GOLD 2017 RAPORUNA GÖRE KOAH HASTALARININ EVRELERİNDEKİ DEĞİŞİMLER VE BRONKODİLATÖR İLAÇ SEÇİMİ ÜZERİNE ETKİSİ

CHANGES IN THE STAGES OF COPD PATIENTS AND EFFECT ON BRONCHODILATOR DRUG SELECTION ACCORDING TO GOLD 2017 REPORT

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ÖZ

Amaç: GOLD 2017 kriterlerine göre KOAH hastalarının ABCD evresindeki değişiklik oranını araştırmayı ve bu değişikliklerin tedavide bronkodilatör ilaç seçimine etkisini değerlendirmeyi amaçladık.

Yöntem ve Gereç: Çalışmaya Şubat 2017 - Mayıs 2017 tarihleri arasında KOAH tanısı ile polikliniğe başvuran 100 hasta dahil edildi. GOLD 2011 ve 2017'deki sınıflama kriterleri kullanılarak hastalar sınıflandırıldı. Bunun için yıllık alevlenme sayısı, dispne skorlaması, FEV1 % düzeyi değerlendirildi. Hastalar söz konusu kriterler kullanılarak ABCD sınıflamasına uygun şekilde gruplandırıldı. Her gruptaki hastaların kullandığı ve halen kullanmakta olduğu ilaçlar kaydedildi.

Bulgular: Sınıflandırmada FEV1 değerini içeren GOLD'a göre, A, B, C ve D evrelerinde KOAH hastalarının oranı sırasıyla% 8,% 10,% 14,% 68 idi. GOLD 2017 güncellemesine göre (FEV1 değeri olmayan), hastaların evreleri sırasıyla% 19,% 30,% 2 ve% 49 idi. İki sınıflama arasında istatistiksel olarak anlamlı bir fark bulundu (p: 0,002). Evreleme sistemindeki FEV1 değerini içeren sınıflamaya göre tedavi seçiminde, iki evreleme sistemi arasındaki tedavi seçimleri için istatistiksel olarak anlamlı bir fark vardı (p: 0.000).

ABSTRACT

Aim: We aimed to investigate the rate of changes in ABCD stages of COPD patients according to GOLD 2017 criteria and also to evaluate the effect of these changes on bronchodilator drug selection in treatment.

Material and method: One hundred patients who were admitted to the outpatient clinic with a diagnosis of COPD between February 2017 and May 2017 were included in the study. Patients were classified using the classification criteria in GOLD 2011 and 2017. For this reason, the number of exacerbations, dyspnea score, FEV1% level were evaluated. Patients were grouped according to ABCD classification using these criteria. Medications used by patients in each group and currently using drugs were recorded.

Results: According to the GOLD that includes FEV1 value in classification, the rate of COPD patients in the A, B, C, and D stages was 8%, 10%, 14%, 68%, respectively. According to GOLD 2017 update (without FEV1 value), the stages of patients were 19%, 30%, 2% and 49%, respectively. A statistically significant difference was found between the two classifications (p: 0.002). In the selection of treatment according to classification that includes FEV1 value in staging system, there was a statistically significant

Sonuç: *Bu çalışma, GOLD 2017 güncellemesine göre D ve C gruplarında hasta sayısının azalmasına bağlı olarak kombine preparatların (özellikle inhale steroidlerin) kullanımının azaldığını ve LAMA veya LABA ile monoterapinin arttığını göstermiştir.*

difference for treatment selections between the two staging systems (p:0.000).

Conclusion: *This study showed that the use of combined preparations (especially inhaled steroids) in treatment decreased due to the decrease of the number of patients in D and C groups according to GOLD 2017 update, and the monotherapy with LAMA or LABA increased.*

INTRODUCTION

Chronic obstructive pulmonary disease (COPD), characterized by shortness of breath and a negative impact on the quality of life, is a leading cause of morbidity and mortality worldwide. However, early diagnosis and treatment may reduce symptoms and the rate of exacerbations, thereby improving the quality of life and physical activity (1). COPD guidelines on the diagnosis, treatment and prevention of COPD were published at certain intervals since 2001 by GOLD (The Global Initiative for Chronic Obstructive Lung Disease) accepted worldwide. While the published content was a guideline before, this feature changed in 2011 and it became a document containing the diagnosis and treatment strategies of COPD. The previous major revision was performed in 2011, and it was recommended that the disease should be assessed (combined assessment) and treated according to not only the forced expiratory volume in 1 second (FEV1) value but also the symptom score and exacerbation risk with the FEV1 value (2). However, the studies conducted to date could not show that the combined assessment is superior to simple spirometric assessment in predicting mortality and other important health outcomes in COPD.

