



ASSESSMENT OF CARDIOVASCULAR RISK IN PATIENTS WITH SYSTEMIC SCLERODERMA

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Article history:	Abstract:
<p>Received: 3rd February 2023 Accepted: 3rd March 2023 Published: 6th March 2023</p>	<p>Cardiovascular risk is a major problem in modern medicine in patients with systemic scleroderma (SSc). Prevention of cardiovascular diseases (CVD), identification of risk factors and prediction of cardiovascular risk, thereby reducing morbidity, disability and mortality, as well as improving the quality and prognosis of patients has scientific and practical importance in these patients. In determining the incidence of cardiovascular risk factors in patients with systemic scleroderma, it is important to identify indicators such as heredity, smoking, rheumatoid factor, hypercholesterolemia, abdominal obesity and C-reactive protein.</p>
<p>Keywords: Rheumatoid arthritis, hypercholesterolemia, rheumatoid factor, C-reagent protein, arterial hypertension, cardiovascular risk.</p>	

INTRODUCTION. Cardiovascular disease is the most common disease in the world today and remains the leading cause of disability and death. According to many experts, this problem will continue in this trend in the coming decades. According to World Health Organization experts, 31% of all deaths are caused by cardiovascular disease (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 lesions. 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 [1; 2; 8]. These cases are associated with cardiovascular and autoimmune pathology [5; 4] will form the basis for studying the interdependence. However, vascular pathology plays a leading role in systemic scleroderma. The mechanisms of cardiovascular involvement and related complications remain unexplored [3; 6]. However, analyses performed in 2015 showed that this pathology has a high risk of vascular death [9]. These data suggest the need to study the clinical features of cardiovascular disease in SSD. Studies on factors influencing the formation of cardiovascular risk (CVR) in patients with systemic scleroderma, the identification of patients with high cardiovascular risk, optimization and improvement of the effectiveness of preventive measures are conducted. [1,7]

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

Prevention of cardiovascular diseases in patients with CAD, early detection of risk factors and prediction of cardiovascular risk, which allows to reduce morbidity, disability and mortality, improve quality of life and prognosis of patients, have scientific and practical significance. 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. [7,8,10]

OBJECTIVE:To assess the level of risk factors leading to cardiovascular lesions in patients with CVD.

MATERIALS AND METHODS.The study methods were conducted in 115 patients with SSD aged 35 to 60 years who received treatment in 2018 in the department of rheumatology of Bukhara Regional Multidisciplinary Medical Center. The diagnosis of systemic scleroderma was made on the basis of ACR - EULAR criteria (2013). In 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 was used for early detection of cardiovascular risk.

RESULTS AND DISCUSSION. According to the results of the study, 99 (86%) of the 115 patients with SSD were female and 16 (14%) were male 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 (Table 1).

Table 1
Clinical Characteristics of Patients with SCD

Indicators	Results
<i>Demographic indicators</i>	
Number of patients	115
Mean age (M±SD)	48,53±6,95
35-40 years old	24 (20,87 %)
41-45 years old	13 (11,3%)
46-50 years	23 (20%)
51-60 years	55 (47,8%)
Invalidity, n(%)	86 (74,8%)
Gender, n(%)	99 (86%) 16 (14%)
<i>The main characteristic of the disease</i>	
Length of history of SSD, n(%)	
up to 1 year	3 (2,6%)
1 to 5 years	19 (16,5%)
5 to 10 years	24 (20,7%)
over 10 years	69 (60,2%)
Dense edema at, n(%)	49 (42,6%)
Skin induration, n(%)	58 (50,4%)
Muscle atrophy, n(%)	17 (14,8%)
Calcinosis, n(%)	32(27,8%)
Raynaud's, n(%)	98(85,2%)
Sclerodactyly, n(%)	100 (86,9%)
Telangiectasia, n(%)	66 (57,39%)
Hyperpigmentation, n(%)	102 (88,7%)
C-reactive oxyl (+)	81(70,4%)
C-reactive oxytocin (-)	34(29,6%)
ECT (mm/s) (M±SD)	28,06±11,51

In patients with CVD, hereditary risk factors (FRs) for cardiovascular disease were identified in 32.2%, abdominal obesity in 14.8%, AH in 50.4%, and GCS in 42.6% of patients. Smoking accounted for 8.7% of patients in the study, as the majority (86%) of subjects were women.

Among risk factors, the prevalence of arterial hypertension (AH) was also high (50.4%) among patients, 43.4% among women.

Coronary heart disease (CHD) was observed in 11 (9.56%) patients, and diabetes mellitus (DM) in 11 (9.56%) patients. In an analysis of the incidence of risk factors per patient, 75.7% of patients had a risk factor, of which 1 risk factor was identified in 23.5%, 2 risk factors were identified in 17.4%, and patients with 3 or more risk factors were 34.8% . Risk factors were not observed in 24.3% of patients (Table 2).

Table 2
Occurrence of risk factors in DMD patients

Number of risk factors in 1 patient	115 n (%)
1 risk factor	35 (30,4%)
2 risk factor	15 (13 %)
≥3 risk factor	20 (17,4%)
Patients with no risk factors	45 (39,2%)
Structure of risk factors	115 n (%)
Heredity	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 large scientific studies (SCORE, INTERHEART, Fremenheim), correction of risk factors is important in reducing CVD mortality. The incidence of concomitant cardiovascular diseases in patients with CVD has been studied, and the SCORE scale is used to predict the risk of cardiovascular events. The patient's age, gender, bad habits (smoking) and systolic blood pressure were taken into account. Based on the criteria of the indicators, patients

were considered to have a "low risk" of less than 1%, "moderate risk" from 1 to 5% ($1\% \leq 5\%$) and "high risk" from 5 to 10% ($5\% \leq 10\%$), $\geq 10\%$ - included in the "very high risk" group[6,7].

Due to the presence of cardiovascular pathology in 13 of 115 patients who participated in the study, prognosis according to the SCORE scale was performed in 102 patients (Table 3).

Table 3
Assessment of cardiovascular risk in patients with SCD

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

When cardiovascular risk scores were analyzed by SCORE as a function of age, 73.7% aged 46-50 years had a low risk, no average risk, high risk 5.3%, very high risk 21%, and patients aged 51-60 years had a low risk 52%, average risk 14.6%, high risk 16.7%, very high risk 16.7%. The above data indicate that cardiovascular risk in SSD patients increases with age (Table 4).

Table-4
Age-related morbidity of cardiovascular risk in patients with SSD

Patients	SCORE			
	35-40 years old (n =22)	41-45 years old (n =13)	46-50 years old (n =19)	51-60 years old (n =48)
(n =102)				
Patients age	22(100%)	13(100%)	14(73,7%)	25 (52%)
Low risk $<1\%$	-	-	-	7 (14,6%)
Medium risk $\leq 5\%$	-	-	1(5,3%)	8 (16,7%)
High risk $\leq 10\%$	-	-	4(21%)	8(16,7%)

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

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