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IMPACT OF COUNSELING ON COMPLIANCE IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS ATTENDING GENERAL MEDICINE OUT PATIENT DEPARTMENT IN A TERTIARY CARE HOSPITAL: A PROSPECTIVE STUDY

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Financial Support: None declared
Conflict of interest: None declared
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How to cite this article:

Patel MB, Patel MN, Sachora WM, Ghodela VA. Impact of Counseling on Compliance in Chronic Obstructive Pulmonary Disease Patients Attending General Medicine Out Patient Department in a Tertiary Care Hospital: A Prospective Study. Natl J Community Med 2013; 4(3): 525-528.

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Date of Submission: 01-08-13

Date of Acceptance: 03-09-13

Date of Publication: 30-09-13

ABSTRACT

Background-Non Compliance in patients with Chronic Obstructive Pulmonary Disease (COPD) to the medication can result in worsening of the disease and increases the hospital admissions. This study aimed to improve compliance in COPD patients.

Methodology: Total 60 Patients aged 18 years & more with symptoms of dyspnea and chronic cough with or without sputum production who attended OPD from 1st march to 31staug 2011, were counseled for compliance. Pre validated questionnaire was administered at 0 week, 2 weeks and at 6 weeks.

Result: Ninety percent of the patients took the prescribed oral drugs in correct dose; correct timings and 77% complied with hospital visits. In contrast to oral drugs only 36% of the patients were compliant to the use of inhaler at the first visit which improved to 59%. Life style changes related to diet and exercise were followed by 32% patients. Only 19% of patients quit smoking. In order to improve compliance levels repeated counseling or stressing the importance of use of inhalers and quitting smoking was found an ineffective method

Conclusion: This study concludes that the physicians should counsel the patient about their disease, emphasize on the medication to be taken in correct dose, timings and method of inhaler use to improve the quality of life of patients of COPD.

Key Words: Chronic Obstructive Pulmonary Disease (COPD), Compliance, Smoking cessation, Inhalers

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is characterized by an irreversible decline in lung function, exercise capacity and health status.¹ COPD is a chronic illness and poor adherence of patients to the disease management may result in increased rate of morbidity, health care expenditures, hospitalizations and reduced Quality of Life (QoL). There can be increase in the dose of therapy. It can be affected by the various per-

ceptions of the patient about the disease, social beliefs, type of treatment and medication, quality of service provider and social environment.²

Many of times there is acute clinical worsening of disease and it may necessitate a change in regular therapy. Majority of exacerbations are not reported and most likely not treated. These events have clinically relevant impact on Health Related Quality of Life (HRQoL).¹

International guidelines for the treatment of COPD recommend therapy with one or more bronchodilators in patients with moderate disease, and addition of an inhaled corticosteroid in patients with severe or very severe COPD. Bronchodilators which are long acting are preferred over the short acting agents.³ According to Jing Jin et al. compliance is the extent to which the behavior of the patient corresponds in terms of taking medication, following diet instructions or executing life style changes with agreed recommendations of from a health care provider.⁴ It is often defined as the extent to which a person behavior coincides with the clinical prescription. Treatment with multiple drugs, lifestyle modification and adherence to the drug therapy plays a crucial role to prevent and control the exacerbations⁵, with this back ground present study was aimed to improve compliance of the patients.

OBJECTIVES

The objective of the study was to study the effect of counseling on compliance of medication, lifestyle modification and smoking cessation in COPD patients and also to identify the causes for non compliance.

MATERIAL AND METHODS

This was a tertiary care hospital based open labeled questionnaire based 6 months study from 1st March 2011 to 31st Aug 2011. The present study was conducted after taking Institutional Ethics Committee approval and a written informed consent from participating patients.

