ANXIETY, DEPRESSION AND COGNITIVE IMPAIRMENT IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Abstract: Depression, anxiety and cognitive impairments are common among patients with chronic obstructive pulmonary disease and these psychological aspects are associated with poor treatment adherence and worse outcomes. Identifying the psychological symptoms and developing appropriate treatment strategies are very important for this category of patients. This paper tries to synthesize the current understanding of patients with chronic obstructive pulmonary disease and comorbid psychological symptoms.

Keywords: depression, comorbidities, pulmonary disease.

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a major cause of chronic morbidity and mortality worldwide (1) and it is a leading and growing cause of the global burden of disease (2). Defined by the presence of chronic airflow limitation, exertional dyspnea and recurrent respiratory infections, COPD is now considered a complex, heterogeneous and multicomponent condition. The presence of other comorbidities, such as cardiovascular disease, depression, anxiety, osteoporosis, diabetes, substantially contributes to the severity of the disease.

DEPRESSION AND ANXIETY IN COPD PATIENTS

Mood disorders like major depression and dysthymia, and anxiety disorders (generalized anxiety disorder, phobias and panic disorders) are common in patients with COPD (3) and earlier diagnosis and treatment would be very beneficial (4). Prevalence vary widely, due in part to the use of varied measurement tools and to the different degrees of illness severity across studies. The global prevalence of depression and anxiety is much higher in patients with COPD compared with general population. It is reported that depressive disorders or depressive symptoms can vary between 40% and 74% of patients with COPD (5, 6, 7, 8). Nonetheless, precise data on depression rates in patients with COPD are lacking and further research are needed. Moreover, a recent systematic review and meta-analysis of 25 studies with long-term follow-up revealed that the relationship between COPD and depression is likely bi-directional, as depression may be both a cause and a consequence of COPD (9).

A cross-sectional study reported that COPD patients are 85% more likely to develop anxiety disorders compared to healthy, matched controls (10). In addition, the prevalence of clinical anxiety in COPD outpatients ranges between 13% and 46% (11). Patients with anxiety or depressive disorders and COPD are twice as likely to experience functional limitations, poorer exercise tolerance and higher frequency of acute exacerbations compared to those without anxious or depressive symptoms. Anxiety disorders seems to be more disabling and, unless adequately treated, have the potential to become chronic, to lower patient’s self-esteem, to predispose to suicidal ideation, and to increase the risk of hospitalization (9, 11).

Comorbid depression which is often associated with feeling of hopelessness, social isolation, decreased energy and fatigue can lead to poor self-care behaviors like unwillingness to engage in pulmonary rehabilitation, decreased physical activity, failure to quit smoking, poor eating habits and poor medication adherence (12, 13, 9). The goal of pulmonary rehabilitation is to change patient health behaviors especially by increasing physical activity. Comorbid psychological symptoms like depression and anxiety have an important role in this behavior change.

A large study (ECLIPSE study) examined the prevalence of depression in COPD patients compared with smokers and nonsmokers without COPD. The prevalence of depression was 26%, 12%, and 7% of COPD, smokers, and nonsmokers, respectively. In subjects with COPD, higher depression prevalence was seen in females, current smokers, and those with severe disease. Its findings indicate that clinical and biologic markers were less important determinants of depression in COPD than disease symptoms and quality of life (14).

It is known that depressive symptoms are associated with dysfunction of HPA axis and inflammatory factors. It is also known that COPD is characterized by a systemic inflammatory response involving increased pro-inflammatory cytokines such as IL-1, IL-6 and TNF-alfa (15). Recent studies suggest that low-grade chronic inflammation mediates in part the association of depressive symptoms with pulmonary function in COPD (16). Systemic inflammation has been suggested as an etiologic factor in the development of multiple comorbidities in COPD patients, but its role remains to be elucidated in the future. A causal relationship between low-grade systemic inflammation...
and comorbidities in COPD has not yet been proved. The current findings also show that the possible interactions between biomarkers of systemic inflammation and comorbidities in patients with COPD are very complex (17).

COGNITIVE IMPAIRMENT IN COPD PATIENTS

In recent years, cognitive impairment was often referred to as a comorbidity in patients with COPD. The risk of dementia is naturally higher in older COPD patients, and dementia speeds up the progression of COPD. The increased risk of neuronal injury in COPD may be due to hypoxemia, systemic inflammation or as a result of other comorbidities such as vascular disease or smoking. However, the studies suggest an association rather than a causal link (18). When present, impaired cognitive function is associated with reduced quality in life, poor compliance with both medication and oxygen therapy (19), and poor compliance increases the risk of acute exacerbation, and may be predictive of increased morbidity and mortality in COPD patients (20). The most widely-used tests which cover multiple cognitive domains are the Mini Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA), the Clock Drawing Test (CDT). These tests have good diagnostic accuracy and can provide healthcare professionals with a prompt overview of patients' cognitive status when cognitive impairment is suspected.

TREATMENT AND INTERVENTIONS OPTIONS

Untreated comorbid anxiety and depression in patients with COPD may have major consequences on the course of illness. There are several barriers for detection of and treatment of anxiety and depression in patients with COPD (21). Patient barriers include lack of knowledge about the possibility of anxiety or depression as well as their treatment options, stigma regarding mental illness, self-blame for their disease. Physician barriers include lack of standardized diagnostic approach for anxiety and depression, short consultation time, lack of time for educating patients about depression and counseling. System issues include poor communication between primary care and mental health care and lack of adequate resources for mental health treatment.

Patients with COPD should be screened for depression and anxiety on presentation and whenever their clinical, economic, or psychosocial status changes. A variety of validated, easily administered, or self-administered depression and anxiety screening tools are available. Common screening tools for anxiety and depression in patients with COPD are The Hospital Anxiety Depression Scale and the Beck Depression and Anxiety Inventory Scale. Clinicians should be aware of the somatic overlap between anxiety and/or depression and COPD. Patients who screen positive should undergo a clinical interview for further assessment.

Evidence for the efficacy of antidepressant therapy in COPD associated with depressive or anxiety symptoms is limited. Many patients suffer transitory mood symptoms during respiratory exacerbations and there is no evidence that these time-limited symptoms require specific treatment. The National Institute for Health and Care Excellence (NICE) has published clinical guidelines for the use of stepped approaches to psychological and/or pharmacological treatment of depression in people with long-term conditions (22). NICE guidelines advise that antidepressants should not be routinely prescribed for physically ill patients with subthreshold symptoms of depression or mild-to-moderate depression. Pharmacological therapy must be considered when major depression is diagnosed to avoid its long-term effects on overall disability. Selective Serotonin Reuptake Inhibitors SSRIs may be considered a more safe choice with little or no effect on ventilator drive. On the contrary, benzodiazepines may cause respiratory depression and should be avoided in COPD patients.

Concerning anxiety, several studies have investigated the effectiveness of specific medications (23) with contradictory results for buspirone (24) and inconclusive results for SSRIs, even though they are better tolerated and can relieve symptoms of panic (25, 26), but compliance may be poor.

Patients prefer nonpharmacological treatments and clinical guidelines (27, 22) promote both individual and group therapy psychosocial interventions in COPD patients. NICE guidelines recommend cognitive behavioral therapy (CBT) to COPD patients with mental health difficulties, because of the time-limited and action-oriented nature of the intervention. A recent study demonstrated how cognitive behavior therapy may be an effective option for rapid symptom relief for COPD patients with anxiety and depressive symptoms while suggesting that the mental health care should be integrated into the overall medical regimen for COPD (28).

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**Conflict of interest: none declared
Financial support: none declared**