

# Anxiety-Depressive Disorders in Patients with Acute Heart Failure

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**Abstract** **Purpose of the study.** To determine the presence and severity of anxiety-depressive experiences and evaluate their impact on the quality of life in patients with acute heart failure (AHF) against the background of a history of large-focal (with a Q wave) myocardial infarction. **Material and methods:** General clinical studies, psychological testing Results. 118 patients with acute heart failure were examined. Anxious and depressive experiences were detected in 46.6% of cases. As acute heart failure progresses, anxiety and depressive symptoms increase. **Conclusion.** Thus, in patients with AHF, psycho-emotional changes in the form of anxiety-depressive experiences were revealed, which may adversely affect the course of the disease. As acute heart failure progresses, anxiety and depressive symptoms increase.

**Keywords** Acute heart failure, Myocardial infarction, Anxiety-depressive disorders, Depression, Anxiety

## 1. Annotation

The results of the assessment of psychoemotional manifestations in patients with AHF are presented. The characteristics of the levels of anxiety-depressive experiences are given.

## 2. Introduction

In recent years, much attention has been paid to the problem of comorbidity between psychopathological disorders and coronary heart disease (CHD). Numerous studies speak of the high incidence of psychopathological disorders and their negative impact on the course and prognosis of CHD. According to the forecast of experts from the World Health Organization, the number of mental illnesses will increase, and by 2025, their share will reach almost 50%, which exceeds the predicted increase in cardiovascular diseases [1]. In general medical practice, the combination of anxiety and depressive symptoms reaches, according to some data, 60–70%. It is important to note the close comorbidity of depressive and anxiety disorders. Often, depression is accompanied by more or less pronounced anxiety symptoms; in some patients, anxiety acts as a prodromal sign of depression. Anxiety and depressive disorders act as independent risk factors for the development of CHD and contribute to an increase in the incidence of cardiovascular complications and mortality among

cardiological patients [2,3,4,5,6]. Depression comorbid with somatic diseases significantly aggravates the clinical course of somatic diseases, complicates rehabilitation and secondary prevention, worsens the quality of life of patients, and negatively affects the prognosis [7,8,9,14]. The results of a seven-year prospective study showed that depression, anxiety, and a lack of social support were independent predictors of mortality in patients with acute myocardial infarction, in addition to the severity of CHD [10]. Anxiety and depressive symptoms also negatively affect the adherence of patients to the drug therapy recommended by the cardiologist. It is important that anxiety-depressive disorders be considered an independent risk factor for CHD. Previously published scientific reviews have shown that symptoms of depression are not only a factor in a future coronary event in healthy individuals but also an unfavorable prognosis for those who already suffer from CHD [11,12,13]. Thus, the pathogenetic relationship between CHD and anxiety-depressive disorders, which is realized both at the organic and functional levels, requires the close attention of doctors to patients with CHD and comorbid anxiety-depressive disorders. Of interest is the presence and severity of anxiety-depressive disorders in patients with AHF.

**Purpose of the study:** to determine the presence and severity of anxiety-depressive experiences and to assess their impact on the quality of life in patients with AHF against the background of a history of large-focal (with Q-wave) myocardial infarction.

## 3. Material and Methods

The study included 118 patients with prior large-focal

(Q-wave) myocardial infarction and clinical signs of AHF. Of these, 12 women (10.2%) and 106 men (89.8%) The average age of patients was 60.665.32 years. The diagnosis of AHF and the assessment of its severity were carried out according to the recommendations of the European Society of Cardiology for the diagnosis and treatment of acute heart failure. All studies were performed with the informed consent of the patients. Exclusion criteria: acute cerebrovascular accident in the next 6 months; hemodynamically significant heart defects; severe liver dysfunction; complex disorders; kidney pathology. All patients underwent a general clinical study. Ultrasound examination of the heart Signs of AHF (with an ejection fraction of the left ventricle according to echocardiography on average of 52.15.11%) were determined in 62 (52.5%) patients; signs of AHF (with an ejection fraction of the left ventricle of 47.26.61%) were determined in 56 (47.5%) patients.

