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Pertseva TO
State Institution "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine", Department of Internal Medicine 1, Ukraine, Dnepropetrovsk, 49000, 13, Batumskaya, Ukraine

Konopkina LI
State Institution "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine", Department of Internal Medicine 1, Ukraine, Dnepropetrovsk, 49000, 13, Batumskaya, Ukraine

Huba YuV
Huba, Yuliia, 52005, Frunze str. 22, ap. 21, v. Yuvileyne, Dnipropetrovsk, Ukraine

Veresa OV
MI Dnipropetrovsk City Clinical Hospital #6" Dnipropetrovsk Regional Council, Dnepropetrovsk, str. Batumskaya 13, Ukraine

Correspondence
Huba YuV
Huba Yuliia, 52005, Frunze str. 22, ap. 21, v. Yuvileyne, Dnipropetrovsk, Ukraine

Diagnostic significance of questionnaire surveys for diagnosis of mental disorders in patients with chronic obstructive pulmonary disease

Pertseva TO, Konopkina LI, Huba YuV and Veresa OV

Abstract
Chronic obstructive pulmonary disease (COPD) is an important issue of the contemporary medicine. Comorbid conditions are some of the factors that adversely impact the disease progression. Currently, researchers place more emphasis on the study of mental disorders that are quite common in COPD patients.
Aim: to perform a comparative analysis of detection of mental disorders in COPD patients by using the questionnaire data and findings of psychiatric examination.
Materials and Methods: we have examined 56 COPD patients. Patients examination included general clinical methods, questionnaires for detecting of mental disorders, psychiatrist examination.
Results: the psychiatrist confirmed the findings for nearly a half of the patients who, according to the questionnaires, had no symptoms of mental disorders; however, more than a half of the patients had various mental disorders though they were not depression and/or anxiety.
At the same time for most COPD patients who, according to the questionnaires, had symptoms of depression and/or anxiety, mental disorders were also confirmed by the psychiatrist, though they were not always depression/anxiety, and no mental disorders were detected in a quarter of patients.

Keywords: COPD, questionnaires, depression, anxiety, mental disorders

1. Introduction
Chronic obstructive pulmonary disease (COPD) is an important issue of the contemporary medicine. Though a range of treatment options is presently available, the condition remains an important cause of mortality. Additionally, COPD often results in decreased capacity and deterioration of patient quality of life. Comorbid conditions are some of the factors that adversely impact the disease progression [1, 2, 3]. Currently, researchers place more emphasis on the study of mental disorders that are quite common in COPD patients [4].
According to a number of studies, occurrence of mental disorders in COPD patients varies significantly depending on the research method and categories of subjects: 7 to 80% for depression and 10 to 100% for anxiety. COPD can also be associated with other types of mental disorders such as emotionally labile disorder, asthenoneurotic syndrome, asthenic syndrome, etc. [4, 5, 6].
Mental disorders are known to adversely impact COPD patients who experience more relapses, reduced quality of life, are less committed to treatment, etc. [5, 7, 8, 9].
This study was aimed to perform a comparative analysis of detection of mental disorders in COPD patients by using the questionnaire data and findings of psychiatric examination.

2. Materials and Methods
We have examined 56 COPD patients (46 (82.1±5.1%) men, 10 (17.9±5.1%) women; mean age was 63.9±1.0 years, level of forced expiratory volume in one second (FEV_1) was 51.9±2.2% pred., mean COPD Assessment Test (CAT) score was 15.7±1.0).
Clinical diagnosis of COPD was formulated in accordance with Order No.555 of the Ministry of Health of Ukraine dated June 27, 2013 [2].
All patients were in a stable phase of COPD for at least two previous months and received therapy according to their clinical groups pursuant to Order No.555 of the Ministry of Health of Ukraine dated June 6, 2013 [2].
All patients signed informed consent forms for participation in the study.
Patients examination included general clinical methods (review of complaints, case history, life history), assessment of clinical symptoms, including by using the CAT questionnaire [1, 2].

