(BDI-II), PROs assessing nutrition and fatigue], body composition was analyzed using densitometry (iDXA Lunar) and bioelectric impedance (BIA2000-M), and patients provided blood for routine laboratory analysis and biobanking. Normality of data was tested and inter-group analysis performed with 2-way ANOVA and intra-group analysis by Friedmann's test with Dunn's post hoc test.
Results: 27 IIM patients (22 female/5 male, 10 DM/12 PM/5 IMNM (immune mediated necrotizing myopathy), median of age 58.0 and disease duration 7.0 years) were recruited into the intervention group (IG) and 27 patients into the control group (CG) (24 female/3 male, 13 DM/12 PM/2 IMNM, median of age 56.5 and disease duration 4.7 years). Compared to observed statistically significant deterioration in CG over the period of months 0–6, we found statistically significant improvement in FI-2, MMT8, HAQ, BDI-II (Table 1). Only numerical improvement in IG compared to numerical deterioration in CG, which has not reached statistical significance, was observed in SF-36 and fatigue PROs.

Parameter (unit)	Intervention group Mean ± SEM	Control group Mean ± SEM	Intra-group analysis (Friedmann+Dunn)		Inter-group analysis (2WA)
			Interevention gr.	Control group	
MMT-8	m0: 54.7 ± 2.6	m0: 64.2 ± 2.3	m0-m3: p<0.001	m0-m3: p<0.01	p<0.0001
	m3: 60.7 ± 2.4	m3: 58.4 ± 2.0	m3-m6: p<0.01	m3-m6: p=NS	
	m6: 69.1 ± 1.9	m6: 55.3 ± 2.0	m0-m6: p<0.001	m0-m6: p<0.001	
FI-2 (%)	m0: 30.0 ± 4.4	m0: 40.2 ± 5.9	m0-m3: p<0.001	m0-m3: p=NS	p<0.0001
	m3: 46.9 ± 4.7	m3: 30.8 ± 4.9	m3-m6: p<0.001	m3-m6: p=NS	
	m6: 70.6 ± 4.9	m6: 28.7 ± 4.5	m0-m6: p<0.001	m0-m6: p<0.01	
HAQ	m0: 0.91 ± 0.16	m0: 1.25 ± 0.17	m0-m3: p=NS	m0-m3: p=NS	p=0.0012
	m3: 0.69 ± 0.14	m3: 1.33 ± 0.18	m3-m6: p=NS	m3-m6: p=NS	
	m6: 0.56 ± 0.11	m6: 1.27 ± 0.19	m0-m6: p<0.001	m0-m6: p=NS	
BDI-II	m0: 11.9 ± 2.1	m0: 13.3 ± 1.5	m0-m3: p=NS	m0-m3: p=NS	p=0.0186
	m3: 10.7 ± 1.7	m3: 15.2 ± 1.8	m3-m6: p=NS	m3-m6: p=NS	
	m6: 8.9 ± 1.5	m6: 14.6 ± 1.4	m0-m6: p<0.05	m0-m6: p=NS	

Acronyms: SEM, standard error of the mean; Friedmann, Friedmann's test; Dunn, Dunn's post hoc test; 2WA, two way ANOVA, MMT-8, Manual muscle test-8; FI-2, Functional index-2; HAQ, Health assessment questionnaire'BDI-II, Beck's depression inventory-II; m0, month 0 (= at the baseline); m3, month 3 (= in the middle of intervention period); m6, month 6 (= at the end of intervention); p, p-value; NS, not significant

Conclusions: Our intensive 24-week physiotherapy programme led to a significant improvement in muscle strength, endurance, function and depression, which was clinically meaningful in a substantial proportion of patients.
Acknowledgements: Supported by AZV-16–33574A.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4910

