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Perspective

COPD and Depression: A Bidirectional Relationship

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Depression is a common comorbidity among COPD patients and its prevalence has been reported to range 10 - 42% in patients with stable COPD and 10-86% in those with acute exacerbation [1,2]. Previous studies suggested that depression more frequently occurs in COPD compared to the general public and can have a significant impact on the progression of the disease and health-related quality of life [1,3]. However, prevalence of depression could be underestimated because depression and COPD share overlapping symptoms, such as fatigue and decreased energy [4]. 25% COPD patients are at risk of developing major depression because they suffer from subclinical stages of depression that are often unrecognized by healthcare professionals [1,5,6].

Evidence suggests that the relationship between depression and COPD is bidirectional, meaning that depression adversely impacts the prognosis in COPD patients and the presence of COPD increases the risk of developing depression [6,7]. Patients with COPD and depression show higher number of readmissions for acute exacerbation, poorer quality of life, reduced physical activity, more limited ability to exercise, increased dyspnea and higher risk of death [7-10]. All these factors can be associated with an increasing level of depressive symptoms. Also, patients with depression show worse quality of life, higher tobacco use, lower levels of physical activity and poor adherence to treatment, resulting in worse COPD outcomes [11]. Current smoking status is associated with increased risk of depressive symptoms, and depression may play a role in COPD patients not quitting smoking [12,13].

Although potentially modifiable, depression is often underdiagnosed and untreated among COPD patients [1]. There are different scores to assess depressive symptoms. The Hospital Anxiety and Depression Scale (HAD) is a self-administered 14-item scale used to determine the level of depressive (HAD-D) and anxiety symptoms (HAD-A) [14]. Each item score ranges 0-3 and the total score for each subscale ranges 0-21, higher scores denoting higher levels of depression and anxiety. The Depression Anxiety Stress Scales-21 (DASS-21) is a self-reported 21-item scale developed to measure depression, anxiety and stress disorders in healthy people, and also valid for patients with COPD [15]. The DASS-depression subscale ranges 0-42 and examines dysphoria, hopelessness, anhedonia, devaluation of life and lack of interest/involvement. Higher scores denote higher depression severity [16]. The Beck Depression Inventory (BDI) is a 13-item self-administered questionnaire assessing affective, cognitive, motivational and vegetative symptoms of depression, with items rated 0-3 and depression severity stratified in 4 levels [17]. The Patient Health Questionnaire Depression Scale 9 (PHQ-9) is a 9-item self-reported scale featuring the 9 signs and symptoms of major depression according to DSM-IV criteria [18]. Although depressive symptoms are not measured by a structured psychiatric interview and the questionnaires are not necessarily equivalent, they could help us to identify COPD patients at risk of depression. Following those, various therapy options exist to improve both COPD and depression symptoms: flexible health behavior change interventions to eliminate smoking habit and to increase the level of physical activity [11]; specific pulmonary rehabilitation [19]; providing adequate social and emotional support [5]; pharmacological COPD treatment and antidepressant therapy [20].

As clinicians, we should pay attention to COPD with reduced physical activity, severe dyspnea, and health risk behaviors in order to identify depression symptoms, and we should play an active role to ensure adequate treatment.

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