



EFFECT OF BRONCHODILATORS ON SLEEP AND DAILY ACTIVITIES IN PATIENTS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE TREATED IN RAJINDRA HOSPITAL PATIALA

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ABSTRACT

Aims And Objectives: To assess the effect of treatment on sleep and daily activities in the patients suffering from Chronic Obstructive Pulmonary Disease. **Method:-** This observational, open study was conducted in the Chest & TB department at Rajindra Hospital, Government medical college Patiala. A total of 250 patients were included in the study over a period of 1 year from march 2014 to march 2015 of mild to Very severe stage of COPD. The Data Pertaining to patients subjective feeling about the improvement in sleep and improvement in daily activities were noted. Two parameters were noted namely improvement in sleep and improvement in daily routine activities at 0, 3 and 6 months of treatment initiation. **Results:-** In the present study patients were over the age of 40 years. In present study Chronic Obstructive Pulmonary Disease was more prevalent in males as compared to females as out of 250 patients 172 were males and 78 were females with Male: Female ratio of 2.47:1. The most common age group of disease occurrence was 51-60 years. All the patients were treated according to GOLD Guidelines 2011 with SABA/ LABA/ Corticosteroids as per Patient's Severity of disease. 90% patients having mild disease reported the improvement at 3 months duration while the percentage rise to 98% at the end of 6 months. Moderate severity patients reported improvement in 87% patients at the end of 3 months while for the same severity the percentage of patients showing improvement rise to 90% at the end of 6 months. Severe stage diseased patients reported improvement in 78.4% (38 out of 49 patients) at the end of 3 months as well as 6 months treatment. **Conclusion:-** According to the present study, mild and moderate severity patients reported increasing improvement in daily routine physical activities after 3 months and 6 months of treatment.

KEYWORDS: COPD, GOLD, SABA, LABA.

INTRODUCTION

Chronic Obstructive pulmonary Disease is defined as a preventable and treatable disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and is associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily caused by cigarette smoking. Although COPD affects the lungs, it also produces significant systemic consequences.^[1]

Chronic obstructive pulmonary disease (COPD) is responsible for early morbidity, high death rates and significant cost to health systems. The projection for 2020 indicates that COPD will be the third leading cause of death worldwide (from sixth in 1990) and fifth leading cause of years lost through early mortality or handicap (disability-adjusted life years) (12th in 1990). Active smoking remains the main risk factor, but other factors

are becoming better known, such as occupational factors, infections and the role of air pollution. Prevalence of COPD varies according to country, age and sex.^[2]

Limitation of activity and impaired quality of life are important outcomes of COPD. There is an association between measures of self-reported physical activity and overall health status, and they appear to change together spontaneously over time and in response to treatment. The relationship between symptoms and activity limitation is complex, because activity can be limited entirely by symptoms, or impaired by symptoms so that it requires greater effort or causes discomfort. Self-reported limitation of activity may form a reliable construct, and may also provide a good surrogate marker of health status in COPD.^[3]

Previous research on COPD has shown that COPD patients are confronted with daily life limitations,

reduced daily activities (DA), and reduced health-related quality of life (HRQoL) caused by complaints such as dyspnea, skeletal muscle dysfunction, and co-morbidities.^[4]

In the last decade, in the Netherlands and in many other countries, care for patients with COPD has increasingly moved from hospitals to primary care.^[5] According to the COPD guidelines in the Netherlands, general practitioners and practice nurses play a key role in care for COPD patients in primary care.^[6]

Psychological factors, such as illness perceptions, depressive symptoms, and ability to cope with the illness, may complicate living with COPD and participation in everyday activities.^[7]

Studies of the rehabilitation of COPD patients and patients who attended outpatient clinics show that COPD patients with positive beliefs about the impact of their disease on daily life and those with more positive thoughts about the effect of their treatment have a better HRQoL than patients who have more negative perceptions.^[8,9]

The study was conducted with following aims and objectives:

1). To assess the effect of treatment on Quality of life(QOL) in the patients suffering from Chronic Obstructive Pulmonary Disease.

