Table 1

Clinical parameter	Correlated parameters	r	p-value
ESSG diseases activity index	FSFI Arousal domain	-0.300	p<0.0001
	IIEF EF	-0.597	p=0.0240
CRP	IIEF Orgasmic Function	-0.668	p=0.0081
mRSS	MSHQ Sexual Desire	0.555	p=0.0613
FIS	BISF-W	-0.410	p=0.0002
MAF	FSFI	-0.399	p=0.0002
BDI-II	BISF-W	-0.381	p=0.0002
	IIEF EF	-0.801	p=0.0005
HAP	SQoL-F	0.383	p=0.0006
	BISF-W	0.456	p<0.0001
	IIEF EF	0.639	p=0.0062
SHAQ	FSFI	-0.409	p<0.0001
	BISF-W	-0.451	p=0.0002

Name of Questionnaires/Acronyms: FSFI: Female Sexual Function Index; BISF-W: Brief Index of Sexual Function for Women; SQoL-F/M: Sexual Quality of Life Questionnaire-Female/Male; PISQ-12: Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form; PFIQ7: Pelvic Floor Distress Inventory Questionnaire; IIEF: International Index of Erectile Function; MSHQ: Male Sexual Health Questionnaire; FIS: Fatigue Impact Scale; MAF: Multidimensional Assessment of Fatigue; BDI-II: Beck's Depression Inventory II; HAP: Human Activity Profile; SHAQ: Scleroderma Health Assessment Questionnaire; ESSG: European Scleroderma Study Group; CRP: C-reactive protein; mRSS: modified Rodnan skin score

Results: Compared to HC, women with SSc had significantly higher prevalence and greater severity of sexual dysfunction [FSFI total score (SSc: 16.4±1.3, HC: 25.6±1.2, p<0.0001) as well as in all subscales (p<0.0001 for all), BISF-W total score (SSc: 17.2±2.3, HC: 32.0±1.9, p<0.0001)], dysfunction of pelvic floor [(PISQ-12 (SSc: 3.6±0.7, HC: 8.9±0.6, p<0.0001), PFIQ7 (SSc: 33.4±5.6, HC: 6.8±1.4, p<0.0001)], and worse sexual quality of life [SQoL-F (SSc: 55.3±3.3, HC: 82.1±2.1, p<0.0001)]. Men with SSc also reported more severe sexual dysfunction: [IIEF - Erectile function (EF) (SSc: 15.4±3.0, HC: 26.2±2.1, p=0.004), IIEF - Orgasmic function (SSc: 6.4±1.2, HC: 9.0±0.6, p=0.045), IIEF - Intercourse satisfaction (SSc: 9.7±1.8, HC: 15.7±1.3, p=0.008), MSHQ - Erectile Function (SSc: 9.0±1.2, HC: 12.9±0.9, p=0.005), MSHQ - Satisfaction (SSc: 19.2±2.1, HC: 26.8±0.9, p=0.001)] and worse sexual quality of life [SQoL-M (SSc: 68.5±7.4, HC: 86.7±6.2, p=0.023)]. According to the IIEF classification, 71 % of SSc men reported mild to severe erectile dysfunction. No significant differences were found in pelvic floor function. Significant associations with major clinical parameters are presented in Table 1.

Conclusion: Both women and men with SSc reported significantly impaired sexual function compared to HC with identical age. Worse scores in SSc were associated with disease activity, increased systemic inflammation, health status, physical activity, fatigue and depression.

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SAT0325

STELLATE BLOCKADE COMBINED TO ILOPROST AS SUPPORTIVE TREATMENT OPTION IMPROVES PAIN AND ISCHAEMIC SYMPTOMS IN PATIENTS WITH SYSTEMIC SCLEROSIS

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Background: Peripheral ischaemia is a common symptom in systemic sclerosis (SSc) patients with risk of development of digital ulcers (DU). For its treatment, intravenous iloprost is the most effective option. Accompanying pain symptoms worsen the ischaemic symptoms, so a combination with anaesthetic procedures may improve ischaemic status and the subjective sensation of raynaud and pain. The aim of this study was to observe the impact of a combined treatment of iloprost with stellate blockade (ILOST) in improvement of ischaemic symptoms compared to iloprost treatment only (ILO).

Objectives: To evaluate efficacy of the ILOST treatment on changes in vascularisation and sensation of patients with SSc and indication for vasodilative treatment with Iloprost.

Methods: Twenty SSc-patients with indication for ILO-treatment (prophylactic or due to digital ulcerations (DU)) will be included in a prospective observational study. Patients will be offered to combine ILO with stellate blockade (ILOST). Beside documentation of disease activity characteristics (mRSS, number of DU, capillary microscopy at baseline, after ILO-treatment and at week 12), patients are assessed using fluorescence-optical imaging (FOI) as innovative method for illustration of changes in microvascularisation and patient reported outcomes (DASH, VAS) at week 12.

