IMPACT OF CLINICAL PHARMACIST COUNSELLING ON HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH OBSTRUCTIVE PULMONARY DISEASES

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ABSTRACT

BACKGROUND

Obstructive pulmonary diseases include Chronic Obstructive Pulmonary Disease (COPD), Bronchial Asthma, Bronchiectasis, Small Airway Disease (Bronchiolitis). Among these, Bronchial Asthma and COPD are included in this study. The SGRQ questionnaire is used for measuring impaired health and perceived HRQoL in airways disease (COPD and Asthma). The objective of the present study was to assess the influence of clinical pharmacist counselling on health-related quality of life in a patient with asthma & COPD.

MATERIALS AND METHODS

This prospective, interventional study was carried out in the general medicine department for a period of 6 months in RIMS Hospital, Kadapa. Patients were enrolled in the study based on inclusion and exclusion criteria. Study subjects were divided equally into two groups- patient counselling group (60) and without patient counselling group (60). All the study subjects were interviewed for the data regarding their demographics, disease type and state, social history, personal habits, etc. Health-related quality of life of all the study subjects was assessed at the baseline with SGRQ questionnaire and noted.

RESULTS

A total of 120 obstructive pulmonary disease patients were recruited under the inclusion criteria. Out of these, 48(40%) were from asthma and 72 (60%) were COPD and 86 (71.66%) were male and 34 (28.33%) were females. Among 120 patients smoking was present in 90 (75%), followed by alcoholism 4 (3.33%), climate changes 22 (18.33%), beetle nut chewing 4 (3.33%). 66 (55.00%) were labourers, 20 (16.66%) were farmers, 10 (8.33%) were housewives and 24 (20.0%) were from other professions. The average HRQoL score of the total study subjects (120) was found to be 27.29.

CONCLUSION

This study concluded that the clinical pharmacist involvement in Asthma and COPD disease management has a positive impact on creating awareness about the disease, which improves medication compliance along with Quality of Life.

KEYWORDS

Asthma, COPD, Health Related Quality of Life.

BACKGROUND

Obstructive pulmonary diseases include Chronic obstructive pulmonary disease (COPD), Bronchial asthma, Bronchiectasis, small airway disease (Bronchiolitis) among

this Bronchial asthma and COPD are included in this study.[1] "Asthma is a chronic inflammatory disorder of the airways. Chronically inflamed airways are hyperresponsive; they become obstructed and airflow is limited (by bronchoconstriction, mucus plugs, and increased inflammation) when airways are exposed to various stimuli, or triggers."[2] In susceptible individuals, this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning.[3] COPD is a disease state characterized by airflow limitation that is not fully reversible. It includes emphysema, is a condition that involves damage to the walls of the air sacs of the lungs. Chronic bronchitis is a condition of increased swelling and mucus production in the airways.[4]

Throughout the world approximately 334 million people are suffering from asthma[5] in each decade prevalence is increased by 50%. In India, it is estimated that more than 15 million populations are affected by asthma and the overall prevalence of diagnosis of asthma was at 2.38% with 0.2% of death.[3] Asthma is the 14th most important disorder in the world in terms of the extent and duration of disability.[5] COPD is a major cause of morbidity and mortality across the globe. According to WHO estimates 65 million have moderate to severe COPD. More than 3 million people died in 2005, 5% of all death globally. 3rd leading cause of death by 2030. In India, 53% of all death and 44% of disability-adjusted life years (DALYs) lost in 2005. 30 million suffer in India with COPD.[6]

Asthma accounts for 0.5% of the national burden of disease. In 2010, it was estimated that the total asthma costs would have been €500-800 million annually by then, if nothing had been done and if 1990s trends had continued.[5] the economic impact of COPD continues to increase as well. It was estimated at $23 billion in 2000 and rose to $37.2 billion in 2004, including $20.9 billion in direct costs and $16.3 billion in indirect morbidity and mortality costs.[7,8] In the mixed health market of India, the economic and financial burden of treating diseases is not within the reach of common people and the rate of out-of-pocket expenditure among total health expenditure is 62.41%.[9] Asthma accounts for 0.5% of the national burden of disease.[3]

