

## Cardiovascular Risk In Patients With Systemic Sclerodermia

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**Abstract:** The frequency and features of clinical manifestations of diseases of the cardiovascular system in patients with systemic scleroderma (SSD) are analyzed. The study included 55 patients aged 35 to 60 years who were diagnosed with SSD. Cardiovascular risk was studied using the SCORE scale, as well as instrumental methods of ECG and Echocardiography. Among the surveyed, a high incidence of cardiovascular diseases was noted. However, subjective complaints were relatively rare. According to ECG data, 74.5% of patients with SSD had pathological symptoms, including ischemic changes in 46.3% of patients. Acute cardiovascular events (MI and OSN) were registered in 15 of the main groups, which accounted for 27.3% of the total number of patients with SSD. The results obtained showed that lesions of the cardiovascular system in patients with SSD show low severity of symptoms.

**Keywords.** systemic scleroderma, cardiovascular diseases, acute vascular events, arterial hypertension.

### Introduction

Cardiovascular diseases are the most common in the world today and remain the leading cause of disability and death. According to many experts, this problem will persist in this trend in the coming decades. According to experts from the World Health Organization, 31% of all deaths are caused by diseases of the cardiovascular system [2; 7].

Recent studies have shown that cardiovascular complications associated with atherosclerotic vascular disease are the main cause of life expectancy in rheumatic diseases. According to numerous studies, the preclinical form of atherosclerosis is more common in patients with rheumatoid arthritis and systemic lupus erythematosus than in the general population [2; 5; 8]. These cases are associated with cardiovascular and autoimmune pathology [4; 3] will become the basis for studying interdependence. However, vascular pathology plays a leading role in systemic scleroderma. The mechanisms of damage to the cardiovascular system and related complications remain unexplored [1]. However, analyzes carried out in 2015 showed that this pathology has a high risk of death from vascular injury [6]. These data indicate the need to study the clinical features of cardiovascular diseases in SSD.

### The aim of the research

Study and prognosis of the prevalence and characteristics of the clinical manifestations of cardiovascular diseases in SSD.

### Materials and Methods

The study was carried out in the Department of Rheumatology of the Bukhara Regional Multidisciplinary Medical Center in 2018 in 55 patients with systemic scleroderma aged 35 to 60 years. Systemic scleroderma was diagnosed based on the ACR (1980) and ACR / EULAR (2010) criteria. Patients were recruited for examination after confirming the diagnosis of the disease in accordance with the current diagnostic

criteria based on the results of clinical, capillary and immunological data. In the majority of patients (71.5%), the chronic course of SJS lasted an average of 10 years.

According to the results of large scientific studies (SCORE, INTERHEART, Fremenheim), correcting risk factors is important for reducing mortality from cardiovascular diseases.

The incidence of concomitant cardiovascular diseases in patients with systemic scleroderma was studied, and the SCORE scale was used to predict risk levels for the occurrence and development of cardiovascular events. The age, sex of the patient, bad habits (smoking) and systolic blood pressure were taken into account.

EKG and EchoCG studies were also performed.

**Results**

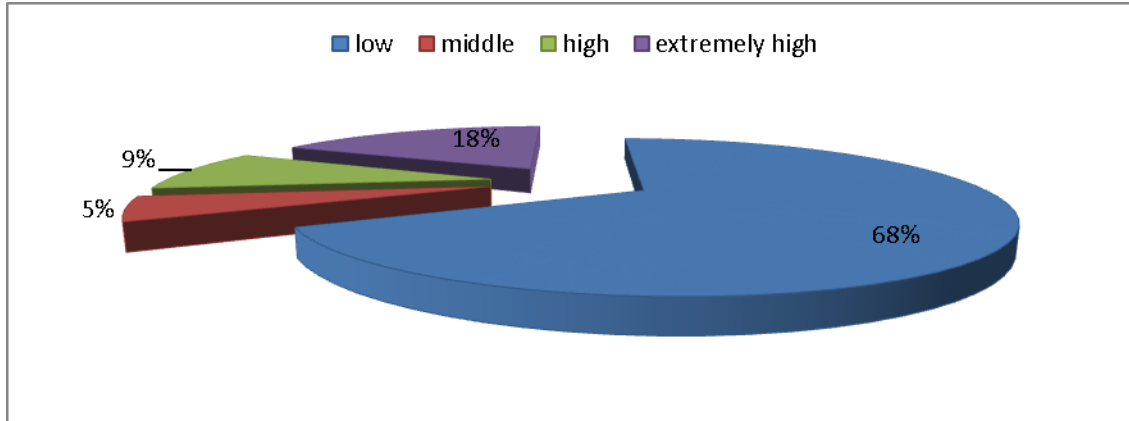
When examining the state of the cardiovascular system in the examined patients, it was noted that there were not so many subjective symptoms. Most of the examined patients (61.9%) had no complaints from the heart. However, 21 patients (38%) had Raynaud's syndrome, a sign of capillary damage. However, in a significant part of patients (56.1%), signs of cardiovascular diseases were identified after a targeted survey and objective examination (Table 1).

