



Prevention of Cardiovascular Risk in Patients with Systemic Sclerodermia

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Abstract

Cardiovascular risk is a major concern in modern medicine in patients with systemic scleroderma (SSD). In these patients, the prevention of cardiovascular diseases, the identification of risk factors and the prediction of cardiovascular risk are of scientific and practical importance, thereby reducing morbidity, disability and mortality, as well as improving the quality and prognosis of patients. When determining the frequency of cardiovascular risk factors in patients with systemic scleroderma, it is important to identify such indicators as heredity, smoking, rheumatoid factor, hypercholesterolemia, abdominal obesity and C-reactive protein.

Keywords: Rheumatoid arthritis, hypercholesterolemia, rheumatoid factor, C-reagent protein, arterial hypertension, cardiovascular risk.

Today, cardiovascular diseases are the most common in the world and remain the leading cause of disability and death. According to many experts, this problem will continue 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 (Geneva: World Health Organization; 2017).

Recent studies have shown that the main cause of life expectancy in rheumatic diseases is cardiovascular complications associated with atherosclerotic vascular disease. According to numerous studies, preclinical atherosclerosis is more common in patients with rheumatoid arthritis and systemic lupus erythematosus than in the general population [1; 2; 8]. These cases are associated with cardiovascular and autoimmune pathology [5; 4] will become the basis for the study of interdependence. However, vascular pathology plays a leading role in systemic scleroderma. The mechanisms of damage to the cardiovascular system and related complications remain unexplored [3; 6]. However, analyzes conducted in 2015 showed that this pathology has a high risk of death from vascular damage [9]. These data indicate the need to study the clinical features of cardiovascular diseases in SJS.

Studies are being conducted to study the factors influencing the risk formation of the cardiovascular system (CVS) in patients with systemic scleroderma, to identify patients with high cardiovascular risk, to optimize and increase the effectiveness of preventive measures. [1,7]

In this regard, it is important to analyze the risk factors for the development of complications such as myocardial infarction, cerebrovascular accident, heart failure, and assess the amount of individualized cardiovascular risks.

Prevention of cardiovascular diseases in patients with SSD, early detection of risk factors and prediction of cardiovascular risk, which can reduce morbidity, disability and mortality, improve the quality of life of patients and prognosis, are of scientific and practical importance. Modern principles of cardiovascular prevention are based on the principles of individual prevention and control of risk factors, taking into account the factors influencing the formation of cardiovascular risk. [7]



Objective: To assess the level of risk factors leading to cardiovascular disease in patients with SSD.

Materials and methods. The research methods were carried out in 115 patients with SSD aged 35 to 60 years who received treatment in 2018 at the Department of Rheumatology of the Bukhara Regional Multidisciplinary Medical Center. The diagnosis of systemic scleroderma was made based on the ACR (1987) and ACR/EULAR (2010) criteria. When determining the frequency of cardiovascular risk factors in patients with systemic scleroderma, gender, age, bad habits, systolic blood pressure, and hypercholesterolemia were assessed. The SCORE scale has been used for early detection of cardiovascular risk.

Results and discussion. According to the results of the study, 99 (86%) of 115 SSc patients were women and 16 (14%) were men, with a mean age of 48.53 ± 6.95 . It was determined that 24 patients were 35–40 years old, 13 patients were 41–45 years old, 23 patients were 46–50 years old, and 55 patients were over 50 years old.

In patients with SSc, hereditary risk factors (RF) for cardiovascular disease were identified in 32.2%, abdominal obesity in 14.8%, hypertension in 52.2%, and hypercholesterolemia in 43.4% of patients. Smoking accounted for 8.7% of the patients in the study, as the majority (86%) of the subjects were women.

Among the risk factors, the prevalence of arterial hypertension (AH) was also high (52.2%) among patients, 43.4% among women, 93.7% among men and aged 50-60 years was 3.83 times more common among patients at the age of 35-49 years. Coronary heart disease (CHD) was observed in 11 (9.56%) patients, and diabetes mellitus (DM) - in 11 (9.56%) patients. When analyzing the incidence of risk factors in one patient, 75.7% of patients had a risk factor, of which 1 risk factor was detected in 23.5%, 2 risk factors were detected in 17.4%, and patients with 3 or more risk factors accounted for 34.8%. Risk factors were not observed in 24.3% of patients (Table 1).