Patients aged 18 years & more with symptoms of dyspnea and chronic cough with or without sputum production were included in the study. Assessment of the disease was done by the physical examination, chest X-ray, blood biochemistry and spirometry. FEV₁ (forced expiratory volume in 1 second), FVC (forced vital capacity) and FEV₁/FVC ratio was done on each patient on the first visit. History of smoke exposure, a post-bronchodilator FEV₁/FVC of <0.7 according to Global Initiative for Chronic Obstructive Lung Disease (GOLD) standards. Patients with asthma, cardiac diseases or other major functionally limiting disease were excluded. There were total 63 patients were enrolled in the study after applying the inclusion criteria. Out of these 63 patients 3 patients were lost to follow up during successive visits. therefore our study was based on 60 patients who gave the written consent to participate and completed the study.. In this

study the patients were prescribed budesonide 200mcg and formoterol 6mcg Tiotropium Bromide 9mcg twice daily in inhaler and tablet deriphylline retard 300 mg once daily. Drugs were prescribed according to the severity of disease. Several studies have shown that combination of long acting B-agonist with an inhaled corticosteroid offered additional bronchodilator efficacy over a bronchodilator alone.⁶

A pre validated questionnaire comprising of 15 questions which included both open & closed questions, was administered at 0 week, 2 weeks (1st follow up) and at 6 weeks (2nd follow up) assess the compliance of patients to the medication, life style modification and to quit smoking in smokers. The questionnaire was pre validated on 10 patients and then administered after making the required changes. The diagnosed patients were asked to fill the questionnaire at zero weeks. They were given all the instructions regarding the medication dose frequency and timings. During each visit, they were educated & counseled individually for the use of inhaler, the correct technique of using inhaler was taught to them to ensure proper drug inhalation by the patient by treating physicians/resident doctors/intern doctors in OPD room itself. All the patients' were also counseled for smoking cessation. They were shown the pamphlets or charts how smoking continuation can worsen their diseases and quality of life. Instructions regarding life style changes and diet were also given to the patients.

Clinical and demographic variables: Demographic and clinical data collected was related to compliance of patients. These factors consist of demographic variables (age, gender, education, ethnicity, profession, urban or rural population), and clinical variables such as (history of smoking, duration of COPD, previous hospitalization).

Evaluation of COPD compliance: To assess the compliance of COPD patients following parameters was recorded. Medication both dose and timing, appointment keeping, smoking cessation, exposure to smoke and exercise. It aimed at examining the dimensions of compliance in COPD patients to the: Medication, Life style, Smoking cessation. Subsequently in the next visit they were asked whether they had difficulty in complying with the various parameters.

Knowledge and beliefs: The knowledge regarding their disease, smoking habits and its relation with the COPD and its progression was also recorded. The beliefs regarding medication, inha-

lersand the various barriers about their compliance were asked.

RESULTS

Clinical and demographic data was assessed on 60 patients (Table 1). Sixty five percent of the patients were in the age group of 51 to 70 years. Eighty eight percent of the patients were females. Eighty percent of the patients were of rural origin. One third (20%) of patients working on chullah, and occupations such as chimney workers and brick kiln workers. They had symptomatic relief at 6 weeks on following the instructions and decreasing the chullah exposure by female patients. Eight patients with the illness more than 5 years had been hospitalized previously once (3%) and twice (8.3%) for exacerbation of their disease.

Table 1: Demographic and Clinical Variables in Patients of COPD

Demographic Factors	Patients (%)
Age(years)	
<30	2(3.3)
31>50	11 (18.3)
51 > 70	39 (65)
71 and above	8(13.4)
Gender	
Males	53 (88.3)
Females	7(11.7)
Area	
Urban	12 (20)
Rural	48 (80)
Smoking	
Active Smokers	39 (65)
Nonsmokers	9(15)
Passive smokers*	12 (20)
Income per month (Rs)	
Low (< 3000)	31 (51.6)
Middle (3000 - 10000)	24 (40)
High (> 10000)	5(8.3)
Education	
Literates	46 (76.7)
Illiterates	14 (23.3)
Duration of disease	
Less than five years	34 (56.7)
More than five years	26 (43.3)
Any Previous hospitalizations due to acute attack	
Once	3(5)
Twice	5(8.3)
More than 2 times	0(0)

*Include passive exposure to cigarettes, chimneys, chullah, brickkiln workers etc

