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Features of Clinical Manifestations in Patients with Microvascular Angina

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Abstract: Research into the various mechanisms underlying coronary artery disease (CAD) has revealed a condition in which chest pain and signs of myocardial ischemia develop despite intact coronary arteries, a condition first described by H. Kemp in 1973 as "cardiac syndrome X. " In 1988, S. Epsten and R. O. Cannon introduced the term "microvascular angina," demonstrating that the disease is caused by changes in the heart's microvessels. This article presents various perspectives on microvascular angina (MVA), ranging from the onset of the disease, invasive and noninvasive diagnostic methods, to treatment and prevention.

Key words: microvascular angina, epicardial vessels, non-invasive and invasive imaging methods, cardiac syndrome X.

Relevance of the problem. Microvascular angina (MVA) is usually considered 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, regardless of the underlying 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 MVA was significantly better than in individuals with classic epicardial artery disease. There is a view that the prognosis of patients with MVA 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). Patients with coronary artery atherosclerosis were characterized by fairly balanced anxiety and depression scores [1], while patients with MVS, on the contrary, were characterized by a sharp predominance of anxiety scale scores. In patients with MVS, compared to patients with coronary heart 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 chest pain complaints and angiographically normal coronary arteries demonstrate a more pronounced focus on their health than patients with organic cardiac pathology and healthy individuals [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 is to study the clinical parameters of the disease in patients with microvascular angina.

Material and methods. A study was conducted among patients undergoing inpatient treatment at the Andijan branch of the Republican Scientific and Practical Medical Center of Cardiology of the Republic of Uzbekistan with chest pain who underwent coronary angiography. Ninety-four patients with normal coronary arteries (CA) and chest pain were identified as having angina pectoris. The diagnosis of angina pectoris was established in accordance with the European Angina Guidelines (ESC, 2021). The average follow-up duration was 3.0 ± 1.1 years.

Study results. Women predominated among patients with MBC – 43 (79.6%), with only a small proportion of men – 11 (20.4%) . Patient ages ranged from 39 to 70 years (mean age 56.4±7.8 years). Postmenopausal women constituted the majority of patients with MBC – 45 (83.3%).

Only 15 patients (27.8%) had normal weight; the remaining 39 (72.2%) had an elevated body mass index or stage 1 obesity, and 40 (74.1%) patients had dyslipidemia. It should be noted that there were no smokers among the patients with MBC, including those with a history of smoking. Two-thirds of the patients with MBC had a family history of coronary heart disease or hypertension.

The disease duration ranged from 1 to 10 years, with an average of 5.6±0.9 years. Most patients with MCS (70.4%, or 38 individuals) indicated that the disease developed following various traumatic events. Four patients (7.4%) had a history of prior anterior non-Q-type MI.

Of the concomitant pathologies, the most frequently observed were: diseases of the gastrointestinal tract (46–85.2%) and thyroid pathology (16–29.6%) – diffuse and nodular goiter (at the time of examination, everyone was in a state of euthyroidism).

When assessing the psychological status, it turned out that, according to the Hospital Anxiety and Depression Scale (HADS), anxiety was observed in 24 patients (44.4%), while depression was found in 12 (22.2%). According to the Beck Depression Inventory, moderate depression was noted in 11 patients (20.4%), and severe depression was noted in 4 patients (7.4%) with MIS. Analysis of the Spielberger-Hanin scale showed that high levels of situational and personal anxiety were observed in 17 (31.5%) and 16 (29.6%) patients with MIS, respectively. The results of the Eysenck Introversion Scale revealed that 11 (20.4%) patients with MIS were introverts, and 23 (42.6%) patients had an average score combining the characteristics of introversion and extroversion.

All 54 patients complained of chest pain, but the pain syndrome had the following characteristics. Variability in pain duration was observed in 39 (72.2%) patients:

- The pain could last from 2-4 to 15-20 minutes.
- In 11 (20.4%) patients, there was variability in tolerance to FN: sometimes pain occurred with little FN, sometimes FN tolerance was good.
- In almost half of the patients (26–48.1%), the effect of nitrates was also variable: in the same patient, short-acting nitrates could take effect in 1–2 minutes, or in 10–15 minutes. Twenty (37.0%) patients experienced pain at rest.

Before inclusion in the study, patients received:

- disaggregants – 54 (100.0%);
- β-blockers – 32 (59.3%);
- ACE inhibitors – 37 (68.5%);
- calcium antagonists – 9 (16.7%);
- nitrates – 39 (72.2%),
- statins – 18 (33.3%) people.

During the observation period, therapy was adjusted: statins were prescribed to all patients with dyslipidemia, and beta-blockers were used primarily as anti-inflammatory medications, which

reduced the use of long-acting nitrates to 42.8%. All patients were advised to continue taking antiplatelet agents, and ACE inhibitors were prescribed for blood pressure control as indicated. Concurrently, sedative therapy was prescribed.

Conclusion: Thus, Pain in MVA is not as clearly defined as in angina due to atherosclerotic lesions in the coronary arteries. We believe this variability in pain may be due to microvascular abnormalities.

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