Drug treatment is represented by beta-blockers, angiotensin-converting enzyme inhibitors or angiotensin receptor antagonists, antiplatelet agents, statins, and diuretics. The presence and severity of anxiety and depression disorders were assessed using the HADS (Hospital Anxiety and Depression Scale). The result of 0–7 points was assessed as the absence of significantly expressed symptoms of anxiety and depression; 8–10 points were subclinically expressed anxiety and depression; and 11 points and above were clinically expressed anxiety and depression. All studies were carried out on the basis of the Republican Scientific Center for Emergency Medical Care (RSC EMC). Statistical analysis was carried out using generally accepted methods of mathematical statistics using the statistical software package STATSOFT STATISTICA 6.0 for Windows (USA) and MS Excel XP.

The results are presented as the arithmetic mean (M) and standard deviation (SD). To compare the quantitative indicators of two independent groups with a normal distribution of the trait, the Student's t-test (t) was used. Differences were considered significant at  $p < 0.05$ .

To identify the strength and direction of relationships between the studied variables, correlation analysis was used with the calculation of the Pearson parametric correlation coefficient.

## 4. Results of the Study

As a result of psychological testing, it was found that, according to the HADS scale, the average values of anxiety (5.892.12 points) and depression (4.762.59 points) did not differ from the normal level. However, when considering individual questionnaires, it turned out that anxious and depressive experiences were detected in 56 (46.6%) of the examined patients. Signs of isolated depression were determined in 21.2% of cases, and anxiety in 25.4% of cases. Moreover, signs of clinically expressed anxiety and depression were determined in 4.3% and 6.8% of patients, respectively, and signs of subclinical anxiety and depression

in 16.9% and 18.6% of patients, respectively. It should be noted that all patients under observation had insufficient physical activity. The distance covered by patients per day averaged 4.081.81 km at a speed of 76.418.71 steps per minute. All these features affect the quality of life, which is 1.5 times worse in patients with concomitant anxiety and depressive experiences than in patients with a normal psycho-emotional status. It was also found that 10.2% of patients suffer from both depression and anxiety; the quality of life in this group is 1.6 times worse than in patients without anxiety or depression. At the same time, positive relationships were found between the quality of life and the level of depression ( $r = 0.45$ ,  $p < 0.001$ ), the quality of life and the level of anxiety ( $r = 0.59$ ,  $p < 0.001$ ), as well as between the levels of depression and anxiety ( $r = 0.46$ ,  $p < 0.001$ ).

Patients showed a significant difference in the level of depression depending on the class of AHF ( $p < 0.01$ ).

Thus, in the group of patients with AHF, class II according to Killip, anxiety-depressive experiences were detected in 41.9% of patients, among whom 9.6% suffer from both anxiety and depression. Signs of isolated anxiety and depression were determined in 27.4% and 14.5% of cases, respectively. The quality of life in this group is worse than in isolated anxiety or depression ( $p < 0.01$ ). In this group, the correlations and dependences between the studied parameters are weakly expressed. In the group of patients with AHF, class III according to Killip, anxiety-depressive experiences were detected in 51.8% of cases, and signs of isolated anxiety and depression were determined in 23.2% and 28.6% of cases, respectively. The severity of anxiety and depression in patients with AHF class III, according to Killip, exceeds the normal values according to the HADS scale by 1.4 and 1.6 times, respectively. The quality of life in patients with concomitant anxiety and depressive experiences is 1.6 times worse than in patients with a normal psycho-emotional status. In 10.7% of patients, signs of both anxiety and depression were revealed; in this group, it was significantly worse than in isolated anxiety or depression ( $p < 0.01$ ).

## 5. Discussion

According to the results obtained, the frequency of detection of anxiety-depressive experiences in patients with AHF in our study reaches 46.6%.

It is alarming that as acute heart failure progresses, anxiety and depressive symptoms increase. The worsening of acute heart failure is combined with an increase in the number of patients with anxiety and depressive disorders; moreover, in AHF of class II, according to Killip, anxious experiences prevail, and in class III, according to Killip, depressive experiences prevail. It is obvious that anxiety is a prodrome of depression or its debut in AHF, and the presence of anxious depressive experiences can lead to the progression of the disease, which can lead to fatal consequences. Thus, it is clear that anxiety-depressive disorders worsen the condition of patients with AHF and can probably aggravate

the course of the disease. The data obtained in the study dictate the need for timely recognition and treatment of anxiety and depressive disorders in this category of patients.

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