Furthermore, it was observed that the compliance with GOLD 2011 treatment recommendations was very low all over the world, especially over-treatment and unnecessary inhaler corticosteroid use was a significant problem (3,4). One of the most significant changes in GOLD 2017, was the removal of FEV1 from the combined assessment. Thus, FEV1 was completely disabled in the pharmacological treatment decision. In addition, while presenting recommendations were offered for initial treatment so far; in GOLD 2017, it was suggested that the patient should be evaluated during each interview and, if necessary, the treatment should be changed to increase or decrease (5). COPD was classified into four stages of severity (A,B,C,D) according to exacerbations and symptoms. The guidelines have not been completely adopted or implemented by pulmonologists and primary care physicians. For this reason, many patients with COPD may be still undiagnosed, untreated, or mistreated.

In this study, we aimed to investigate the rate of changes in ABCD stages of COPD patients according to GOLD 2017 criteria and also to evaluate the effect of these changes on bronchodilator drug selection in treatment.

MATERIAL AND METHOD

One hundred patients who were admitted to the outpatient clinic with a diagnosis of COPD between February 2017 and May 2017 were included in the study. This study is a prospective case control study. The study was approved by the Institutional Ethics Committee of Dr. Suat Seren Chest Diseases and Surgery Training Hospital. Written informed consent was obtained from all the patients.

The inclusion criteria included diagnosed by the physician, age 40 years, available pulmonary function test (PFT) results from

within the past 2 years and COPD treatment data from any time within 6 months of the test, and formal written consent. Patients with comorbidities which may affect spirometry and / or Modified Medical Research Council (mMRC) assessment such as lung cancer, deep anemia, NYHA stage IV heart failure were excluded from the study.

Modified Medical Research Council dyspnea score, COPD Assessment Test (CAT) scores and number of exacerbations in the last year were collected from the hospitals' databases. The patients with incomplete data concerning spirometric values, mMRC dyspnea score, CAT score, and the number of exacerbations in the previous year, and no prescription including COPD medications concomitant with this data were excluded.

According to exacerbation history, mMRC evaluation and postbronchodilator spirometry results in stable period, patients were evaluated according to GOLD 2017 old and new (including FEV1 or not) ABCD classification. Also, whether the treatment of patients has been altered or not. Electronic prescriptions covering COPD treatment were examined. The treatment protocols were evaluated if they were suitable for both classifications. Medications that were used earlier were questioned. The drugs used in the result of the change of treatment GOLD 2017 report were recorded.

Statistical Analyses

All statistical analyses were performed using SPSS 15.0 software. Baseline characteristics including demographic data, spirometric parameters and history of exacerbations of patients were summarized by descriptive statistics. Continuous variables were represented by mean and median, and categorical data were represented by values in percentage. The differences between the categorical variables such as COPD groups were evaluated by chi-square test. All tests were two tailed, and significance was set at 0.05.

RESULTS

A total of 100 patients (93 men and 7 women) whose mean age was 64.7 ± 9.7 years were included in the study. The majority of patients had a dyspnea score of 2 and above (81%) and half of the patients was hospitalized previous year (Table 1).

Table 1. Characteristics of patients

Characteristics	N (%) or mean ± SD
Age	64,7 ± 9,7
Gender Male/Female	93/7
FEV1 %	42,3±16,2
FVC %	55,5 ± 18,3
FEV1/FVC %	59,2 ± 10,9
MMRC 0 1 2 3 4	 19 25 17 31 8
Smoking History Smoker Nonsmoker Ex-smoker	 37 7 56
Hospitalization in previous year Present Absent	 50 50
Exacerbation Present Absent	 69 31

According to the GOLD that includes FEV1 value in classification, the rates of COPD patients in the A, B, C, and D stages was 8%, 10%, 14%, 68%, respectively. According to GOLD 2017 update (without FEV1 value), the stages of patients were 19%, 30%, 2% and 49%, respectively. The most significant changes are the transition of the cases from stage D to stage B, and the transition of the cases from stage C to stage A. As a result of these changes, it was seen that there was a decrease in the number of cases in the D and C stages, and an increase in the number of cases at the B and A stages (Table 2).

A statistically significant difference was found between the two classifications (p: 0.002).

In the selection of treatment according to classification that includes FEV1 value in staging system, 75% of the patients were treated with long-acting β2 agonist (LABA) / Long Acting muscarinic antagonist (LAMA) / inhaled corticosteroid (ICS), 8% with ICS + LABA, 9% with LABA + LAMA and 5% with LAMA, whereas in the selection of treatment according to classification that removed FEV1 value in staging system, 45% of the patients were treated with ICS+LABA+LAMA, 6% with ICS+LABA, 27% with LABA + LAMA, and 21% with LAMA (Table 3).

In 45% of patients, treatment was changed according to new staging system. According to the GOLD classification, it was found that there was a statistically significant difference for the treatment between the two staging systems (p: 0.000).