According to the encyclopaedia of biopharmaceutical statistics, adherence is defined as Willingness to follow the prescribed course of treatment. The act of complying with a wish, request or demand.[10,11] Medication compliance is important in managing the disease. Non-compliance can lead to lack of drug efficacy.[12]

"HRQoL is defined as the value assigned to duration of life as modified by impairments, functional states, perceptions, and social opportunities that are influenced by disease, injury, treatment, or policy." In the past decade, disease-specific HRQoL instruments specifically aimed at COPD and asthma have been developed.[13] the best known and most frequently used a disease-specific HRQoL questionnaire for respiratory diseases, both for COPD and for asthma, is the ST George's Respiratory Questionnaire (SGRQ). The SGRQ is a standardised, self-administered questionnaire for measuring impaired health and perceived HRQoL in airways disease (COPD and asthma).

Role of Clinical Pharmacist Inpatient Counselling
Appropriate advice and counselling by the pharmacist will make the patient understand better about their medication, which has become potent and toxic with the advancement of science this will in turn increase patient compliance, which can otherwise result in the inappropriate or inadequate use of drugs,

The objective of the counselling is to provide directions, instructions, advice about the drug as per prescription and imply a positive behaviour in which the patient is motivated to adhere to the prescribed treatment. Moreover, as per the new code of ethics, it becomes the responsibility of the pharmacist to counsel the patient before dispensing of drugs in many countries.[14] Meeting with patients is fundamental in educating them on correct drug use, and recommending dietary and lifestyle changes.[15] Patient counselling is having an impact on the HRQoL of the patients, hence we hypothesised to assess the HRQoL of asthma and COPD patients along with the factors which influence and procedures that improve the HRQoL.

The objective of the present study was to assess the influence of clinical pharmacist counselling on health-related quality of life in a patient with asthma and/or COPD.

MATERIALS AND METHODS
The present study was done on General medicine inpatient and outpatient department at RIMS Hospital, Kadapa serving the people coming from poor socioeconomic status. This is a prospective, interventional study. A consecutive 120 patients diagnosed with asthma and COPD and it was carried out during the period of about 6 months at Rajiv Gandhi Institute of Medical Sciences Medical College attached to RIMS Hospital, Kadapa. Patients are enrolled in the study based on inclusion and exclusion criteria.

Patients with age group between 30-70 years, both old and new asthma and COPD Patient are included in this study and Pregnant and Lactating women, Paediatric patient, both old and new asthma and COPD patients with comorbidities are excluded.

St. George's Respiratory Questionnaire (SGRQ)
The SGRQ is designed to measure health impairment in patients with asthma and COPD. It is also valid for use in Bronchiectasis and has been used successfully in patients with kyphoscoliosis and sarcoidosis. It is not suitable for cystic fibrosis. It is in two parts. Part I produce the Symptoms score and Part 2 the Activity and Impacts scores. The total score is also produced.

Excel-Based Scoring Calculator
Three component scores are calculated for the SGRQ-
Symptom - This component is concerned with the effect of respiratory symptoms, their frequency and severity.
Activity - Concerned with activities that cause or are limited by breathlessness.
Impacts - Covers a range of aspects concerned with social functioning and psychological disturbances resulting from airways disease

The total score is also calculated which summarises the impact of the disease on overall health status. Scores are expressed as a percentage of overall impairment where 100 represent the worst possible health status and 0 indicates the best possible health status.

An Excel spreadsheet accompanying this manual called SGRQ Calculator which can be used to calculate the three SGRQ component scores and the Total score.[16]

Assessment of HRQoL

Study subjects were recruited after getting ethical approval from the institutional ethics committee of RIMS, and after obtaining written and signed an informed consent form from the subject after explaining about the study.

