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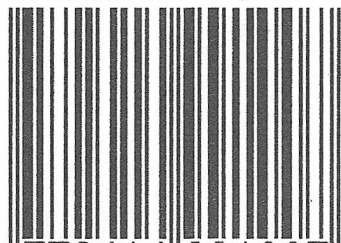
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### Conclusion.

The outcome of this study shows, that early diagnostics and correction of speech pathology plays an important role in the development of a child. Unfortunately, quite often such speech disorders are diagnosed at an older age (pre-preschool and primary school periods), when the child shows the secondary disturbances of writing, reading and, as a result, poor school performance and low cognitive activity. Unified work of teachers, speech therapists and neurologists is needed for an early diagnostics and complex correction of speech disorders.

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### THE IMPACT OF DEPRESSIVE DISORDERS ON THE OCCURRENCE OF ARRHYTHMIAS AND IMPAIRED CARDIAC CONDUCTION

#### Summary

*Depressive disorders affect the adaptive capacity and quality of life of patients with somatic profile a great deal. In this paper, through the use of a psychological test and the assessment scale of depressive disorders in patients suffering from coronary heart disease with paroxysmal cardiac arrhythmias, characteristic anxiety depressive disorders were detected and their relationship with the incidence of cardiac arrhythmias was established.*

**Keywords:** depressive disorders, arrhythmia and cardiac conduction, quality of life.

#### Introduction.

In recent years, the problem of depressions has become one of the most pressing not only in psychiatry but also in the global health space. According to WHO, they don't often consider a significant number of undiagnosed masked, somatoform and other varieties of depressive disorders. Up to 5% of the world's population is suffering from depressive disorders of various origin [1, 25].

In Ukraine in recent decades there has been an increase in cases of non-mental psycho-emotional disorders, including anxiety and depression. According to statistics, today about 400 million people are suffering from some form of mental disorders, including about 80% with marginal neuro-psychiatric disorders; 45-60% of all suicides are committed by patients in a state of depression [2, 6].

A lot of studies have obtained evidence that depression is an independent factor for coronary heart disease complications. Special attention should be paid to elucidation of the role of depressive factors in the



pathogenesis of arrhythmias [2, 8]. Recent studies have unequivocally confirmed the negative impact of depression on the course and prognosis of coronary artery disease, which gave impetus to an active study of pathophysiological processes and possibilities of pharmacological therapy to improve life quality and longevity [2, 9].

According to WHO, by 2020, mental illnesses will be a major cause of the world population's disability, while depressions will stand second among major diseases causing disability [1, 20; 4, 489].

Depression and coronary heart disease are reciprocal: each of these diseases worsens the course of the other one. CHD can be a cause of depression or change its course. In turn, a depression can both induce coronary artery disease, and also affect the clinical course of cardiologic diseases, cause its severe course (lasting angina, cardiac arrhythmias). Depression aggravates and worsens social consequences of coronary heart disease, increases the time of patients' stay in hospital, reduces their working capacity and increases the likelihood of disability [6, 681].

However, it remains unclear whether depressive disorder are secondary, or quite the contrary, depressive disorders cause attacks of cardiac arrhythmias [2, 5; 4, 489; 7, 12]. It was also established that depressive disorders in patients with coronary artery disease involve impaired neurohumoral regulation of coronary blood flow and myocardial metabolism, which may further contribute to various complications, including cardiac arrhythmias [7, 11; 8, 33].

In their papers, most cardiologists, psychiatrists and psychologists recognize a big role of emotional strain and stresses in the development of cardio - vascular disease [8, 34].

Recent studies have unequivocally confirmed the negative impact of depression on the course and prognosis of coronary artery disease, which gave impetus to an active study of pathophysiological processes and possibilities of pharmacological therapy to improve life quality and longevity.

It is believed that adding antidepressants may contribute to the reduction of the risk of cardiovascular accidents, facilitates the course of cardiovascular diseases, improve their prognosis and quality of life [7, 11].

Studies of the relationship between the depressive disorders and cardiac arrhythmias in recent years have been given much attention. However, a number of problems on these relationships remain unresolved. [3, 119].

Objective of the paper is to examine the relationship between depressive disorders and degrees of their manifestations severity and the incidence of paroxysms of arrhythmias and impaired cardiac conduction in patients with coronary heart disease.

#### Materials and methods.

The study involved 113 patients with coronary artery disease with arrhythmias and disorders in cardiac conduction with duration of the disease more than three years, who were hospitalized or under ambulatory monitoring in the Chernivtsi regional cardiology clinic in 2014 – 2015. The average age of surveyed patients was 54.5 years. In order to establish the rate of depressive disorders, we used the William Zung self-rating depression scale. The test enables to assess the level of depression in patients and to determine the degree of depressive disorders. The test "Zung scale" is highly sensitive and avoids additional economic costs associated with medical examination of patients. It takes into account 20 factors that define four levels of depression. There are ten positively and ten negatively formed questions in the test. Each question is rated on a scale from 1 to 4 (on the basis of answers "never," "sometimes," "often," "always"). The results are divided into four ranges:

- Normal state 25-49
- Mild depression 50-59
- Moderate depression 60-69
- Severe depression 70 and more

Depression rate (DR) is calculated by the formula:

$$DR = \sum \text{dir.} + \sum \text{rev.}$$

Where  $\sum \text{dir.}$  – a total of crossed out figures with direct statements № 1,3,4,7,8,9,10,13,15,19.

