2015 and November 2017. Exclusion criteria were as follows: not having serum CRP levels within 1 month of iron studies, chronic kidney disease (eGFR <60 ml/min), haemoglobinopathies, major surgery within one year, overt gastrointestinal (GI) or genitourinary blood loss, active GI cancer and vascular lesions of GI (GAVE, intestinal telangiectasia). Patients who have ferritin levels below cut-off values or were already on iron replacement were considered as iron deficient. To define iron deficient status, threshold levels of serum ferritin 30 ng/mL and 100 ng/mL were used to denote those with normal and high CRP levels (>5 mg/L) respectively. WHO classification system was used to determine the presence and severity of anaemia. Relationship between demographic and disease characteristics and serum iron status was analysed using Fisher's exact and Mann-Whitney U test.

Results: 178 patients (76.4% female) were eligible for final analysis. Clinical characteristics are reported in table 1. Median age and disease duration (interquartile range, IQR) were 54.6 (44.8–66.1) and 4.9 (2.1–4.8) years, respectively. ID was present in 43.2% of the patients and 41.6% of these patients was not anaemic. Iron deficient patients were more frequently female and had longer disease duration. Among female patients, ID was significantly more prevalent before the age of 50 (77.6% vs 0%, $p<0.001$).

Abstract THU0398 – Table 1. Comparison of demographics and disease characteristics between iron deficient and iron replete patients

	Iron replete (n=101)	Iron deficient (n=77)	p
Age, years, median (min-max)	56.8 (48.9–66.2)	51.9 (35.7–65.9)	0.06
Female, n (%)	70 (69.3)	66 (85.7)	0.01
Disease duration, years, median (min-max)	3.8 (1.7–8.1)	6.1 (3.0–24.6)	<0.01
Diffuse disease, n (%)	67 (66.3)	46 (62.2)	0.56
Anaemia, n (%) ¹	39 (38.6)	45 (58.4)	0.01
Moderate/severe anaemia, n (%) ²	11 (10.9)	24 (31.2)	<0.01
*GI involvement, n (%) ³	6 (6.0)	3 (3.9)	0.73
*Digital ulcer (DU), n (%)	23 (22.8)	20 (26.0)	0.62
*Severe DU, n (%) ⁴	14 (13.9)	12 (15.6)	0.74
*PAH, n (%)	2 (2.2)	3 (4.5)	0.65
ILD, n (%)	29 (30.9)	26 (36.6)	0.43
Proton pump inhibitor use, n (%)	81 (88.8)	64 (87.0)	0.94
Antibody specificity			
Scl-70, n (%)	21 (23.6)	11 (31.8)	0.25
Centromere, n (%)	20 (22.5)	13 (19.7)	0.67
RNA polymerase III, n (%)	16 (18.0)	9 (13.6)	0.46

* Diagnosed between May 2015 and November 2017

¹ Serum haemoglobin level of <13 mg/dL for men and <12 mg/dL for women

² Serum haemoglobin level of <11 mg/dL for both sex

³ Required antibiotics or bosentan, critical digital ischaemia, gangrene

⁴ Intestinal pseudoobstruction requiring hospitalisation, >2 courses of small bacterial overgrowth, PEG insertion or parenteral nutrition

Conclusions: Unexplained iron deficiency is frequent in scleroderma patients and a significant number of these patients do not have frank anaemia. Female sex and longer disease duration is associated with iron deficiency. Increased frequency in young female patients can be related to menstrual blood loss and further study to evaluate this association is required.

Disclosure of Interest: None declared

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THU0399 FEMALE SEXUAL DYSFUNCTION IN PATIENTS WITH IDIOPATHIC INFLAMMATORY MYOPATHIES

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Background: Idiopathic inflammatory myopathies (IIM) are characterised by inflammation and atrophy of skeletal muscles, pulmonary and articular involvement, which leads to functional impairment, reduced quality of life including sexual life.

Objectives: To assess sexual functions/quality of life and pelvic floor function in female IIM patients compared to age-/sex-matched healthy controls (HC).

Methods: In total, 22 women with IIM [mean age: 55.1, disease duration: 7.9 years, dermatomyositis (DM, 8)/polymyositis (PM, 10)/necrotizing myopathy (IMNM, 3)/inclusion body myositis (IBM, 1)], who fulfilled the Bohan/Peter 1975 criteria for DM/PM, and 22 healthy controls (mean age: 55.1 years) without rheumatic diseases filled in 12 well-established and validated questionnaires assessing sexual function/quality of life, pelvic floor function, fatigue, physical activity and depression. Data are presented as mean $\pm$ SEM.

