

MICROVASCULAR ANGINA: BALANCING QUALITY OF LIFE AND PSYCHOLOGICAL STATUS

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Abstract: A comprehensive assessment of a patient's condition includes determining quality of life (QOL) and psychological status (PS), which can exacerbate cardiovascular prognostic factors. Quality of life and psychological disorders were assessed in 54 male and female patients diagnosed with cardiac syndrome X (CSY). Depression symptoms were found to be associated with a decrease in QOL, as measured by the SF -36 scale. A decrease in hemodynamic parameters was associated with a worsening of QOL, as well as an increase in anxiety and depressive disorders. In patients with CSY, cognitive function regressed as the disease severity increased.

Key words: *microvascular angina, psychological status, quality of life, cognitive function.*

Relevance of the problem. Microvascular angina (MVA) is defined as dysfunction or narrowing of cardiac capillaries, which is the cause of angina in patients who have normal epicardial coronary arteries (CA) detected on coronary angiography (CAG) [1,2,5].

MIS is usually classified as one of the clinical forms of coronary heart disease, since the concept of “myocardial ischemia” includes all cases of imbalance between oxygen supply and myocardial demand for it, regardless of the causes (Gulati M., 2009; ESC , 2013).

Until recently, the clinical significance of MIS seemed rather limited [4]. Firstly, it seemed that this pathology occurs only in a relatively small group of patients (Kemp HG , 1973; ESC , 2019; Zhu H. , 2019). Secondly, it was believed that the prognosis for life in patients with MBC is significantly more favorable than in individuals with classic lesions of the epicardial arteries of the heart [3]. There is a point of view that the prognosis of patients with MBC worsens with the development of atherosclerosis of large coronary arteries, which, according to various sources, can occur in 30% of cases (ESC , 2019).

In recent years, there has been increasing evidence that depression and other psychological factors are independent risk factors for coronary heart disease [1] and should be considered in conjunction with such recognized risk factors as dyslipidemia, arterial hypertension, and smoking (Belenkov Yu.N., 2016). For patients with coronary artery atherosclerosis, it is typical that the anxiety and depression scores were fairly balanced [1], whereas for patients with coronary artery disease, on the contrary, a sharp predominance of anxiety scale scores was characteristic [6,8]. In patients with coronary artery disease, compared to patients with coronary artery disease, a connection between the onset of the disease and recent severe psychotraumatic situations is often observed (Tyrenko V.V., 2004; Trisvetova E.L., 2023). Patients with complaints of chest pain and angiographically normal coronary arteries show a more pronounced focus on their health than patients with organic cardiac pathology and healthy individuals [4,7]. It was noted that women with MBC were significantly better oriented regarding the prevalence of coronary heart disease among their relatives [5] than patients with coronary heart disease (Usenko E.V., 2018; Godo S ., 2021).

The aim of the study was to assess the quality of life and psychological status of patients with cardiac syndrome X.

Material and methods

A screening study of patients undergoing inpatient treatment at the Andijan branch of the Republican Scientific and Practical Center of Cardiology of the Republic of Uzbekistan with chest pain and undergoing coronary angiography was conducted. Ninety-four patients with unchanged coronary arteries and chest pain diagnosed with stable ischemic heart disease (SCH) were selected

from these patients. The average age of the patients was 48.6 ± 7.2 years. The diagnosis of SCH was established in accordance with the European guidelines for the treatment of stable ischemic heart disease (ESC, 2013). The average duration of observation was 3.0 ± 1.1 years.

According to the objective examination data, the diagnosis of MBC was established on the basis of three classical criteria (Camp N. G., 1973): anginal chest pain, positive stress test with physical activity (PE), unchanged coronary arteries according to coronary angiography [1,5]. Exclusion criteria were: diabetes mellitus (DM), heart defects (HD), cardiomyopathy (CMP), arterial hypertension (AH) stage II - III, left ventricular hypertrophy (LVH) of any etiology, obesity II - III, systemic connective tissue disease, stenotic coronary arteries according to coronary angiography, systolic dysfunction of the LV. The comparison group consisted of 40 patients of similar age, with a diagnosis of coronary artery disease, stable angina FC I - II.

Statistical processing was performed using Statistica 6.0 and Microsoft Office Excel 2010. Numerical values are presented as mean \pm standard deviation ($M \pm sd$). Fisher's F-test was used to test the hypothesis of equality of means in the two groups with a normal distribution. If the distribution deviated from normality, the nonparametric Mann-Whitney test was used.

Results. All MBC patients participating in the study underwent psychological assessment, using a range of methods aimed at studying the characteristics of their mental states and personality traits.

HADS) was used to initially identify anxiety and depressive symptoms. Results of the HADS questionnaire in MHS patients are presented in Table 1.

Table 1

Results of assessment of anxiety and depressive symptoms in patients with MBC (HADS questionnaire)

Indicator	MBC (n = 54)	
	abs.	%
subclinical anxiety symptoms	4	7.4
subclinically expressed symptoms of depression	3	5.6
clinically expressed symptoms of anxiety	25	46.3
clinically expressed symptoms of depression	13	24.1
absence of pronounced symptoms of anxiety and depression	9	16.7
Total	54	100.0

According to the HADS questionnaire (Table 1), 25 (46.3%) patients with MIS reported significant anxiety symptoms. These findings suggest that the patients are currently experiencing internal tension and anxiety, possibly caused by their illness symptoms and the severity of their medical condition. It is also important to note that 13 (24.1%) patients reported significant depressive symptoms.

To study the level of anxiety at the moment and personal anxiety, the "Self-Assessment Scale" technique developed by C. Spielberger and adapted by Yu. L. Khanin [9] was used (Table 2).

