ORIGINAL RESEARCH PAPER

Psychiatry

A STUDY ON PSYCHIATRIC COMORBIDITY IN COPD PATIENTS

KEY WORDS: COPD, Depression, Anxiety.

Dr.insha Mehraj Kak postgraduate Trainee,madurai Medical College, Dept Of Psychiatry

Dr. S. J. X Sugadev* Associate professor, Madurai Medical College, Dept Of Psychiatry, *Corresponding Author

Dr.T.Kumanan Professor And Hod, Madurai Medical College, Dept Of Psychiatry

ABSTRACT

Chronic obstructive pulmonary disease (COPD) is a chronic illness. Untreated and un- recognized depression and anxiety symptoms have deleterious effects on physical and social functioning. The cause of depressive and anxiety symptoms are multi factorial in nature including behavioral, social and biological factors. Symptoms of Depression and anxiety are challenging to identify and treat and less than one third of COPD patients with co-morbid anxiety and depression are receiving appropriate treatment. The aim of our study is to find the prevalence of anxiety and depression in patients of COPD and in subgroups according to duration of illness, sex and severity classification.

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a major cause of chronic morbidity and mortality throughout the world and it is one of the leading cause of death1.Patients with COPD frequently suffer from breathlessness, deteriorating exercise performance, restricted mobility and social isolation .COPD patients have to deal with both physical and psychological consequences of the disease2..Anxiety and depression are highly prevalent co-morbidities in COPD. Investigating anxiety and depression in COPD patients is challenging because of the subjective nature of the diagnostic process, the variability in presentation and significant overlap of symptoms between COPD, anxiety and depression (i.e. breathlessness, chest tightness, palpitations, tremor, fatigue, sleep disturbances and loss of appetite)3. In COPD depression has received much focus rather than anxiety even though both are prevalent. When COPD is associated with anxiety and depression it seems to be associated with worst disease outcome, reduced quality of life and even increased mortality. The aim of our study is to find the prevalence of psychiatric comorbidity in COPD patients.

MATERIALS AND METHODS :

40 consecutive patients attending Thoracic Medicine OP with the diagnosis of COPD fulfilling the inclusion and exclusion criteria, were recruited for the study after getting informed consent from them.40 healthy controls fulfilling the inclusion criteria were selected from general population and informed consent was obtained. Cases were subjected to detailed clinical and biochemical evaluation to rule out other medical co-morbidities.

INCLUSION CRITERIA :

Patients between 40-70 yrs of age, who were diagnosed with COPD as per clinical evaluation, x- ray changes and GOLD(cases).

Persons between age group 40 -70 yrs without any medical & psychiatric illness and substance use (controls).

EXCLUSION CRITERIA (Cases):

Those with Other respiratory diseases.
Patients diagnosed with other co morbid medical illness .

Patients who did not give consent.

Semi-Structured Performa was used to collect data regarding socio-demographic profile, duration of COPD, treatment details and compliance. M.I.N.I (Mini international neuropsychiatric interview) was administered to both cases and controls to diagnose the presence of psychiatric illness in them. Scales like Hospital anxiety and depression scale, Hamilton anxiety scale, Hamilton depression scale were administered. Prevalence of psychiatric morbidity in both cases and controls were compared.
Statistics was done using SPSS software.Chi Square,student t test and Pearson correlation,One way ANOVA were used to analyze the data.

RESULTS:

TABLE 1: SOCIO-DEMOGRAPHIC PROFILE OF CASES AND CONTROLS

	VARIABLES	CASES (N=40)		CONTROLS (N=40)		STATISTICAL RESULTS
		N	%	N	%	
1.	AGE 40-50 51-60 61-70	15 17 8	37.5 42.5 20	26 11 3	62.5 32.5 5	^{2}=6.510 df=2
2.	SEX MALE FEMALE	30 10	75 25	32 8	80 20	^{2}=.287 df=1
4.	LOCALITY RURAL URBAN	17 23	42.5 57.5	17 23	42.5 57.5	^{2}=0.000 df=1
5.	OCCUPATION UNEMPLYOED UNSKILLED SEMISKILLED SKILLED	6 14 12 8	15 35.0 30 20	3 15 11 11	7.5 37.5 27.5 27.5	^{2}=1.552 df=3
7.	RELIGION HINDU NON HINDU	33 7	82.5 17.5	32 8	80 20	^{2}=0.82 df=1
8.	SOCIO ECONOMIC STATUS LOWER UPPER LOWER LOWER MIDDLE	9 25 6	22.5 62.5 15.0	7 25 8	17.5 62.5 20	^{2}=.536 df=2
9.	MARITAL STATUS MARRIED UNMARRIED SPOUSE DEATH	37 1 2	92.5 2.5 5.0	35 1 4	87.5 2.5 10	^{2}=.722 df=2

P>.05 NS

From the above table it is inferred that there is no statistical significant difference between cases and controls with regard to socio-demographic profile. This indicates that the case and control samples are well matched and the confounding effect of these factors are also not significant.

