ANXIETY AND DEPRESSION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE: AN OPEN AGENDA FOR RESEARCH

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ANXIETY AND DEPRESSION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE: AN OPEN AGENDA FOR RESEARCH (Abstract): Depression and anxiety are psychiatric conditions often associated with poor survival rate and impaired social functioning in chronic illnesses, like chronic obstructive pulmonary disease (COPD). COPD is a major cause of chronic morbidity and mortality, being nowadays the fourth leading cause of mortality worldwide and the burden of this disease is increasing as the population is ageing and it is continuously exposed to risk factors. Common mechanisms for explaining the association of anxiety, depression and COPD include cigarette smoke exposure, physical inactivity, social isolation, multiple episodes of dyspnea and chronic hypoxia. BODE index and MMRC dyspnea score could be associated with anxiety and depression in COPD patients and the screening usually implies administration of simple questionnaires. Therapeutic options for anxiety include serotonin-reuptake inhibitors, which decrease the perception of dyspnea, while newer antidepressants, such as venlafaxine, duloxetine and mirtazapine are particularly useful in depression, since they do not produce respiratory depression. **Keywords:** CHRONIC OBSTRUCTIVE PULMONARY DISEASE, DEPRESSION, ANXIETY.

Depression and anxiety are psychiatric conditions that cause significant social disability being characterized by sleep disturbances, weight cycling, depressed mood, loss of interest in nearly all activities, and somatic symptoms of tension (psychomotor agitation, dyspnea, irregular heartbeats) (1, 2, 3). In chronic illnesses, depression is often associated with poor survival rate and impaired social functioning (1).

Chronic obstructive pulmonary disease (COPD) is a major cause of chronic morbidity and mortality, being nowadays the...
fourth leading cause of mortality worldwide. COPD burden is increasing as the population is ageing and it is continuously exposed to risk factors such as smoking, occupational or environmental exposures to various particles (4).

Patients with this progressive respiratory disease often experience physical and role limitations, expressed as anger, frustration, physical and emotional dependency, and consequently guilt and embarrassment (5).

Anxiety and depression are considered major co morbidities in COPD, both associated with poorer prognosis, and a large number of studies provided relevant information (6).

**THE IMPACT OF ANXIETY AND DEPRESSION IN COPD PATIENTS**

The prevalence of generalized anxiety disorder in COPD patients is considered to be raging between 10% - 33%, with a prevalence of panic attacks up to 67% (7, 8). A small study comparing 20 subjects with COPD with a control group of 20 patients hospitalized for degenerative orthopedic conditions revealed that anxiety disorders among respiratory patients had a prevalence of 55%, compared with 30% in the orthopedic group and among anxiety disorder panic disorder was the most prevalent expression of psychiatric disease (9).

On the other hand, the prevalence of major depressive disorder in the same patients ranges between 37% and 71% (10). Two other prevalence studies identified clinically significant depressive symptoms in 42-57% of COPD patients (11, 12). A cross-sectional study guided in USA, assessed for depression 1736 patients with COPD and the results showed that 40% of the patients had three or more depressive symptoms. These symptoms were more common in patients with COPD than in patients with coronary heart disease, stroke, diabetes, hypertension and cancer (13).

A case-control study published in 2002, evaluated 676 subjects with COPD and showed that the prevalence of depression in patients with severe COPD was 25% compared to 19.6% in patients with mild to moderate COPD, and 17.5% in controls. The risk of depression was 2.5 times higher for patients with severe COPD than for controls, these results highlighting the importance of reducing depressive symptoms from the early stages of COPD (14). Worsening COPD status can be associated with higher prevalence of anxious symptoms from the early stages of COPD (14). As well, it was revealed that depression after hospitalization for COPD is frequently associated with a significantly increase in mortality (16, 17).

Despite the magnitude of the problem, depression in COPD patients could be very difficult to recognize, due to the lack of specific symptoms, the depressive symptoms being often attributed to the underlying pulmonary disease (14, 18).

Common mechanisms for explaining the association of anxiety and COPD include cigarette smoke exposure, physical inactivity, social isolation, multiple episodes of dyspnea and chronic hypoxia, all contributing to the appearance of depressive symptoms in patients with chronic lung disease (5).

A multicentre prospective study followed 416 patients hospitalized for the acute exacerbation of COPD and discovered that anxiety was more common in women than in men (47% vs. 34%) and current smokers had a higher prevalence of both depression and anxiety than non-smokers patients (19). An article published
in 2004, showed possible explanatory models for a common pathophysiology between COPD and anxiety, including the hyperventilation model and cognitive-behavioral model (20) and in 2005, a Slovenian study revealed a direct connection between the perception of dyspnea and anxiety or depression (21).

Anxiety and depression are also important factors in disease-specific health-related quality of life and hospitalization rates, exacerbations of the pulmonary disease being the main cause for hospitalization in patients with COPD (3, 4). The presence of anxiety and/or major depressive disorder is an important risk factor for the exacerbation of symptoms and rehospitalization within a 12-month period in patients with chronic lung disease and poor health-related quality of life (3, 22). Also, many studies identify that depression and anxiety in COPD patients lead to a lower quality of life, poorer health status and decreased adherence to treatment. Several studies have shown improvement in psychiatric symptoms after following the pulmonary rehabilitation program (23).

Epidemiological studies often show conflicting results regarding the prevalence of psychiatric disorders in COPD patients, these differences being due to the variables assessment instruments.