Results: This interim analysis includes the result of the first 11 patients treated. Mean baseline characteristics (age and gender) are well balanced. Iloprost treatment was initiated due to prophylactic treatment to avoid DU in all patients. 100% of the patients in the ILOST-group were diagnosed as limited SSc compared to 60% in the ILO-group (diffuse type with 40%). All patients showed abnormalities in capillary microscopy (ILOST group: 83,3% late pattern 16,7% active pattern; ILO group: 80% late pattern, 20% early pattern). mRSS was low in both groups with 1.8, the disease duration in mean 15.3 years in the ILOST-group compared to 13.2 in the ILO-group, respectively. In both groups, no new DU occurred in the 12-week follow-up. Improvement in VAS pain was reported in 83% of the patients in the ILOST group compared to 60% in the ILO group. DASH improved with a mean of 5.5 points in the ILOST group compared to 3 points in the ILO group. FOI was compared individual at both arms in the ILOST group only. The arm with stellate blockade showed a pronounced increase of FOI signals of 5% in mean whereas the opposite site showed a decrease of the signal shortly after ILO treatment indicating a pronounced increase of vascularisation in the ILOST treated body site.

Conclusion: A new treatment approach to improve acute ischaemic symptoms was tested by combining stellate blockade to iloprost treatment. No new DU occurred up to 12 weeks after treatment in all patients of both groups indicating the relevance of iloprost as effective vascular dilatative therapy in SSc. The additional intervention was well tolerated and asked to repeat. Subjective sensation on pain of the hands as well as DASH was improved in the combined group. FOI showed a relevant increase in vascularisation in the blockade arm compared to the opposite site in which signals decreased indicating a stronger effect of the combined treatment for improvement of vascularisation.

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SAT0326

SYSTEMIC SCLEROSIS WITHOUT ANTINUCLEAR ANTIBODIES: A MULTI-CENTER STUDY OF EUSTAR COHORT IN CHINA

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Background: The presence of circulating antinuclear antibodies (ANAs) is a hallmark of immune dysregulation and malfunction in patients with systemic sclerosis (SSc) [1]. A variety of ANAs [2], including anti-centromere antibody, anti-topoisomerase I antibody, and anti-RNA polymerase III antibody, are associated with unique sets of disease manifestations and widely used in routine clinical practice for diagnosis, clinical subgrouping, risk stratification and prediction of future organ involvements and prognosis in SSc patients [3,4].

Objectives: This study aimed to investigate the clinical features of SSc patients with negative ANAs in a European League Against Rheumatism Scleroderma Trials and Research Group (EUSTAR) and Chinese Rheumatism Data Center (CRDC) multi-center cohort in China.

Methods: Patients were prospectively recruited between April 2008 and June 2019 based on the EUSTAR database and CRDC multi-center cohort from 154 clinical centers nationwide, all of whom fulfilled the 2013 ACR/EULAR classification criteria for systemic sclerosis. Antinuclear antibody testing result was intensively collected. Demographic, clinical, and laboratory data were compared between ANA-positive SSc patients and those with negative ANAs. T-test and chi-square analysis were performed in the comparisons.

Results: Antinuclear antibodies were detected in 2129 out of 2809 systemic sclerosis patients enrolled in the multi-center cohort and 4.2% of them were negative. There was significant difference between patients with negative and positive ANAs based on gender (29/60 vs 294/1746, $p<0.001$). The presence of Raynaud's phenomenon is less common (71.8% vs 99.8%, $p<0.001$) in the ANA-negative patients. In addition, compared with ANA-positive patients, the incidence of certain critical organ involvements, including gastroesophageal reflux (5.6% vs 18.5%, $p=0.002$), interstitial lung disease (65.2% vs 77.9%, $p=0.015$) and pulmonary arterial hypertension (11.5% vs 29.0%, $p=0.006$) were significantly lower in ANA-negative patients than in the positive group. The proportion of IgG elevation, an indicator of disease activity and severity of inflammation, was significantly lower in the ANA-negative patients than that in the positive group (14.3% vs 41.2%, $p<0.001$), while no significant differences were found in other inflammatory indicators and skin scores.

Conclusion: This study describes the clinical features of SSc patients with negative ANAs, which have been rarely mentioned or focused in existing studies. Antinuclear antibody is proved to be strongly associated with the clinical manifestations of systemic sclerosis patients and ANA-negative SSc patients tend to be in relatively milder conditions, including a less common involvement of critical organs and a more temperate inflammatory severity.

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SAT0327

SEXUAL DYSFUNCTION IN FEMALE SCLERODERMA PATIENTS AND ITS CORRELATION WITH VASCULAR INVOLVEMENT

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Background: Systemic Sclerosis (Scleroderma, SSc) is an autoimmune disorder characterized by multi-organ dysfunction, which ultimately leads to multiple clinical and psychological complications. Among various complications of scleroderma, sexual dysfunction can be named as a major issue in both male and female patients, which has great impact on quality of life of the patients.

Objectives: Investigating the sexual dysfunction in scleroderma patients and its relation to their vascular involvements.