Table 1. Occurrence of risk factors in patients with SSc

Number of risk factors in 1 patient	115 n (%)
1 risk factor	27 (23,5%)
2 risk factor	20 (17,4%)
≥3 risk factor	40 (34,8%)
Patients without risk factors	28 (24,3%)
Structure of risk factors	
Hereditiy	37(32,2%)
Smoking	10(8,7%)
Obesity	17(14,8%)
Hypercholesterolemia	49(42,6%)
Arterial hypertension	58(50,4%)

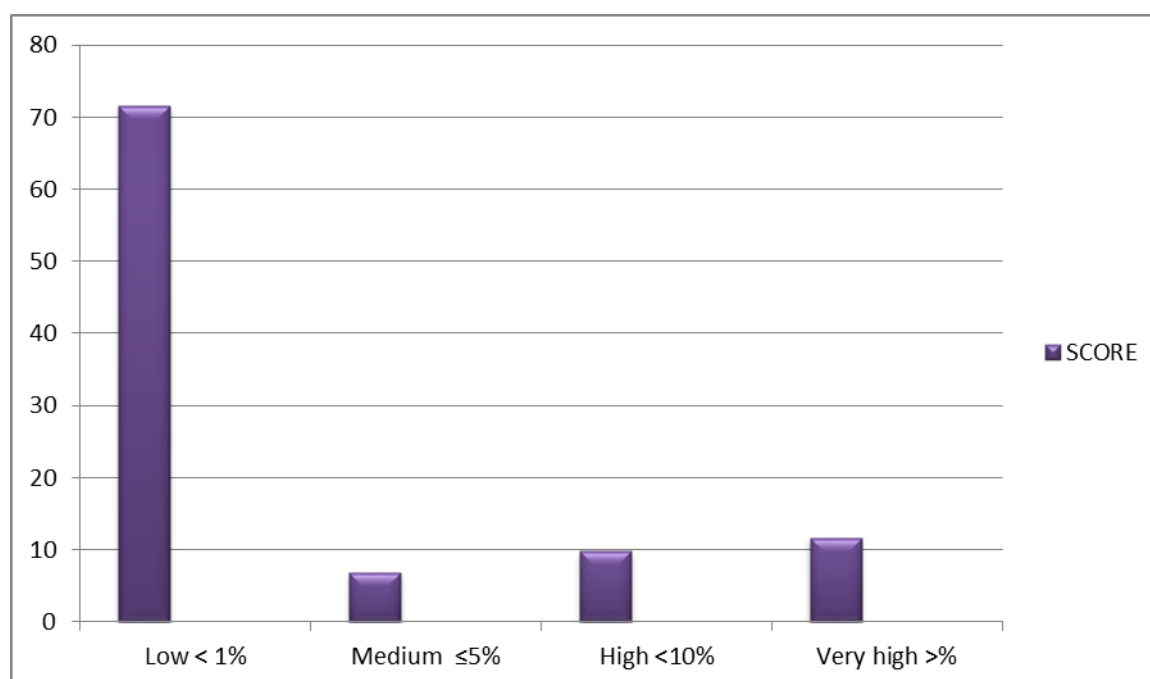
According to the results of major scientific studies (SCORE, INTERHEART, Fremenheim), correction of risk factors is important in reducing CVD mortality. The frequency of concomitant cardiovascular diseases in patients with SJS was studied and the SCORE scale was used to predict the risk of occurrence and development of cardiovascular events. Age, sex of the patient, bad habits (smoking) and systolic blood pressure are taken into account. Based on the performance criteria, patients were considered to have "low risk" less than 1%, "medium risk" 1 to 5% ($1\% \leq 5\%$), and "high risk" 5 to 10% ($5\% \leq 10\%$), $\geq 10\%$ are in the "very high risk" group [6,7].



Due to the presence of cardiovascular pathology in 13 out of 115 patients participating in the study, the prognosis on the SCORE scale was performed in 102 patients.

Table 2. Assessment of cardiovascular risk in patients with SSc

Patients with SJS (n=102)	SCORE
Low < 1%	73 (71,6%)
Medium <5%	7 (6,9%)
High <10%	10 (9,8%)
Very high >%	12 (11,7%)



In the analysis of cardiovascular risk indicators on the SCORE scale depending on age, 50 patients aged 35-49 years had a low risk of 46 (92%), no moderate risk, high risk of 1 (2%), very high risk, the risk was 3 (6%), and patients aged 50-60 years - 52, with low risk - 27 (52%), medium risk - 7 (13.5%), high risk - 9 (17.3%), very high risk — 9 (17.3%). The above data suggest that the risk of cardiovascular disease in patients with SJS increases with age (Table 3).

Table 3. Age-related incidence of cardiovascular risk in patients with SSc

Patients (n =102)	SCORE	
	35-49 (50)	50-60 (52)
Age of patients	35-49 (50)	50-60 (52)
Low risk <1%	46 (92%)	27(52%)
Medium risk ≤5%	0	7 (13,6%)
High risk ≤10%	1(2%)	9 (17,3%)
Very high risk >10%	3(6%)	9(17,3%)

Thus, by correcting risk factors, it is possible to achieve early prevention of diseases, reduce disability and mortality. Heart attacks can be prevented if the correction is started early. Adequate correction of risk factors is also equally effective at all stages of the disease, even after complications. The international SCORE scale, which measures the level of cardiovascular risk by identifying risk factors, increases the efficiency of work in this direction in primary health care.



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