MATERIAL AND METHODS

The Prospective, observational, open label study was conducted from march 2014 to march 2015 after obtaining the approval from institutional ethics and research review board. A total of 250 patients of chronic obstructive pulmonary disease diagnosed by the Department of Chest and Tuberculosis, Government medical college, Patiala were enrolled. The patients fulfilling the inclusion criteria and having none of the exclusion criteria were enrolled in the study after obtaining written informed consent. Descriptive statistics was applied for the analysis of data. Data was expressed in proportion and percentages.

Patient Inclusion Criteria

- A diagnosed case of COPD by Department of Chest and Tuberculosis, Government medical college & Hospital Patiala.
- Patient more than 40 years of age.
- Exacerbations of COPD.

Patient Exclusion Criteria

- Diabetic patients.
- Suspected or confirmed tuberculosis patient.
- Cardiac, gastrointestinal or hepatic insufficiency.

- Asthmatic patient.
- Age < 40 years.
- Immunocompromised.
- Pregnant and lactating females.

RESULTS

In present study Chronic Obstructive Pulmonary Disease was more prevalent in males as compared to females as out of 250 patients 172 were males and 78 were females with Male: Female of 2.47:1. The most common age group of disease occurrence was 51-60 years as 92 patients were in this age group (36.8%) followed by 61-70 years age group 70 patients (28%) were in this age group, followed by 41-50 years age group 66 patients (26.4%) were in this age group and 50 out of 66 patients (76%) in this group were females suggesting early onset of COPD in females, followed by 22 patients (8.8%) in the 71-75 years age group.

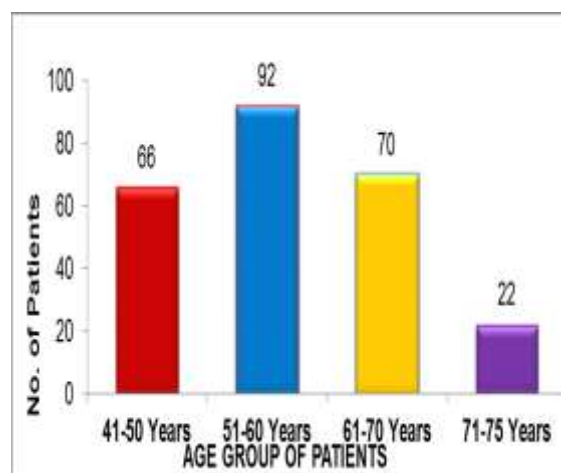


Fig. 1.

In the study 41.0% were admitted patients (i.e 103 patients out of 250 patients) and 59.0% were OPD patients (i.e 147 patients out of 250 patients). 115 (46%) patients were graded as Mild COPD and were given SABA alone (monotherapy), 72 (28.8%) as Moderate COPD and were given SABA+ Inhaled Corticosteroids, 49 (19.6%) patients as Severe COPD and were given Inhaled Anticholinergic + LABA +Inhaled Corticosteroids combination +oral corticosteroids+ Oxygen Inhalation + Iv Antibiotics (combination therapy), 14 (5.6%) patients as very severe Disease/ Respiratory failure, and were referred for surgical intervention. The most commonly Prescribed drugs were SABA in 187 Patients (74.8%)-MDI Salbutamol or MDI Terbutaline ,followed by Inhalational Corticosteroids prescribed in 121 patients (48.4%)- Budesonide or Fluticasone, followed by Antibiotics- Ceftriaxone/Tazobactam, Oral Corticosteroids- Deflazacort or Prednisolone and LABA MDI Salmeterol or MDI Formoterol in 49 Patients (19.6%)each.

TABLE: 1 DISTRIBUTION OF PATIENTS ACCORDING TO TREATMENT GIVEN.

