other systemic diseases, particularly including smoking-related [13, 14]. Almagro et al. [15] also found that higher mortality rates in patients with high rates of comorbidity. However, studies have shown that comorbidities are the cause for approximately 50% of deaths in patients with COPD [16, 17]. In this study, additional disease was found in %40 of patients. İn this study, the reason of inpatients death is not seen may be connected to easily transport to a specialized center of patients who we were unable to respond to treatment and their general condition deteriorating. As a result of risk factors for COPD patients were hospitalized. As seen in our region, intense exposure to biomass were seen and thus found to be as a risk factor for COPD, especially in women.

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Conflict of Interest

The authors of the manuscript declare no conflicts of interest.

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