



Impact of COPD (Chronic Obstructive Pulmonary Disease) on Health Related Quality of Life (HRQOL)– A Cross Sectional Study

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Abstract

COPD is associated with airflow limitation which is only partly reversible. Thus the main focus of treatment is on bringing down the severity of symptoms and improving the quality of life in these subset of patients. This study evaluates the quality of life and variables which affect quality of life in COPD patients.

Materials and Methods: *Patients with a registered diagnosis of COPD were enrolled and their quality of life assessed using the St George Respiratory Questionnaire for COPD (SGRQ-C). Demographic and clinical data recorded. Severity of COPD was assessed by spirometry (GOLD Guidelines).*

Results: *HRQOL was significantly reduced in patients suffering from COPD. High HRQOL scores (reduced quality of life) had a strong positive correlation with severity of COPD, prolonged duration of illness and degree of dyspnoea.*

Conclusion: *Quality of life in COPD patients is poor due to chronic symptoms and frequent exacerbations. COPD evaluation should include HRQOL assessment in addition to pulmonary function test so that pulmonary rehabilitation measures and psychosocial interventions can be planned at the earliest to improve the quality of life.*

Keywords: *Quality of life, SGRQ-C, COPD.*

Introduction

COPD is ranked as the third leading cause of death in 2012 affecting 329 million people which is approximately 5% of the world's population.⁽¹⁾

This disease presents with progressive symptoms and exacerbations thereby having a significant impact on health related quality of life.⁽²⁾ HRQOL evaluation is mandatory in all COPD patients as it

helps in planning medical therapy, behavioural therapy and psychological interventions at the earliest.

Objectives

1. To assess the quality of life in COPD patients by using SGRQ-C.

2. To identify disease specific variables which has an impact on quality of life.

Materials and Methods

100 male patients with a pre-registered diagnosis of COPD attending outpatient section at respiratory medicine department were enrolled in this cross sectional study. Patients who were 1)>40years 2) Ex-Smoker/Current Smoker, FEV1/FVC <70% on spirometry and those willing to take part in this study were included. Known cases of chronic medical illness like Hepatic/ Renal disease, psychiatric illness, malignancy which might be a confounding factor interfering with the quality of life were excluded. Clinical and Demographic data recorded. Degree of dyspnoea assessed by MMRC Scale (Modified Medical Research Council). Spirometry with standard calibration performed by a trained technician according to ATS (American Thoracic Society) Guidelines. GOLD Guidelines was used to classify severity of COPD based on spirometry values.⁽⁴⁾ HRQOL was evaluated using the SGRQ-C Questionnaire.

SGRQ-C is a standard self administered brief questionnaire derived from the original version of SGRQ.⁽⁵⁾ It contains 40 items which covers three domains: Symptoms, Activity, Impact and a Total score. This questionnaire is scaled between 0-100 with 0 depicting the best HRQOL. Higher the score poorer the quality of life.⁽⁶⁾

Statistical Analysis

Analysed using SPSS-Version 21 (Statistical Package For Social Sciences) and a P value of <0.05 was said to be significant. Chi-Square test was used to compare categorical data.

Working Definitions

a) Socio-economic status:

- <5000/month – low income
- 5000- 10000/month – middle income
- >10000/month – high income

b) Education⁽⁷⁾

- Illiterate – Not been to school

- Prim. <10th std
- High school – 10th std and above

c) MMRC-Scale for Dyspnoea⁽⁸⁾

Grade	Symptom complex
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or I have to stop for breath when walking at my own pace on the level
3	I stop for breath after walking about 100 metres or after a few minutes on level ground
4	I am too breathless to leave the house or I am breathless when dressing or undressing

d) Spirometry Findings.⁽⁹⁾

Gold guidelines:

FEV1/FVC-<70% and

FEV1>80% - Mild obstruction

50 – 79% - Moderate obstruction

30 – 49% - Severe obstruction

< 30% - Very Severe obstruction

Results

Mean age of the study population was 58.7+/- 9.1. Demographic and clinical data is depicted in Table-1 and Table-2 respectively. 57% patients were below 55 years and only 24% had been to high school. 43% had breathlessness for >10years and 77% had dyspnoea of grade 2-3 (MMRC Scale).

Spirometry values showed that approximately 43% had severe to very severe obstruction as per GOLD Guidelines (Table: 3). HRQOL Score showed a significant decrease in quality of life in these patients in all the three domains. (Table:4) Variables which had a significant correlation with poor quality of life include increased severity of dyspnoea (p value-0.002), prolonged duration of illness (p value-0.008) and increased severity of COPD (p value-0.005) (Table-5)

Table: 1 Demographic Data

S.No	Variables	(n=100) (%)
1.	Age:	
	< 55 yrs	57%
	> 55 yrs	43%
2.	Education:	
	Illetrate	32%
	Primary School	44%
	High School	24%
3.	Socio Economic Status:	
	Low	56%
	Middle	42%
	High	2%

Table: 2 Clinical Data

S.No	Variables	(n=100) (%)
1.	Duration of Symptoms:	
	≤10 yrs	57%
	>10yrs	43%
2.	Degree of Dyspnoea (MMRC-Grade)	
	0	Nil
	1	23%
	2	46%
	3	31%
	4	Nil

Table: 3 Spirometry Grading (GOLD Guidelines)

Variables	(n=100) (%)
Spirometry (GOLD – Staging)	
Mild	24%
Moderate	42%
Severe	33%
Very Severe	10%

Table: 4 SGRQ-C (Quality of life) Scores in COPD Patients

	Symptom Score	Activity Score	Impact Score	Total Score
Mean	58.56	51.47	43.33	47.69
Standard Deviation	37.84	33.81	30.18	34.06

Table: 5 Correlation of SGRQ-C Scores with Disease Related Variables

	Symptom Score		Activity Score		Impact Score		Total Score	
	X ²	P value	X ²	P value	X ²	P value	X ²	P value
Duration of symptoms	16.317	0.006	15.819	0.007	13.980	0.010	14.110	0.008
Degree of Dyspnoea	23.104	0.001	20.126	0.002	18.680	0.005	21.620	0.002
Spirometry	52.340	0.001	48.690	0.002	41.562	0.008	46.250	0.005

Discussion

Patients suffering from any chronic medical ailment generally have reduced quality of life and one such entity is COPD. In addition to medical management psychosocial comorbidities needs to be addressed at the earliest as this might lead to increased physical disability and hence reduced quality of life.⁽⁹⁾

Reduced quality of life in patients with COPD had been demonstrated in many studies conducted

worldwide.^(2,10-16) Increased degree of dyspnoea and prolonged duration of illness was associated with poor quality of life in our study. Miravittles et al⁽¹⁵⁾ and Andenaes et al⁽¹⁷⁾ had also reported similar findings stating that longer the duration of COPD worse was the quality of life.

Lung function measured by spirometry showed that patients who had severe to very severe grade of COPD had poor quality of life. Dignani et al⁽¹⁸⁾ had reported worsening quality of life in advanced

stages of COPD. Advanced age, poor socioeconomic status and low educational qualification were variables which also had an adverse effect on quality of life.

Conclusion

COPD generally shows minimal improvement in lung function despite proper medical therapy. Our focus should therefore be targeted on improving the quality of life and henceforth the disease burden. Quality of life assessment should be included as a part of multimodality approach along with spirometry and pulmonary rehabilitation measures to improve the overall COPD specific health status.

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