TABLE 2: SHOWING GOLD SCORE (Global initiative for chronic obstructive lung disease)

FOR CASES

	VARAIBLES	CASES N=40	
		N	%
1.	MILD(FEV1/FVC <0.7 & FVC>80%)	13	32.5
2.	MODERATE(FEV1/FVC<0.7 & FVC >50 BUT <80)	22	55.0
3.	SEVERE(FEV1/FVC<0.7 & FVC >30 but <50)	5	12.5

As per GOLD criteria (global initiative for chronic obstructive lung disease), patients are staged as 1,2,3,4 based on the severity of airflow obstruction .Majority of the patients belong to stage 2 (moderate) as per GOLD criteria.

TABLE 3: SHOWING PREVELANCE OF PSYCHIATRIC ILLNESS IN CASES AND CONTROLS

S.NO	VARIABLES	CASES (N=40)		CONTROLS (N=40)	
		N	%	N	%
1.	NO PSYCHIATRIC DISORDER	4	10	38	95
2.	DEPRESSION	10	25	2	5
3.	GAD	2	5	0	0
4.	PANIC DISORDER	1	2.5	0	0
5.	MIXED ANXIETY DEPRESSION	10	25	0	0
6.	ANXIETY DISORDER NOS	13	32.5	0	0

From the above table,it is inferred that 33% of cases have anxiety disorder followed by mixed anxiety and depression in 25% and depression in 25% of cases.Generalized anxiety disorder is present in 5% and Panic disorder in 2.5% of cases.Among controls 5% had depressive illness.

TABLE 4: SHOWING COMPARISON BETWEEN CASES AND CONTROLS

S.No	VARIABLES	CASES (40)		CONTROLS(40)		' t' VALUE
		Mean	SD	Mean	SD	
1.	HADS ANXIETY	10.45	4.284	1.35	3.134	10.842
2.	HADS DEPRESSION	9.78	4.806	1.70	3.878	8.270
3.	HAM-A SCORE	17	7.310	1.85	5.011	10.812
4.	HAM-D SCORE	11.38	7.368	1.33	4.047	7.561
5.	FAGERSTROM SCORE	4.30	3.368	.23	1.050	7.306

From the above table it is inferred that there is a significant difference between HAM-A,HAM-D,HADS scores between cases and controls.

In our study 40% of cases had anxiety by HADS-A and by HADS-D 35% of patients had depression.65% of my cases had HAM-A scores of <17 and 50% had HAM-D score of 0 to 7 and 23% of cases scored moderate on HAM-A and 12.5% scored severe.

30% of cases scored moderate on HAM-D,17.5%scored mild and 2.5% scored very severe.

TABLE 5: SHOWING GOLD SCORE IN REGARD TO ANXIETY AND DEPRESSION

S.NO	FACTORS	N	MEAN	SD	F RATIO	STAT SIG	SCHEFFE
1.	HAM-A MILD MODERATE SEVERE	13 22 5	13.46 17.55 23.80	7.2 6.1 8.1	4.401	0.019	MILD/ SEVERE
	HAM-D MILD MODERATE SEVERE	13 22 5	8.23 11.82 17.60	7.5 6.5 7.02	3.37	0.045	MILD/ SEVERE

Mean score for 3 groups of GOLD with regard to anxiety and depression is calculated.It is found that patients categorized Mild as per GOLD criteria have lesser anxiety and depression when compared with cases who are categorized severe as per GOLD criteria. This observed difference is statistically significant(0.05) since F ratio(4.401)is significant. Further scheffe test(post hoc test)confirms that there is significant difference between mild and severe group .Hence, it is evident that severity of COPD correlates with severity of psychiatric illness.

CORRELATION TABLE:

AGE	1	.034	.101	-.192	.193	-.230	.285
DURATION OF ILLNESS	.034	1	.160	.064	.229	.086	.162
HAD ANXIETY SCORE	.101	.160	1	.331(*)	.878(**)	.120	.312(*)
HADS DEPRESSION SCORE	-.192	.064	.331(*)	1	.428(**)	.883(**)	-.205
HAM ANXIETY SCORE	.193	.229	.878(**)	.428(**)	1	.285	.355(*)
HAM DEPRESSION SCORE	-.230	.086	.120	.883(**)	.285	1	-.266
FAGERSTROM SCORE	.285	.162	.312(*)	-.205	.355(*)	-.266	1

HAM-A.HADS-D has a strong correlation with HAM-A score. Fagerstrom score has association with HAM-A score.