Symptoms related to the cardiovascular system	Revealed	%
Discomfort in the region of the heart	13	23,6%
Chest pain	16	29,1%
Heartbeat	20	38,1%
Arrhythmia	8	14,5%
Dyspnea	22	40%
Edema	6	10,9%
Pallor, cyanosis	5	9,1%
Raynaud's syndrome	21	38%

**Table 1. Composition of complaints about the cardiovascular system in patients with SSD**

The most common clinical signs of SSD are dyspnea on exertion (40%), palpitations (38.1%), chest pain (29.1%) and discomfort in the region of the heart (23.6%), and a feeling of heart failure. (14.5%).

When the risk of cardiovascular disease in controlled patients was analyzed using the SCORE scale, the low cardiovascular risk group was 67.6%, the moderate group 5.2%, the high group 9.4%, and the high group. very high. It was 17.8% (Figure 1).



**Figure 1. Results of examination on the SCORE scale in patients with SSD**

Various pathological changes were observed when analyzing EKG parameters in 41 (74.5%) patients. Of these, 36.6% of patients had intraventricular conduction disorders (more often left bundle branch block), ventricular (14.6%) and atrial (12.2%) extrasystoles, as well as impaired repolarization of the left ventricular myocardium (61%).

With daily EKG monitoring, ischemic changes in the ST segment were detected in 19 patients, which amounted to 46.3% of patients with pathological signs on the ECG. Often, similar EKG changes were observed in patients with a high level of disease activity and a long history.

EchoKG examination revealed signs of left ventricular hypertrophy (LVH) in more than half of the patients (54.5%) (Fig. 2).