The study conducted in two stages.

At the first stage, patient mental assessment was performed with the Patient Health Questionnaire 9 (PHQ-9) [10, 11], Hospital Anxiety and Depression Scale (HADS), a test used to determine HADS-depression and HADS-anxiety in somatic patients [10, 12], and the Beck Depression Inventory-Short Form (BDI-SF) [13].

At the second stage, a final mental state assessment of all patients was performed by a psychiatrist who applied clinical anamnestic, psychopathological and psychodiagnostic methods [10].

For statistical analysis of the results we used biometric analysis methodology supported by STATISTICA 6.1 software. Normal distribution was analysed by the mean value and mean error while non-normal distribution was analysed by the median and quartiles (Me [25-75]) [14].

3. Results and Discussion

The survey of COPD patients we conducted at the first stage of the study indicated that the findings have some — sometimes quite substantial — differences when assessed by various scales. For instance, by the PHQ-9 depression was detected in less than a fifth of the subjects and in more than a third of patients when assessed by the HADS and BDI-SF tests (Table 1). Moreover, the severity of depression as assessed by the PHQ-9 and HADS was mainly mild (mean score 8 [8-12] and 10 [8-11], respectively), however, the BDI-SF test showed that it was mostly moderate (mean score 9 [6.5–10.5]).

Table 1: Incidence of depression in COPD patients as assessed by different questionnaires

Questionnaire	Number of patients	
	abs.	%
PHQ-9	11	19.6
HADS-depression	17	30.4
BDI-SF	20	35.7

Thus, it was found that the same COPD patients had somewhat different presence and severity of depression results obtained from different questionnaires.

According to the HADS, anxiety was found in 9 (16.1%) and was mild in severity (mean score 9) [8-10].

It should be noted that, according to the above questionnaires, 26 of 56 patients we have examined did not have any depression or anxiety, and 30 persons had signs of depression and/or anxiety as assessed by at least one of the tests.

At the second stage of the study, the psychiatrist consulted all 56 patients to verify their diagnoses. It was found that 12 (46.2%) of 26 patients who, according to the questionnaires, had no mental disorders, did not actually have any of them while six (23.0%) patients had asthenic syndrome, three (11.5%) patients had mild somatoform autonomic dysfunction and emotionally labile disorder, one (3.8%) had asthenoneurotic syndrome and cognitive impairment caused by cerebral arteriosclerosis. Therefore, the psychiatrist confirmed the findings for nearly a half of the patients who, according to the questionnaires, had no symptoms of mental disorders; however, more than a half of the patients had various mental disorders though they were not depression and/or anxiety.

Of 30 COPD patients who had signs of depression and/or anxiety determined by at least one of the questionnaires, only four (13.3%) patients had those disorders as diagnosed by the psychiatrist (mixed anxiety-depressive disorder, mild depressive disorder, histrionic personality disorder and anxiety disorder); 11 (36.6%) of them had cognitive impairment caused by cerebral atherosclerosis, 6 (20.0%) patients had asthenic syndrome, asthenoneurotic syndrome and emotionally labile disorders. In a quarter (7 (23.3%)) of patients no psychiatric disorders were found. Therefore, for most COPD patients who, according to the questionnaires, had symptoms of depression and/or anxiety, mental disorders were also confirmed by the psychiatrist, though they were not always depression/anxiety, and no mental disorders were detected in a quarter of patients.

4. Conclusions

1. mental disorders in COPD patients can be very different by nature which cannot be determined only with questionnaires;
2. absence of signs of mental disorders as determined in surveying of COPD patients most likely indicates that those persons have no major mental disorders;
3. COPD patients with certain complaints or risk factors should be examined by a psychiatrist for diagnosis specification;
4. In the event that any signs of mental disorders are detected with any of the questionnaires, a psychiatrist should examine such patients to verify their diagnoses and prescribe treatment as appropriate.

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