



CARDIOVASCULAR RISK ASSESSMENT IN PATIENTS WITH SYSTEMIC SCLEROSIS

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ABSTRACT

Systemic sclerosis (SSc) is a chronic autoimmune connective tissue disease characterized by widespread fibrosis, immune dysregulation, and vascular damage. Cardiovascular involvement represents one of the leading causes of morbidity and mortality in patients with SSc. Importantly, cardiovascular complications may develop at an early stage and remain clinically silent for a long time. Therefore, early identification of high-risk patients is essential for improving long-term outcomes.

Background. Systemic sclerosis (SSc) is a chronic autoimmune connective tissue disease characterized by widespread fibrosis, immune dysregulation, and vascular damage. Cardiovascular involvement represents one of the leading causes of morbidity and mortality in patients with SSc. Importantly, cardiovascular complications may develop at an early stage and remain clinically silent for a long time. Therefore, early identification of high-risk patients is essential for improving long-term outcomes.

Aim. To evaluate cardiovascular risk in patients with systemic sclerosis using conventional risk assessment tools and carotid ultrasound markers.

Materials and Methods. The study included patients diagnosed with systemic sclerosis who underwent comprehensive clinical and instrumental evaluation. Traditional cardiovascular risk factors were analyzed, including age, blood pressure, smoking status, and lipid profile.

The SCORE risk model was applied to estimate the 10-year risk of fatal cardiovascular events. In addition, carotid ultrasound examination was performed to measure carotid intima-media thickness (CIMT) as an indicator of subclinical atherosclerosis.

Results. The analysis demonstrated that a considerable proportion of patients with systemic sclerosis exhibited increased cardiovascular risk. Carotid ultrasound revealed increased CIMT values in many patients, even in those classified as low-risk according to the SCORE system.

These findings suggest that systemic inflammation and disease-specific vascular

damage in SSc may contribute to accelerated atherosclerosis independently of traditional risk factors.

Clinical Implications. The results emphasize the importance of incorporating vascular imaging techniques into routine cardiovascular risk assessment in systemic sclerosis. CIMT measurement may serve as a valuable tool for early detection of subclinical vascular involvement and for refining risk stratification strategies in this patient population.

Conclusions. Systemic sclerosis should be considered an independent enhancer of cardiovascular risk. Standard risk assessment models alone may underestimate true risk in these patients. A combined approach using both conventional risk scores and carotid ultrasound improves early identification of patients at high cardiovascular risk..

References:

1. Khamroyeva Y.S. Early Diagnosis of Systemic Scleroderma // Procedia of Engineering and Medical Sciences-2022. №01.P.31-38.
2. Mukhidinova, Saidova M., and Khamroeva Y. Saidovna. "Cardiovascular Risk in Patients with Systemic Scleroderma." International Journal on Orange Technologies, vol. 3, no. 3, 2021, pp. 45-49, doi:10.31149/ijot.v3i3.1371.
3. Алекпаров Р.Т., Ананьева Л.П., Черкасова М.В. Клинические ассоциации сосудистого эндотелиального фактора роста и его рецептора 2-го типа при системной склеродермии. // Научно-практическая ревматология. 2018. 56(5).-С .570.
4. Моимеев А.А. Современные методы диагностики ограниченной склеродермии. // Саратовский научно-медицинский журнал.-2016. 12(3). –С. 482.
5. Саад Е.О., Ананьева Л.П., Новикова Д.С., Алекперов Р.Т. Традиционные факторы риска сердечно-сосудистых заболеваний при системной склеродермии и их связь структурными изменениями сердца // Научно-практическая ревматология -2016. (54) 6. –С. 688.