DISCUSSION

This study shows that the use of combined preparations (especially inhaled steroids) in treatment decreased due to the decrease of the number of patients in D and C groups according to GOLD 2017 update, and the monotherapy with LAMA or LABA increased.

When we divided the patients into groups by assessing only the symptoms and exacerbations without FEV1, we observed that the number of patients in groups A and B increased, and the number of patients in groups C and D decreased. When the treatment is prescribed according to the latest GOLD update, our results showed that IKS usage decreased.

One of the major aspects of COPD treatment is pharmacotherapy. A combination of drugs, including anticholinergics, corticosteroids, and β2-agonists, is the leading treatment strategies for COPD. Long-acting bronchodilators, whether β2 agonists (LABAs) or muscarinic antagonists (LAMAs), are central to symptom management in patients with COPD. As well as improving lung function and health-related quality of life (HRQoL), they help prevent exacerbations and increase exercise endurance

Table 2. Classification of COPD with FEV1 and without FEV1

	COPD Classification (FEV1 including)	COPD Classification (FEV1 not included)	P
A	8 (%8)	19 (%19)	
B	10 (%10)	30 (%30)	**0,002**
C	14 (%14)	2 (%2)	
D	68 (%68)	49 (%49)	

COPD: Chronic Obstructive Pulmonary Disease FEV1: Forced Expiratory Volume In 1 Second

Table 3. Treatment of bronchodilator according to COPD Classification

Treatment	COPD Classification (FEV1 including)	COPD Classification (FEV1 not included)	p
ICS+LABA+LAMA	75 (%75)	45 (%45)	
ICS+LABA	8 (%8)	6 (%6)	**0,000**
LABA+LAMA	9 (%9)	27 (%27)	
LAMA	5 (%5)	21 (%21)	
LABA: Long-acting β2 agonist LAMA: Long Acting muscarinic antagonist ICS: inhaled corticosteroid			

by reducing pulmonary hyperinflation and dyspnea (6). LABA/ICS combinations are indicated for patients with severe-to-very-severe COPD and a history of repeated exacerbations. Despite these indications, however, LABA/ICS combinations remain the second-most commonly prescribed first-line treatments (after LAMA monotherapy) across the range of COPD severities (7,8). The use of LABA/ICS combinations has been associated with a decrease in the rate of COPD exacerbations but with an increased risk of pneumonia (9). Also ICS has no great impact on FEV1 decline, and mortality [10]. Thus, we should consider whether we will treat ICS in the treatment of COPD according to the patient's symptoms or exacerbation without paying attention to FEV1.

Thus, we should consider whether we will include ICS in the treatment of COPD according to the patient's symptoms or exacerbation without paying attention to FEV1. Depending on the condition, we may add or remove ICS to the treatment, as we increase or decrease the digits in asthma.

In our study, the decrease in ICS use due to the change of the patients' stages shows that compliance with the guideline is good. On the other hand, Turan et al shows a low rate of adherence to guideline recommendations for COPD patients. The most common type of inappropriate COPD treatments is overtreatment, generally with ICS in their study (11). Two multicentric study carried out in our country showed mainly two results which were overtreatment in early stages and excessive use of ICS in all disease stages (12,13). The scope of these studies, the compliance with the GOLD 2011 and 2017 treatment recommendations were evaluated. Also they are multi-center studies; but our study is single center. One of the other reasons for the lack of compliance is that the physicians prefer more comprehensive treatment than ever before because of the patients' delay in the first visit to a physician in the early stages of the disease. Another possible explanation may be that physicians take the patient's risk factors, comorbidities (such as smoker, obesity, etc.) in consideration when prescribing the drug. Repetition of the drugs formerly given by another pulmonologist without a careful assessment may be one of the other reason. Patients with COPD should be carefully evaluated at each visit and their exacerbation and symptoms should be questioned. The studies in Hong Kong and Italy demonstrated a suboptimal adherence to GOLD guidelines and overtreatment, especially overprescription of ICS similar to the studies in Turkey (14,15).

There are advantages in guideline-concordant treatment protocols. Guidelines aim to develop a simple and more efficient treatment protocol with high patient adherence and fewer side effects. High adherence to medical treatment reduces patient outcomes and decreases patient mortality (16). It was also reported that high adherence to GOLD guidelines might also provide an improvement in spirometric values (17). COPD medications with suitable prescriptions according to the COPD guidelines may also prevent disease progression and exacerbations, reduce the symptoms, and improve health status.

In conclusion, changes in groups with GOLD update have also brought up treatment changes. While the use of combined preparations (especially inhaled steroids) decreased, monotherapy LABA or LAMA increased. As the treatment protocols of COPD guidelines change over time, there is a high rate of adherence to guideline recommendations by clinicians in their clinical practice in this study.

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