To study the compliance all patients were interviewed personally as well as they were asked to

fill up the questionnaire. Analysis of compliance was based on 1st & 2nd follow up visit while information collected on the very first visit with the patient was used to do overall assessment of the patients. Out of the total patients only 74% were compliant in all three component namely correct doses & timing of medicine, day of visit & inhaler use. The life style changes related to diet

and exercise were followed by 32% .Ninety percent of the patients took the prescribed oral drugs in correct dose, correct timings at the second visit at 2nd week which improved to 94.3% by the end of 6 weeks. Seventy seven percent of patients visited the hospital the same day as being told at second week which improved to 82% by 3rd visit. Sixty five percent of the patients wanted to quit the smoking and only 19% of them quitted at the end of the study.

The causes for their non compliance were: their work, could not get the leave the same day, were busy at home or had no conveyance. Patients had improvement of their symptoms over a period of time. Only 2 patients had exacerbation of the disease during study period and were hospitalized for 4-5 days. They were nebulized and had injectable drugs. The symptoms improved and they were compliant to their medication and lifestyle afterwards. Seven percent of the rural and uneducated patients believed that use of inhalers could be habit forming, so they were counseled against their false beliefs. Literate patients were aware about the health hazards of smoking, 10 patients admitted that their disease was due to and is aggravated by smoking. Strategy for smoking cessation included counseling and nicotine gum whenever they had a craving for smoking.

DISCUSSION

COPD has been recognized as a disease which results in increased morbidity, mortality and a compromised quality of life in later stages. Compliance to medicine was increased 4.3% (90% to 94.3%) and for inhaler 23% (36% to 59%) (Table.2) but it was not statistically significant after applying Chi square test (at d.f. =2, p<0.4) .In TORCH study it was concluded that though the association between increased adherence, improved mortality and reduction in hospital admission was independent of treatment given to patients.⁷ But at the same time the effect of treatment was more pronounced in patients with

good adherence than in those with poor adherence. Even adherence to inhaled medication was significantly associated with reduced risk of death and admission to hospital due to exacerbations in COPD.

In our study the 26% patient were non compliant mainly regarding the inhaler use (41% after second f/up visit) followed by visiting the physician on advised day (18% after at second f/up visit) Rand CS et reported that patient adherence to medication is low due to incomplete relief from the symptoms, acute exacerbations on exposure to dust and lack of smoking cessation.⁶ Compliance with medication also varies with the level of education. The educated patients were able to understand the importance of medication, correct dosing and time.

Table 2: Impact of counseling on compliance

Compliance factors	1st follow up visit	2nd follow up visit
Correct dose & correct timing of medicine	90%	94.3%
Day of visit as advised	77%	82%
Use of inhaler	36%	59%

According to Bourbeau J and Bartlett SJ Physicians also play a critical role in helping patients understand the nature of the disease, potential benefits of treatment, encouraging patients to develop self-management skills and addressing concerns regarding potential adverse effects and events.⁸ It is important to explore patient's beliefs and concerns about the safety and benefits of the treatment, as patients may have their own fears. The treatment should be kept simple as complex regimens and polytherapy also contribute to suboptimal adherence.⁸

In this study majority of the patients were given information about lifestyle change and ongoing management. They were also taught the technique of effective use of the inhaler. But the information received was not that effective as the patients have their own beliefs and due to their low education level and certain myths about the use of inhalers.

It has been found in many studies that physicians should also adhere to a written action plan for the treatment of acute exacerbation of COPD. As it is helpful in decreasing the recovery time and hospital stay of the patients.⁹

CONCLUSIONS

The present study represents the compliance of COPD patients to the medication, dose and duration, lifestyle changes. The data indicates that elderly, male patients of rural origin are less compliant as compared to that of urban, educated people. Patients with low level of education and low income are less compliant to the instructions given to them. Most of the patients are compliant with the instructions regarding inhaler use, correct method and dose. It helped them to relieve their symptoms and decreased the acute exacerbation of the disease. Counseling regarding smoking cessation was helpful in some patients. This study concludes that the physicians should counsel the patient about their disease, emphasize on the medication to be taken in correct dose, timings and method of inhaler use to improve the quality of life of patients of COPD.

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