Grading	Treatment Given	No. of Patients	Percentage
Mild	SABA	115	46.0%
Moderate	SABA +Inhaled Corticosteroids	72	28.8%
Severe	Inhaled Anticholinergic + LABA/ Inhaled Corticosteroids + Oral Corticosteroids + O ₂ inhalation+ Iv antibiotics	49	19.6%
Very Severe	Referred for Surgical Intervention	14	5.6%
	Total	250	100%

In the present study follow up of the patients was done at 0, 3 and 6 months duration to look out for any change in the symptoms in both, frequency as well as severity and duration. 90% patients (104 out of 115 patients) having mild disease reported the improvement in symptoms and decrease in both frequency and severity at 3 months duration while the percentage rise to 98% (113 out of 115 patients) at the end of 6 months. Moderate severity

patients reported improvement in 87% patients (62 out of 72 patients) at the end of 3 months while for the same severity the percentage of patients showing improvement rise to 90% (65 out of 72 patients). Severe stage diseased patients reported improvement in 78.4% (38 out of 49 patients) at the end of 3 months as well as 6 months treatment. Patients having very severe disease were referred for surgical intervention.

Table: 2 Follow Up Of Patients At 0, 3 And 6 Months Of Treatment Initiation

Disease Severity	Treatment given	Total patients	Improvement in patient symptoms		
			0 months	3 months	6 months
Mild	SABA	115	-	90%	98%
Moderate	SABA+ Inhaled Steroids	72	-	87%	90%
Severe	Anticholinergic+ LABA+ inhaled Steroids	49	-	78.4%	78.4%
Very Severe	Surgical treatment (Referred)	14	-	-	-

DISCUSSION

Overall highest incidence of COPD was seen in 51-60 years age group, 46% patients (115 out of 250) were given Monotherapy in the form of SABA alone, 48.4% patients (121 out of 250) were given combination therapy in the form of SABA/LABA/ Corticosteroids/ Anticholinergics/Antibiotics, and 5.6% patients (14 out of 250) were not given any medical therapy as they were referred for surgical intervention. Follow up of the patients was done at 0, 3 and 6 months duration to look out for any change in the symptoms in both, frequency as well as severity and duration. 90% patients (104 out of 115 patients) having mild disease reported the improvement in symptoms and decrease in both frequency and severity at 3 months duration while the percentage rise to 98% (113 out of 115 patients) at the end of 6 months. Moderate severity patients reported improvement in 87% patients (62 out of 72 patients) at the end of 3 months while for the same severity the percentage of patients showing improvement rise to 90% (65 out of 72 patients). Severe stage diseased patients reported improvement in 78.4% (38 out of 49 patients) at the end of 3 months as well as 6 months treatment. Daily activities were affected most in patients of severe COPD irrespective of the age group of the patients.

CONCLUSION

To adjust to life with COPD and to prevent further physical deterioration, it is important that patients participate in everyday activities and physical exercises and that they anticipate potential threats. In this respect, proactive coping, which refers to efforts undertaken to

prevent or modify a potential threat to a person's health, may play an important role. Patients with severe COPD are generally older and require medication for other medical conditions. The reason for non improvement in quality of life may be due to non or poor adherence to treatment regime. Polypharmacy is another common and important contributor to poor adherence. Therefore further studies involving large number of prescriptions of Chronic Obstructive Pulmonary Disease are required to find the compliance of treatment with guidelines in order to avoid Drug resistance. There are clearly some areas where there could be improvement which would both be of benefit to patients and to providing their care in hospital.

ABBREVIATIONS

COPD- CHRONIC OBSTRUCTIVE PULMONARY DISEASE

GOLD- GLOBAL INITIATIVE FOR OBSTRUCTIVE LUNG DISEASES

LABA- LONG ACTING BETA-2 AGONISTS

SABA- SHORT ACTING BETA-2 AGONISTS

QOL- QUALITY OF LIFE

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