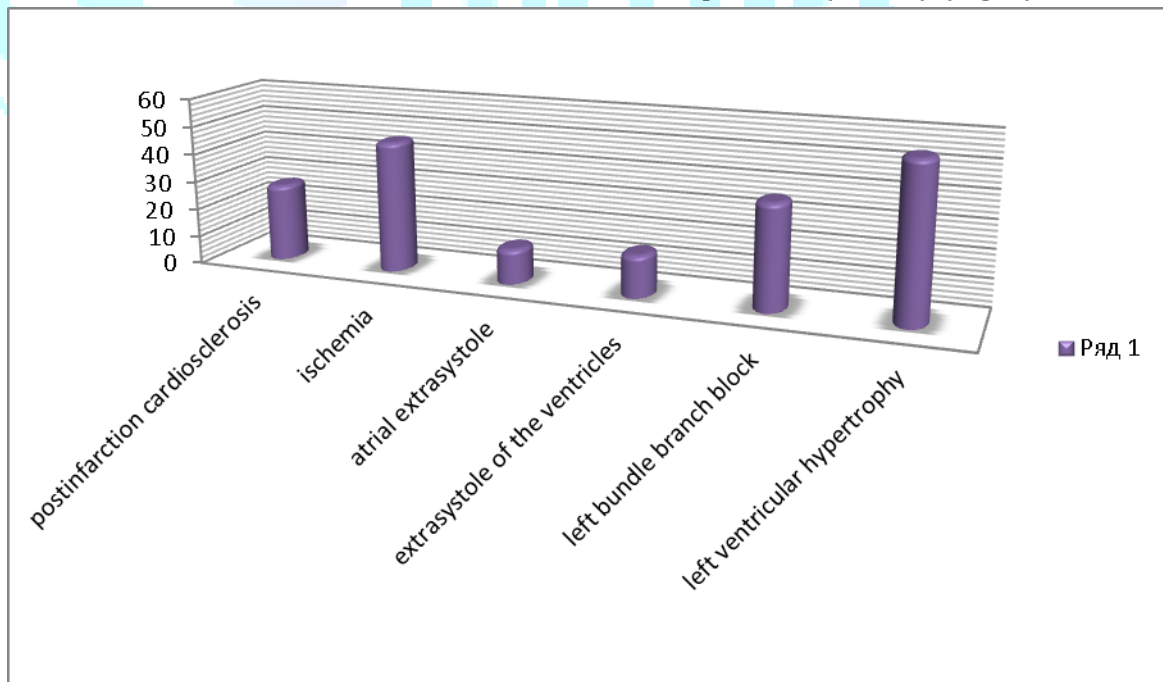
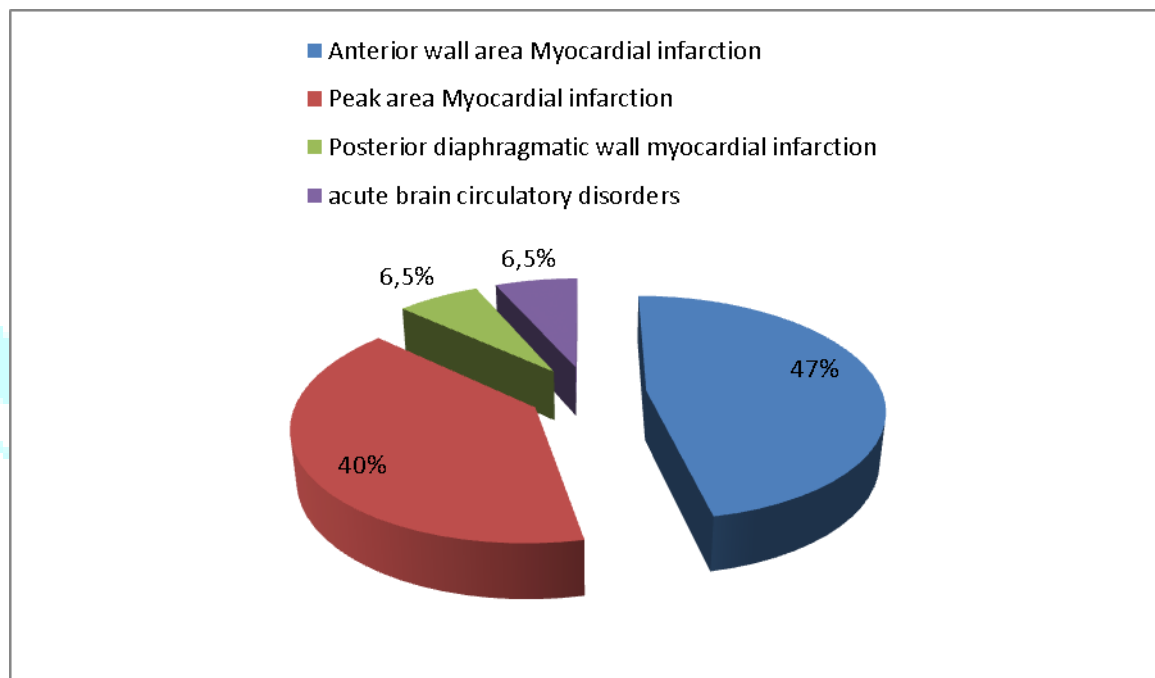


Figure 2. Pathological changes in EKG and EchoKG examination of patients with SJS. Postinfarction cardiosclerosis, aES-atrial extrasystole, ESv-extrasystole of the ventricles, LBBB - left bundle branch block, LVH-left ventricular hypertrophy.

Fifteen patients, that is, 27.3% of the examined, or 53.3% of patients with clinical signs of coronary heart disease in the group, had a history of acute vascular events (myocardial infarction and acute vascular insufficiency). When analyzing the data, it was found that myocardial infarction (MI) developed on average within 10 years from the onset of the disease.

In most cases, myocardial infarction was localized in the anterior wall (7 patients) and the apex of the myocardium (6 patients), and in the posterior diaphragmatic wall of the left ventricle in only one patient. At the time of admission to the hospital, all of these patients had symptoms of congestive heart failure corresponding to NYHA functional class II.

Only 1 (6.7%) patient in this group had a history of acute cerebrovascular accidents, as well as residual symptoms such as paresis and speech disorders (Fig. 3).



**Figure 3. Composition of macrovascular complications in patients with SSD (15 patients)**

### Conclusions

Thus, many patients with SJS were found to have ischemic heart disease complicated by MI or stroke.

Determining the risk of cardiovascular disease on the SCORE scale in patients with SSD has prognostic value.

Such an insignificant course of cardiovascular pathology in SSD may also be

associated with masking of macrovascular clinical symptoms using active anti-inflammatory and analgesic therapy to treat injuries to the affected bones, skin, musculoskeletal system, and internal organs.

Another reason for the untimely diagnosis of cardiovascular diseases in SSD is associated with the fact that doctors consider this disease to be predominantly a disease with a slight vascular lesion.

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