DISCUSSION:

As per our study it is found that there is higher prevalence of anxiety disorder in COPD patients in comparison to controls. Prevalence of anxiety disorder in COPD patients is about 65% and prevalence of depressive disorder is about 25%.

Severity of COPD is also correlated with higher scores of anxiety and depression.

Our study findings are supported by following studies:
Manen Et Al(2002) found the prevalence of depression with severe airway obstruction was 25%.In case of mild to moderate COPD no increased risk for depression was seen.

Fabino Di Marco (2011)Et Al found the prevalence of anxiety and depression of 28.2% and 18% in COPD patients.

Study by Gehan Et Al(2014) showed that most common psychiatric disorder was depression .It was found in 42% of COPD patients followed by anxiety in 22% of patients.

J.Regvat Et Al(2011)investigated the prevalence of anxiety and depression in COPD and found 50% association.

Janssen Et Al(2010) findings favored my study and found severe COPD has a significantly higher depression and anxiety scores than mild and moderate groups.

K.Kuhl Et Al(2008) in his study stated decreased FEV1 correlated with the development of depression and anxiety among COPD patients.

Study by Lou Et Al(2012) stated that increased frequency of anxiety symptoms correlate with increased COPD severity according to GOLD.

However few studies are contradictory to our study findings- Study by L Van Ede Et Al stated that the prevalence of depression was low in patients with COPD when compared with controls.

L.Obradovid Et Al found a negative correlation between

depression severity and FEV1 and no correlation of FEV1 with anxiety severity.

There is also Neurobiological evidence for the increased prevalence of depression and anxiety among COPD patients. Evidence suggest that chronic inflammation plays a part in association of depressive symptoms and pulmonary function. Increased inflammatory markers-IL-6 and CRP is accounted for association in depression and pulmonary obstruction.

In addition biological ,behavioral and social factors also play a role. Increased physical disability and social isolation in COPD patients makes them more prone for depressive illness.

COPD patients with co-morbid anxiety disorders are twice likely to exhibit self reported functional limitations, poorer exercise tolerance and higher frequency of acute exacerbation's compared with those without anxiety symptoms. Anxiety disorders are disabling and unless adequately treated, may become chronic, resulting in lower self esteem which may predispose to suicidal ideation and suicidal attempts thereby increasing the risk of hospitalization.

LIMITATION OF OUR STUDY:

1. Small sample size and the results cannot be generalized on large sample population.
2. As our study is a cross sectional study prospective studies helps in understanding illness better.
3. Premorbid personality couldn't be assessed.
4. The effect of medication which some of the COPD patients are on couldn't be evaluated.

Conclusion:

Addressing the co-morbid psychiatric illness in COPD patient, improves not only the functional outcome but also improves their quality of life.

REFERENCES

1. World Health Organization (WHO).(2000).The World Health Report 2000. Health Systems Improving Performance, WHO, Geneva
2. A. Yohannes, T. Willgoss, R. Baldwin, M. Connolly.(2010). Depression and anxiety in chronic heart failure and chronic obstructive pulmonary disease: prevalence, relevance, clinical implications and management principles Int. J. Geriatr. Psychiatry.
3. Curtis JR, Deyo RA, Hudson LD. (1994). Pulmonary rehabilitation in chronic respiratory insufficiency. Health-related quality of life among patients with chronic obstructive pulmonary disease. Thorax. 49.162–70.
4. G van Manen, P J E Bindels, F W Dekker, C J IJzermans, J S van der Zee, E Schadé(2002) Risk of depression in patients with chronic obstructive pulmonary disease and its determinants;57.412–416.
5. Jones PW, Quirk FH, Baveystock CM. The St George's respiratory questionnaire (1991). Respir Med.85.25–31.
6. L van Ede, C J Yzermans, H J Brouwer (1999). Prevalence of depression in patients with chronic obstructive pulmonary disease: a systematic review
7. Kessler RC, McGonagle KL, Zhao S, et al.(1994) Lifetime and12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the national comorbidity survey. Arch Gen Psychiatry.51.8–19.
8. Beckham EE, Leber WR, (1995).Handbook of depression. 2nd ed. New York, London: The Guilford Press.147–51.