

SKIN INVOLVEMENT IN SYSTEMIC SCLEROSIS AND ITS CO-OCCURRENCE WITH SYSTEMIC MANIFESTATIONS

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Background. Microangiopathy, immune activation, and progressive fibrosis are the central pathogenic mechanisms in systemic sclerosis (SSc). Skin induration is the hallmark clinical feature of the disease, which may extend from the fingers to the face and proximal trunk, and is accompanied by hyperpigmentation, perioral changes, trophic-dystrophic signs, and contractures. Integrated assessment of the skin phenotype alongside vascular and internal organ involvement is essential for determining disease severity and selecting individualised monitoring strategies.

Objective. To determine the prevalence and clinical characteristics of skin involvement in patients with SSc and to evaluate its co-occurrence with vascular and internal organ manifestations.

Materials and Methods. A retrospective analysis of medical records of 19 patients with SSc and overlap syndrome treated in the cardiorheumatology department during 2024–2025 was performed. Age, sex, disease course, activity level, Raynaud's phenomenon, and internal organ involvement were assessed in all patients. In 16 records containing detailed skin descriptions, the extent of induration, hyperpigmentation, skin dryness, perioral changes, nail dystrophy, hand contracture or atrophy, and critical ischaemia were coded separately. As modified Rodnan Skin Score (mRSS) was not recorded in a standardised manner, skin involvement was assessed based on clinical descriptions.

Results. Mean patient age was 46.1 ± 9.1 years; 89.5% were women (n=17) and 10.5% were men (n=2). Grade II disease activity was recorded in all patients. A subacute course was found in 78.9% (n=15) and a chronic course in 21.1% (n=4). Raynaud's phenomenon and vascular involvement were present in all patients. Skin induration or sclerosis was documented in all 16 records with detailed skin descriptions. Diffuse or proximal extension to the face, chest, abdomen, shoulders, and thighs was observed in 68.8% (n=11), nail dystrophy in 68.8% (n=11), hyperpigmentation in 50.0% (n=8), lip thinning or perioral "purse-string" sign in 43.8% (n=7), and skin dryness in 31.3% (n=5). Hand contracture, deformity, or muscular atrophy was present in 25.0% (n=4). Critical digital ischaemia was recorded in 10.5% (n=2) of the total cohort. Oesophageal involvement was found in 84.2% (n=16), pulmonary involvement in 57.9% (n=11), and renal involvement in 57.9% (n=11), demonstrating frequent co-occurrence of skin, microvascular, and visceral manifestations.

Conclusions. Skin involvement in SSc is clinically heterogeneous; diffuse induration, nail dystrophy, hyperpigmentation, and perioral changes were the predominant features in this cohort. Hand contractures and critical ischaemia indicate functional

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limitation and a severe vascular phenotype. Patient monitoring should incorporate standardised mRSS assessment, distribution mapping, and evaluation of hand perfusion, alongside regular screening for oesophageal, pulmonary, and renal involvement.

Keywords: *systemic sclerosis, skin induration, hyperpigmentation, Raynaud's phenomenon, critical ischaemia, modified Rodnan Skin Score.*