Table 2

Self-assessment scale for patients with MBC (C. Spielberger and Yu. L. Khanin)

Anxiety level	MBC (n = 54)	
	abs.	%
Reactive (situational anxiety)		
Short	0	0

Average (moderate)	29	53.7
High	25	46.3
Total	54	100.0
Personal anxiety		
Short	0	0
Average (moderate)	28	51.9
High	26	48.1
Total	54	100.0

An analysis of the data obtained using the method of C. Spielberger and Yu. L. Khanin showed (Table 2) that patients with MWS exhibited moderate levels of personal anxiety (28% (51.9%) and high levels (26% (48.1%)), while low levels were not detected in any of the patients in this group. Regarding state anxiety, patients with MWS exhibited moderate levels of reactive anxiety (29% (53.7%) and high levels (25% (46.3%)). Low state anxiety was also not recorded in any patient with MWS.

Based on these indicators, it can be assumed that the anxiety noted during this method is a personality trait in this category of patients. This means that patients perceive a wide range of situations as threatening and respond to them with anxiety [8,9]. It is also important to note that the existence of the disease is perceived by the examined patients as a " significant problem " and is characterized by anxiety, tension, and even a decrease in safety.

To study the presence and severity of depressive symptoms in patients, the Beck Depression Inventory (BDI) was used (Table 3).

Table 3

Beck Depression Inventory in patients with MDS

Degree of depression	MBC (n = 54)	
	abs.	%
high	4	7.4
moderate	11	20.4
easy	13	24.1
Norm	26	48.1
Total	54	100.0

Thus, according to the results of the Beck Depression Inventory, the majority of patients with MDS (26/48.1%) do not report symptoms of depression. Mild depressive symptoms were observed in 13 patients (24.1%), moderate depressive symptoms were observed in 11 patients (20.4%), and severe depressive symptoms were observed in 4 patients (7.4%).

To assess the quality of life of patients, the questionnaire “ SF -36 Health” was used. Status Survey » (Ware J . E . et al ., 1993). Taking into account the set task, the quality of life was assessed in 54 patients with MIS and 40 comparable patients with angina pectoris and atherosclerotic coronary artery disease (stenosis greater than 75%) of 1-2 coronary arteries proven by coronary angiography . The clinical characteristics of the examined patients are presented in Table 4.

Table 4

Characteristics of the examined patients with MBC and IHD CC FC I - II

Sign	MVS (n = 54)	IHD SS FC I-II (n=40)
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Age, years (M ± st)	48 , 6±7 , 2	53.2±5.6
Men	11 (20.4%)	23 (57.5%)
Women	43 (79.6%)	17 (42.5%)
The number of women in menopause	40 (74.1%)	15 (37.5%)
The number of women with preserved menstrual function	14 (25.9%)	2 (5.0%)
AG I-II st.	10 (18.5%)	31 (77.5%)
Angina pectoris, 1st functional class	0	6 (15.0%)
Angina pectoris 2 FC	0	29 (72.5%)
1-vascular coronary artery disease	0	23 (57.5%)
2-vessel coronary artery disease	0	12 (30.3%)
History of myocardial infarction	0	9 (22.4%)
Diabetes mellitus	0	3 (7.5%)

Patients with stable angina pectoris FC I - II due to coronary atherosclerosis were comparable with patients with MBC by gender (mainly women), age, severity of arterial hypertension, and clinical picture of the disease.

SAG questionnaire revealed that quality-of-life indicators in the group of patients with MVS were reduced and did not significantly differ from those in patients with atherosclerotic coronary artery disease (Table 5). Thus, scores on scales such as GH (general health), PF (physical functioning), VT (vitality), and RE (emotional state) were lower in the group of patients with MVS than in the group of patients with coronary artery disease.

Table 5

Quality of life indicators in patients with IBS and IHD FC I - II (M± m)

Scale	Group		R
	MVS (n= 54)	IHD SS FC I-II (n=40)	
GH	5 5 ,2±18,4	5 3 ,3±15,3	0.65
PF	5 8 ,6±21,1	5 2 .6 + 32.0	0.37
RP	3 8 ,6±30,3	4 0 ,4±24,3	0.78
RE	4 8 ,4 + 38,8	4 3 .5 + 33.7	0.74
SF	4 6 ,8±11,1	4 1 ,0±16,2	0.82
BP	5 8 ,3±19,9	4 6 ,9±17,6	0.07
VT	5 2 .5±19.3	49.1 ±14.7	0.57
MH	5 6 ,8±16,1	5 8 ,6 + 19,9	0.69
PH +	4 5 ,1±7,6	4 4 ,5±7,4	0.45
MH +	42.7 ±7.9	3 7 ,3±7,2	0.45

Since, as noted previously, we were able to observe patients with MBC for an average of 3.0±1.1 years, all patients underwent a repeat QOL assessment at the end of the observation period. As it turned out, no significant differences were found across all scales, but a slight negative trend toward worsening of these indicators was noted.

Thus, despite the absence of stenotic coronary artery disease, the quality of life of patients with MVA is reduced and is virtually identical to that of patients with angina due to coronary atherosclerosis. A trend toward increased depressive disorders and decreased cognitive function is

noted.

Conclusions

1. Half of patients with cardiac syndrome X have anxiety and depressive disorders. The quality of life of patients with cardiac syndrome X is reduced and is no different from that of patients with angina due to coronary atherosclerosis.
2. The presence of depressive symptoms in patients with MHS is associated with a decrease in such quality of life indicators as GH – general health, VT – vital activity, SF – social functioning, MH – self-assessment of mental health according to the SF - 36 scale, and is not associated with a change in quality of life indicators assessed using the SAQ questionnaire .

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