Results: Compared to HC, patients with IIM had significantly higher prevalence and greater severity of sexual dysfunction (FSFI, BISF-W: in all subscales as well as total scores), dysfunction of pelvic floor (PISQ-12), and worse sexual quality of life (SQoL-F) (table 1). Worse scores in IIM patients were associated with elevated muscle enzyme levels [lactate dehydrogenase: FSFI ($r=-0.524$, $p=0.0123$), BISFW ($r=-0.528$, $p=0.0115$)], greater fatigue [FIS: FSFI ($r=-0.434$, $p=0.0438$), BISF-W ($r=-0.488$, $p=0.0211$), SQoL-F ($r=-0.488$, $p=0.0070$), PISQ-12 ($r=0.643$, $p=0.0013$)], more severe depression [BDI-II: PISQ-12 ($r=0.474$, $p=0.0258$)], deteriorated quality of life [HAQ: PISQ-12 ($r=0.476$, $p=0.0252$)], and worse ability to perform physical activities [HAP: FSFI ($r=0.437$, $p=0.0417$), BISF-W ($r=0.451$, $p=0.0351$), PISQ-12 ($r=-0.494$, $p=0.0195$)].

Questionnaire: score range	Idiopathic inflammatory myopathies (n=22)	Healthy controls (n=22)	p-value
FSFI: Female Sexual Function Index: 2 (worst)–36(best)	14.2 $\pm$ 2.7	23.5 $\pm$ 2.5	$p=0.0146$
BISF-W: Brief Index of Sexual Function for Women: –16(worst)–75(best)	15.5 $\pm$ 3.9	28.9 $\pm$ 3.8	$p=0.0193$
PISQ-12: Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form: 0(best)–48(worst)	13.8 $\pm$ 1.1	8.0 $\pm$ 1.0	$p=0.0003$
PFQI7: Pelvic Floor Distress Inventory Questionnaire – short form 7: 0(best)–300(worst)	15.8 $\pm$ 4.5	5.6 $\pm$ 2.3	$p=0.1450$
SQoL-F: Sexual Quality of Life Questionnaire – Female: 0(worst)–100 (best)	54.9 $\pm$ 6.0	83.1 $\pm$ 3.4	$p=0.0006$
FSS: Fatigue Severity Scale: 9(best)–63 (worst)	46.9 $\pm$ 2.8	26.7 $\pm$ 2.5	$p<0.0001$
FIS: Fatigue Impact Scale: 0(best)–160 (worst)	60.6 $\pm$ 6.9	29.0 $\pm$ 4.2	$p=0.0003$
MAF: Multidimensional Assessment of Fatigue Scale: 1(best)–50(worst)	26.1 $\pm$ 2.3	17.8 $\pm$ 1.4	$p=0.0129$
BDI-II: Beck's Depression Inventory II: 0 (best)–63(worst)	14.5 $\pm$ 2.2	5.3 $\pm$ 1.1	$p=0.0003$
HAP: Human Activity Profile – adjusted activity score: 0(worst)–94(best)	53.7 $\pm$ 4.3	81.1 $\pm$ 1.5	$p<0.0001$
HAQ: Health Assessment Questionnaire: 0 (best)–3(worst)	1.0 $\pm$ 0.2	0.0 $\pm$ 0.0	$p<0.0001$

Conclusions: Women with IIM reported significantly impaired sexual function, sexual quality of life and pelvic floor function than age-matched healthy controls. Worse scores in IIM were associated with disease activity, physical activity, fatigue, depression and quality of life.

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THU0400

INCIDENCE AND RISK FACTORS FOR GANGRENE IN PATIENTS WITH SYSTEMIC SCLEROSIS FROM THE EUSTAR COHORT

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Background: Digital ulcers (DUs) affect about half of systemic sclerosis (SSc) patients during disease course. In some patients, peripheral vasculopathy can promote critical ischemia and gangrene, severe complications with potential life threatening consequences. Recently the DUO registry suggested a 18% prevalence of gangrene in DU-SSc patients, with smoking and a high number of DUs being predictive factors. However, little is known about gangrene in unselected SSc patients.

Objectives: To investigate the prevalence, incidence and risk factors for gangrene in the EUSTAR cohort.