Study subjects were divided equally into two groups' i.e. Patient counselling group (60) and without patient counselling group (60). All the study subjects were interviewed for the data regarding their demographics, disease type and state, social history, personal habits, etc.,

Health-related quality of life of all the study subjects was assessed at the baseline with SGRQ questionnaire and noted. And, for patient counselling group information was provided orally and in written material, but for non-patient counselling group oral instructions were given without any written information and asked both group subjects to come for follow-up after two months. We have followed the subjects' up to 4 months with two follow-ups (2 months once). HRQoL was assessed at each follow-up from the two groups.

During baseline patients' were instructed regarding their disease identification, aetiology, risk factors, complications and its management, regarding medications prescribed such as dose to be taken, frequency, time of administration, administration procedures especially for inhalers, rotahalers and nebulizers by using pictograms and dummy instruments, duration of therapy, possible side effects, and lifestyle changes including food habits, cessation of social habits like smoking, alcohol consumption and exposure to the allergens and physical activities importance.

Before starting a counselling session we have taken permission from the patient through the consent form at baseline and assent at each follow-up.

RESULTS

A total of 120 obstructive pulmonary disease patients were recruited under the inclusion criteria and out of these 120 study subjects are equally divided into two groups that is patient counselling group and non-patient counselling group.

Gender wise Distribution of Study Subjects

Out of 120 obstructive pulmonary disease patients, 86 (71.66%) were male and 34 (28.33%) were females. It was represented in Table 1.

Age wise Distribution of Patients

Out of 120, 46 (38.33%) patients were found in the age group of 51- 60 years followed by 44 (36.66%) were from 61-70 years and 20 (16.66%) were from 41-50 years, 10 (8.33%) from 31-40 years. It was represented in Table 1.

Occupation wise Distribution of Patients

Out of 120 study subjects, 66 (55.00%) were from labours followed by 20 (16.66%) from farmer& 10 (8.33%) from housewives and 24 (20.0%) from others. It was represented in Table 1.

Type of Obstructive Pulmonary Disease

Out of 120 patients, 48 (40%) were suffering from asthma and 72 (60%) were COPD. It was represented in Table 1.

Type of Risk Factors Assessment

Among 120 patient smoking was present in 90 (75%), followed by alcoholic 4(3.33%) and climate changes was 22 (18.33%), beetle nut chewer 4 (3.33%).it was represented in Table 1.

Parameter	Number	Percentage (%)
Gender		
Male	86	71.666
Female	34	28.333
Age (Years)		
31-40	10	8.33
41-50	20	16.66
51-60	46	38.33
61-70	44	36.66
Occupation		
Cooley (Labour)	66	55.00
Farmer	20	16.66
Housewife	10	8.33
Others	24	20.00
Risk Factors		
Smokers	90	75
Alcoholic	4	3.33
Climatic Changes	22	18.33
Beetle Nut Chewer	4	3.33
Type of the Disease		
Asthma	48	40
COPD	72	60
Table 1. Demographics of the Study Population		

Assessment of HRQoL Score

The average HRQoL score of the total study subjects (120) was found to be 27.29

Patient Counselling Group

The average HRQoL score of 60 study subjects at baseline was 30.45, at 1st follow-up, it was 21.89 followed by 2nd follow- up the average HRQoL was 14.28. It was represented in Table 2.

Non-Patient Counselling Group

The average HRQoL score of 60 study subjects at baseline was 29.26, at 1st follow-up, it was 23.26 Followed by 2nd follow- up the average HRQoL was 17.84. It was represented in Table 2.

Comparison of HRQoL:

In intragroup comparison, the average HRQoL score of patient counselling group from baseline to 1st follow up and to 2nd follow up was (30.45 vs. 21.89), (30.45 vs. 14.28) respectively and the average HRQoL score of non-patient counselling group from baseline to 1st follow up and to 2nd follow up was (29.26 vs. 23.26) and (29.26 vs. 17.84) respectively. It was represented in Table 2.