$\sum \text{rev.}$  – a total of figures reversed to those crossed out as to the statements № 2, 5, 6, 11, 12,14,16,17, 18,20.

As a result of data processing, we get a DR (depression rate), which ranges from 20 to 80 points. If the DR is no more than 50 points, the condition without depression is diagnosed. If the DR is more than 50 and less than 59 points, we conclude that there is a mild depression of situational or neurotic origin. DR index from 60 to 69 points is indicative of a sub depressive state or masked depression. True depression is diagnosed with DR being more than 70 points.

Data collection was performed by clinical examination and the patients' survey using a special questionnaire. We took these depressive disorders to develop: depressive episodes and mixed anxiety and depressive reactions, chronic affective mood disorders, prolonged depressive reactions as well as recurrent depressive disorders.

Chi-squared test was used in the material statistic processing.

In case of arrhythmias and impaired cardiac conduction, almost 60% of patients had psychopathic disorders mostly with depressive symptoms. In the first months after the onset of arrhythmias the patients have episodes of depression and mixed anxiety and depressive reactions. Later, chronic affective mood disorders begin to develop, as well as prolonged depressive reactions and recurrent depressive disorders. These disorders at the end of the second year become the leading ones and overweigh a great deal depressive episodes and depressive reactions ( $P < 0,05$ ).

Changing, with the time, light depressive disorders (depressive episodes and mixed anxiety and depressive reactions) into more complex (chronic affective mood disorders, prolonged depressive reactions, recurrent depressive disorders) indicate that with increasing disease duration the mental state of patients with cardiac arrhythmias is deteriorating.

During the research we established a close connection between the degree of severity and the structure of depressive disorders as well as frequency of attacks of cardiac arrhythmias.

Data on the connection between arrhythmias and impaired cardiac conduction and the degree of depressive disorders are summarized in Table 1.

As the table shows, the frequency of attacks of cardiac arrhythmias (more than 3 - times daily) in patients suffering from coronary artery disease with chronic depressive disorders is 1.6 times higher than in mild depressive disorders. The higher the degree of depressive disorders, the more frequent is the incidence of arrhythmias in patients with coronary heart disease ( $\chi^2 = 6,02$ ;  $df = 2$ ;  $p < 0,05$ ). The relationship between the incidence of arrhythmias is given in Table 2.

As the table shows, in patients suffering from CHD with chronic depressive disorders, daily multiple arrhythmias occur almost 2 times more frequently than in other forms of depressive disorders ( $\chi^2 = 17$ ;  $df = 2$ ;  $p < 1$ ).

The relationship between the rate of depressive disorders and paroxysms of arrhythmias and impaired cardiac conduction in CHD shows that more frequent and prolonged cases of cardiac arrhythmias occur the more often, the more frequent are deep depressive disorders in patients. This suggests that these changes may be secondary, as a result of patients' response to paroxysms of arrhythmias and impaired cardiac conduction.

Table 1

The incidence of arrhythmias in patients with coronary heart disease (absolute data)

Incidence of arrhythmias	A number of patients	Severity degree of depressive disorders			
		No disorders	Mild	Moderate	pronounced
Once-twice a week	16	7	5	2	4
Once-twice a day	39	11	6	11	9
3 times a day and more	58	7	16	17	18
Total	112	25	27	30	31

Table 2

The structure of depressive disorders and incidence of arrhythmias (absolute data)

Incidence of arrhythmias	A number of patients	Depressive disorders				
		depressive episodes	mixed anxiety and depressive reactions	chronic affective mood disorders	prolonged depressive reactions	recurrent depressive disorders
Once-twice a week		3	5	4	2	1
Once-twice a day		2	3	18	11	5
3 times a day and more		1	1	14	19	9
Total		6	9	26	32	15

The deeper is the response of patients to paroxysms of cardiac arrhythmias, the more frequently they lead to psychopathic changes, especially depressive disorders.

To sum up, the data that we obtained are indicative of an important role of depressive factors in the pathogenesis of paroxysms of cardiac arrhythmias which suggests a wider use of psychotherapy and psychotropic drugs in the treatment of arrhythmias and impaired cardiac conduction.

### Conclusions.

1. About 60% of patients suffering from CHD response with depressive and emotional disorders to cardiac arrhythmias.

2. With increasing duration of disease the mental state of patients with cardiac arrhythmias is deteriorating. The indication of this fact is the change of mild depressive disorders (depressive episodes and mixed anxiety and depressive reactions) into more complex ones (chronic affective mood disorders, prolonged depressive reactions, recurrent depressive disorders).

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