Methods: We included patients from the EUSTAR database satisfying the ^{ACR 1980} or the ACR/EULAR 2013 classification criteria for SSc, with at least one visit recording data on gangrene. We extracted from this database data regarding the reporting of DUs, DUs history and digital gangrene. Centres were asked for supplementary data on traditional cardiovascular (CV) risk factors. We analysed by uni- and multivariable logistic regression the cross-sectional relationship between gangrene and its potential risk factors such as history of DUs, cutaneous subset, disease duration, autoantibodies, traditional CV risk factors. Furthermore, longitudinal data were analysed by Cox proportional hazards regression.

Results: 1757 patients matched the inclusion criteria (age at inclusion 55.9±14.5 years, disease duration since first non-Raynaud's symptom 7.9±10.3 years and from onset of Raynaud's phenomenon (RP) 11.1±11.0 years, male sex 16.7%, 24.6% diffuse cutaneous subset (DcSSc). At inclusion, 8.9% of patients had either current or previous digital gangrene, 15.7% had current DUs and a further 25.8% had previously had DUs. Among the potential risk factors, older age, a history of DUs and the DcSSc subset were statistically significant risk factors in the cross-sectional multivariable model.

For the longitudinal part, during the entire follow-up (median [Q1,Q3] 13.1 [9.6, 19.3] months), 16/771 patients had incident gangrene (2.1%), accounting for an incidence of 1.73/100 patient-years. All 16 patients who developed incident gangrene had previously had DUs and gangrene. Further risk factors for incident gangrene were the DcSSc subset and longer disease duration: hazard ratio [95% confidence interval]: 8.97 [2.90–27.71] and 1.08 [1.04–1.13] respectively, both p<0.001.

Conclusions: In unselected SSc patients, gangrene still occurs in about 9% of SSc patients. Of the most importance, a history of DUs and, to a lesser extent, the DcSSc subset are strongly and independently associated with gangrene, while traditional CV risk factors were not identified as risk factors. Our results confirm that gangrene is still a concern in SSc. They emphasise the importance of microvascular SSc-associated disease in the pathogenesis of gangrene and suggest that the DcSSc subset should be prioritised for risk-stratification of the patients.

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THU0401

GLOBAL LONGITUDINAL STRAIN AS EARLY PREDICTOR OF SYSTOLIC DYSFUNCTION IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a chronic autoimmune disease of unknown etiology, characterised by microvascular abnormalities, immune abnormalities and progressive cutaneous and internal organs fibrosis. Subclinical heart disease in SSc patients is common but difficult to detect through conventional imaging.

Objectives: We sought to evaluate speckle-tracking derived global longitudinal strain (GLS) as an early marker of subclinical systolic dysfunction in patients with SSc.

Methods: We enrolled 52 patients with SSc and 52 age and gender matched controls. Patients with structural heart disease, heart failure, atrial fibrillation or pulmonary hypertension were excluded. An echocardiographic exam was performed for all patients, and standard and speckle-tracking derived variables for the systolic and diastolic function of the left ventricle (LV) and right ventricle (RV) were acquired. SSc variant, antibodies pattern, cardiovascular risk factors and involvement of other organ systems were recorded.

Results: Common parameters of left and right systolic function did not differ between SSc patients and controls and were on average well above the cut-off for normality (all p=NS). LV and RV GLS were significantly impaired in patients with SSc when compared to healthy controls (−19.2% vs. −21.1%; p=0.009 and −18.2% vs. −22.3%; p=0.012 respectively). In patients with SSc, GLS impairment was greater in basal segments when compared to midventricular and apical ones and homogeneous between the endo-, meso-, or epicardial layers of the RV, while LV showed an eccentric pattern with the epicardial layers mostly impaired. Using −20% as a cut-off for GLS, SSc patients had a 2.5-fold increased risk of subclinical LV systolic impairment (OR 2.5; 95% CI 1.1–5.5; p=0.027) and a 3.3-fold increased risk of subclinical RV systolic impairment when compared to age and gender matched controls (OR 3.3; 95% CI 1.4–7.7; p=0.004).

Conclusions: While traditional parameters are ineffective in detecting subclinical systolic impairment, a reduced GLS is common in patients with SSc and is significant for both LV and RV. While GLS impairment recognises a basal-apical gradient, transmural heart involvement seems different between RV and LV, suggesting a different mechanism of disease between the two ventricles.

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