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In intergroup comparison, the average HRQoL score of two groups i.e. Patient counselling and non-patient counselling at baseline were found to be (30.45 vs. 29.26), at 1st follow up (21.89 vs. 23.26) and at 2nd follow up (14.28 vs. 17.84). It is demonstrated in table 2 along with their p values by using "t-test" with graph pad prism software.

With PC VS. Without PC					
Baseline (Average)		1ST Follow-up (Average)		2ND Follow-up (Average)	
With PC (n=60)	Without PC (n=60)	With PC (n=60)	Without PC (n=60)	With PC (n=60)	Without PC (n=60)
30.45	29.26	21.89	23.26	14.28	17.84
p = 0.3743		p = 0.4049		p = 0.0127	
Table. 2. Comparison of HRQoL Score					

DISCUSSION

In our study period, we found the incidence rate as very less due to most patients admitted are having a known history of bronchial asthma and COPD whereas newly diagnosed cases are having a family history or no proper care taken by them. the prevalence of bronchial asthma was more in females 28 (23.33%) than in males 16 (13.33%) which is supported by K.V. Ramanath et al.[3] study and prevalence of COPD was more in males 70 (58.33%) than in females 4 (3.33%) is supported by Ajay R Fugate et al.[17] study.

As per our study, it was found that patients with age group of 51-60 yrs 46 (38.33%) are more vulnerable to asthma and COPD which showed similarity with the study conducted by Forde Gallefoss et al.[18]

We found that Cooley's 66 (55%) were suffering from asthma and COPD more when compared to other occupation people. As our study site is Govt. set up so consultation of Cooley patients is much high when compared to other occupation people and as they are illiterates and leading unhealthy lifestyle and they are not able to control risk factors and also we found that farmers 20 (16.66%) were next to that group which is supported by K. V. Ramanath et al.[3] study.

As per our study, it was found that the predominant risk factors for asthma and COPD are smoking 84 (75%) which is supported by Thomas Reema et al.[19] studies. We found, climatic changes as a risk factor in 22 (19.64%) patients, which showed similarity with the study conducted by Kabila et al.[20]

Two types of obstructive pulmonary disease patients were studied in this study i.e., Asthma 48 (40%) and COPD 72 (60%).

We have assessed the HRQoL of the total study subjects with SGQR Questionnaire at baseline and at follow-ups and found that no significant difference in HRQoL score was observed between two study groups. (p = 0.0127)

In intragroup comparison, a significant improvement was observed in HRQoL from baseline to 1st follow up and from baseline to 2nd follow up in patient counselling group and in the non-patient counselling group.

We have compared the HRQoL score of two groups (patient counselling Vs without patient counselling) at the end of the study and we observed improvement in HRQoL of patient counselling group with statistical significance difference (p=0.0127) by using "t-test" with graph pad prism software. Which happened in 4 months duration which proves the importance of patient education/counselling in improving HRQoL?

So we have observed a significant improvement in both study groups with intra comparison, this is because that we have given instructions to all study population regarding the disease & medication use. When we compare two groups HRQoL a very significant improvement was observed in patient counselling group than another group as this group received instructions both orally and in written format, but non-patient counselling group has not received written instructions.

CONCLUSION

This study concluded that continuous education programs and counselling should be conducted for chronic diseases to improve the patients' Quality of Life, to prevent recurrences, reduce progression of the disease and ultimately minimize hospitalization and there is a need for continuous pharmaceutical care services/monitoring to minimise the cost and to improve the quality of life. Further, a similar type of educational and monitoring service for providing disease patient information leaflets can improve the clinical and humanistic outcomes. The present study showed that the clinical pharmacist involvement in Asthma and COPD disease management has a positive impact in creating awareness about the disease, which improves medication compliance along with Quality Of Life.

Acknowledgement

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