Methods: A case control study was done on 80 married female scleroderma patients with age between 20-60 years old. Eighty normal individuals adjusted for age, place of living and socioeconomic status were also recruited. Sexual performance in both groups was assessed using FSFI standardized questionnaire, which evaluated it in 6 domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. Micro and macro-vascular involvements of the patients were also determined using Raynaud Condition Score, Echocardiography, physical exam for assessing their digital ulcers and reviewing their medical records for presence of past or present history of renal crisis and thromboembolic events.

Results: The total score of FSFI in the case group was significantly lower compared to control one (16.68 ± 6.35 , 19.69 ± 6.01 , $P\text{-value} <0.001$). The score was significantly lower in all domains of sexual dysfunction except for pain and lubrication. Moreover, the mean score of FSFI was also found to be significantly lower in limited form of the disease compared to diffuse one (14.6 ± 6.9 , 18.1 ± 5.5 , $P\text{-value} 0.01$). No significant association was found between vascular complications and sexual impairment of the scleroderma patients.

Conclusion: This study can be named as the first survey investigating the sexual dysfunction in Iranian female scleroderma patients and assessing its relation with vascular complication of the disease. Thus, it can be a guide for future

studies on sexual dysfunction especially in societies with cultural limitations in discussing this issue.

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SAT0328

OUTCOME OF INTERSTITIAL LUNG DISEASE (ILD) IN ANTI-PM/SCl PATIENTS WITH SYSTEMIC SCLEROSIS: RESULTS FROM AN EUSTAR CASE-CONTROL STUDY.

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Background: The main clinical associations of anti-PM/ScI in Systemic Sclerosis (SSc) so far reported include calcinosis, myositis and interstitial lung disease (ILD). Nevertheless, data regarding the long-term outcome of ILD in these patients are lacking. A single centre Spanish cohort reported a better functional outcome in 14 SSc-ILD patients anti-PM/ScI+ as compared to 49 anti-Topo I after a mean follow-up of 7 years (1).

Objectives: To analyze the long-term outcome of ILD in a large multicentre EUSTAR study dedicated to anti-PM/ScI SSc patients.

Methods: A case-control study within the EUSTAR cohort collected 165 anti-PM/ScI+ SSc cases and 257 anti-PM/ScI- SSc controls, matched for sex, cutaneous subset, disease duration, and age at onset. Data for ILD at HRCT were available for 162/165 cases and 249/257 controls. Data for pulmonary function tests (PFT) at the baseline (T0), 1 year after diagnosis (T1) and at the last visit (LV) were analyzed.

Results: A significantly higher frequency of ILD was reported in anti-PM/ScI+ cases vs anti-PM/ScI- controls (62.3% vs 39.4%, $p<0.0001$, OR 95%, CI 2.55, 1.70-3.83). Complete PFTs data were available for 81/101 ILD anti-PM/ScI+ cases and 78/98 anti-PM/ScI- ILD controls, with similar age at onset and female/male ratio and disease duration at LV (112 ± 81 months vs. 115 ± 64 months, $p=0.77$). Diffuse cutaneous involvement was less frequent in cases than in controls (27.2% vs. 44.9%, $p=0.03$).

In ILD cases, %FVC tended to improve from T0 (85.1 ± 18.3) to T1 (89.5 ± 16.5 , $p=0.045$) and to LV (87.9 ± 16.9 , $p=0.057$), while in ILD controls remained stable from T0 (90.4 ± 18.5) to T1 (91.1 ± 16.5 , $p=0.38$) and significantly declined to LV (85.0 ± 18.0 , $p=0.0002$). %DLCO remained stable from T0 (60.5 ± 16.8) to T1 (60.1 ± 17.6 , $p=0.87$) and to LV (60.4 ± 16.9 , $p=0.77$) in ILD cases, while significantly declined from T0 (67.0 ± 18.9) to T1 (62.7 ± 18.2 , $p=0.0016$) and to LV (59.6 ± 18.4 , $p<0.0001$) in the control group. Mean %FVC and %DLCO at the 3 time points were not significantly different between the two groups.

Delta %FVC (LV-T0) was 2.85 ± 11.3 for the anti-PM/ScI+ group vs -5.42 ± 13.4 in the control group ($p=0.0004$) with a significant smaller proportion of patients with FVC loss $\geq 10\%$ from T0 to LV in the anti-PM/ScI group (12.3% vs. 39.7%, $p=0.0001$). Delta %DLCO (LV-T0) was -0.13 ± 10.8 for the anti-PM/ScI+ group vs -7.38 ± 14.6 in the control group ($p=0.0015$), with a significant smaller proportion of patients with DLCO loss $\geq 10\%$ from T0 to LV in the anti-PM/ScI group (13.6% vs. 42.3%, $p<0.0001$).

Conclusion: In this multicenter real-life study, the long-term pulmonary functional outcome in SSc-ILD patients with anti-PM/ScI positivity seems to be more favorable than in patients without anti-PM/ScI antibodies.