**CLINICAL ASSESSMENT OF PSYCHIATRIC DISORDERS IN COPD**

An appropriate clinical approach of COPD patients has to identify the early symptoms of psychiatric disorders, as well the risk factors and the parameters associated with these symptoms.

There are several studies that revealed some risk factors for anxiety and/or depression in chronic pulmonary patients. For instance, a recent cross-sectional study including 122 patients with stable COPD reached the conclusion that increasing stage in BODE index is a predictor for anxious symptoms (24), BODE index being a multidimensional grading system, comprising the body-mass index, distance walked in 6 minutes (6-minute walk test), the degree of airflow obstruction ($\text{FEV}_1$), and score on MMRC dyspnea scale, predicting the mortality among patients with COPD (25). Another study including 84 patients diagnosed with COPD showed that the following parameters were generally associated with depression: GOLD stage, BODE index, the percent of the predicted value of $\text{FEV}_1$ and modified Medical Research Council (MMRC) dyspnea score (26).

A group of Turkish researchers conducted a recent trial and concluded that the major risk factor for anxiety and depression is dyspnea; also, the cytologic examination of bronchoalveolar lavage appeared to be an useful tool for identifying patients with psychiatric disorders because it shows the extent of the lung damage, which is the major mechanism underlying dyspnea (27).

A prospective cohort study including 1205 patients, with up to 30 years of follow-up, reached the important conclusion that a poor lung function is a risk factor for depression, particularly in patients with prevalent chronic disease (28).

These arguments derived from clinical studies and the well-known increased prevalence of anxiety and major depressive disorder in patients with chronic obstructive lung disease support the development of a screening strategy in patients with chronic respiratory disorders.

Screening for depression usually use
“PHQ-9 Depression Questionnaire”, a self-report 9-item questionnaire, resulting in a score, quantifying the severity of depression. For anxiety, “Hamilton Anxiety Rating Scale” requires a short time to apply it and to analyze the answers (29). Both screening questionnaires should be applied in patients with chronic lung disease admitted in hospitals, pulmonary rehabilitation centers or in outpatients, at their regular pulmonologist visit.

This psychiatric assessment is highly recommended in COPD patients as it enables the clinician to identify patients who need undergo a more appropriate diagnostic interview and also the high-risk patients.

**THERAPEUTIC APPROACH – SPECIFIC ISSUES**

When anxiety and/or depression are diagnosed in the setting of a chronic obstructive pulmonary disease, there are several difficult issues regarding the therapeutic approach.

For anxiety, pharmacological treatment is one of the most convenient choices. The most common course of treatment is the use of serotonin-reuptake inhibitors (SSRI), which decreases the perception of dyspnea. Citalopram and escitalopram are preferred because they have an advantage in patients taking multiple drugs, having the lowest potential to interfere with cytochrome P450 system (30).

Benzodiazepines, such as clonazepam or alprazolam, have anxiolytic effects and they are used to treat anxiety, but they could interfere with central respiratory drive, leading to respiratory depression. Furthermore, these drugs have increased rates of withdrawal symptoms and a half or a quarter of the usual starting dose is recommended in respiratory patients (30).

Patients who do not respond to this treatment are ideal candidates for psychotherapy, delivered under multiple forms: cognitive-behavioral therapy, interpersonal therapy or problem-solving therapy (31). In patients with chronic lung disease, the addition of psychotherapy and pulmonary rehabilitation program has been demonstrated to decrease anxiety (32).

Moreover, choosing an antidepressant for patients with COPD is a very difficult matter and depends on the pattern of depression. It is very important that in patients with chronic lung disease the selected medication not to have as therapeutic effect sedation, because respiratory depression is an important potential side-effect of psychotropic medication. In this regard, it is recommended to use SSRIs or newer antidepressants, such as venlafaxine, duloxetine and mirtazapine (33).

**CONCLUSION**

Anxiety and depression are co-morbidities often present in the clinical presentation of patients with chronic obstructive lung disease, requiring diagnosis and appropriate treatment. As there are no laboratory findings to confirm these diagnoses, increased awareness of healthcare providers and screening tools are important steps in managing psychiatric disorders in pulmonary patients.

The correlation between chronic lung disease and psychiatric disorders is very complex, including somatic, psychological and social factors. Nowadays it is possible to successfully treat psychiatric disorders associated with chronic lung disease, thus improving the quality of patient’s life, lowering the costs associated with hospitalization and improving patient’s role in the society.
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Further studies are needed to clarify the pathogenic mechanisms underlying the association COPD – psychiatric disorders and to evaluate the effects of new treatment options so that the clinical guidelines can be renewed periodically.

REFERENCES


DOES WEIGHT MISPERCEPTION HAVE AN IMPACT ON EATING BEHAVIOR?

A recent study among Spanish adolescents had shown that females tend to perceive themselves as being overweight when in fact their body mass index is between normal limits. On the other hand, the majority of people who consider that they have normal weight, but in reality they are overweight, are males. There has been spotted another difference between genders in reported physical activity. It seems that males are more physically active than females. Moreover, females often go on a diet only for aesthetic reasons. The conclusions of the study are that the misperception of weight results in eating disorders. For example, if a person considers that is overweight at a normal BMI value, will follow an unfit diet, low in vitamin, minerals and macronutrients. A desired outcome is to provide better nutritional education from a young age since eating disorders are related to low self-esteem and ill general health. (Jáuregui-Lobera I, Ezquerra-Cabrera M, Carbonero-Carreño R, Ruiz-Prieto I, Weight misperception, self-reported physical fitness, diëting and some psychological variables as risk factors for eating disorders, *Nutrients* 2013; 5: 4486-4502).