AB0654 AN ULTRASOUND ASSESSMENT OF THE HAND AND WRIST IN EGYPTIAN PATIENTS WITH SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc, scleroderma) is a systemic disease characterized by fibrosis, progressive vascular obliteration and the production of autoantibodies.Ultrasound (US) imaging has advantages of simplicity, low cost, noninvasiveness, real-time capability and portability compared with traditional EDX. US imaging also offers high temporal and spatial resolutions, and can potentially provide dynamic anatomical information regarding local structures and kinesiology, few studies evaluate joint and tendons involvement in SSc by US the incidence and abnormality are differs among studies
Objectives: describe and determine possible correlations between US abnormalities of hand and wrist and clinical findings in SSc Egyptian patients
Methods: Randomly selected 50 Egyptian SSc patients were enrolled in the study in outpatient clinic Rheumatology department, Assuit university hospital. Clinical examination and US evaluation (Gray Scale and Power Doppler (PD)) of the tendons and joints of hands and wrists, were performed bilaterally on both dorsal and palmar sides. Joint assessment was performed on all MCP and PIP joints as well as the wrist and tendon assessment included finger flexors and extensors, wrist extensors and flexors. The scoring for synovitis was based on the EULAR/ OMERACT scoring system
Results: Within the cohort, 100% of the patients were female; mean age and range disease duration were 40.93±11.71 (20–61) years and 8.13±5.56 (0.5–25)years, respectively. Modified Rodnan Skin Score mean and range were 23.17±9.14 (13–43), 22 patients were diffuse type (44%) and 28 patients were limited type (56%), 67% had inflammatory arthralgia as reported by patients. US examination revealed abnormalities in 76% of all cases. Synovitis was present in 74% of patients (22% wrist; 15% MCP/PIP, 63% both); with a grade 2 and 3 synovitis in 29% cases. The grade 2 or 3 synovitis was associated with a higher age ($p<0.05$) and disease duration ($p<0.03$) but not with inflammatory markers (CRP, ESR) and C3 nor with anti-CCP antibodies.
Furthermore, patients with US proven grade 2 or 3 synovitis had interstitial lung disease involvement (ILD) (74%) and elevated systolic pulmonary artery pressure >35 mmHg in (46%). Grade 1 synovitis did not correlate with tenderness or joint swelling. Synovitis using PD abnormalities were present in 20% patients, but only a 25% had concomitant clinical synovitis. Bone erosions (>1mm) were observed in 15%, which located at the second and third MC heads and at the styloid process of the ulna. The presence of bone erosions was associated with the presence of grade 2 or 3 synovitis. US identified tenosynovitis in 40% of patients, involving the wrist extensors in the vast majority of cases (70%), especially of the 2nd extensor compartment.
Conclusions: US examination detects significant synovitis of the hand and wrist in the absence of clinical findings, and reveals structural damage in a number of patients. The grade 2 or 3 synovitis was associated with a higher age, and ILD involvement. Tendon involvement is frequent with specific pattern of wrist extensors. Thus, US seems to be a valuable tool to identify subclinical joint manifestations in Egyptian SSc patients.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.1101

AB0655 ULTRASOUND B-LINES IN THE EVALUATION OF INTERSTITIAL LUNG DISEASE IN PATIENTS WITH SYSTEMIC SCLEROSIS: CUT-OFF POINT DEFINITION FOR THE PRESENCE OF PULMONARY FIBROSIS

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Background: Although in Systemic Sclerosis (SSc) the cutaneous manifestations are the most noticeable features, lung involvement guides the disease prognosis. High resolution computed tomography (HRCT) is the mainstay for the detection of the interstitial lung disease (ILD). However, exposure to ionising radiation is a major limitation for the repetition of this examination. Over the last years, lung ultrasound (US) gained an intriguing potential in the evaluation of several pulmonary condition, and in previous studies was found a significant correlation between US score and HRCT score [1].
Objectives: To establish the cut-off point of the US B-lines number for detecting the presence of SSc-ILD.
Methods: Patients with SSc-ILD underwent chest HRCT, lung US, pulmonary function test, and clinical assessment. Exclusion criteria were represented by the presence of a coexisting congestive heart failure and other lung or pleural diseases (i.e., pneumonia, pleural effusion). HRCT were scored for the presence of ILD by an experienced radiologist, in accordance with the Warrick method. US assessment was performed by a US skilled rheumatologist, blinded to the HRCT results, and included the bilateral evaluation of 14 lung intercostal spaces (LIS) [2]. In each LIS the number of B-lines was recorded and summed. To test discriminant validity we used the receiver operating characteristic (ROC) curve analysis applying a Warrick score of 7 as external criterion for the presence of SSc-ILD.
Results: Forty patients completed the study. The US B-lines number and the Warrick score confirmed an excellent correlation (Spearman's rho: 0.819, $p<0.001$). The ROC curve analysis revealed that the presence of 10 US B-lines is the cut-off point with the greatest positive likelihood ratio (12.52) for the presence of SSc-ILD (Table).

US B-lines number	Sensitivity	95% CI	Specificity	95% CI	+LR	95% CI	–LR	95% CI
≥2	100.00	87.2–100.0	0.00	0.0–24.7	1.00			
>2	100.00	87.2–100.0	15.38	1.9–45.4	1.18	0.3–4.2	0.00	
>3	100.00	87.2–100.0	46.15	19.2–74.9	1.86	1.0–3.3	0.00	
>4	100.00	87.2–100.0	61.54	31.6–86.1	2.60	1.7–4.0	0.00	
>5	100.00	87.2–100.0	69.23	38.6–90.9	3.25	2.3–4.7	0.00	
>8	100.00	87.2–100.0	76.92	46.2–95.0	4.33	3.2–5.8	0.00	
>9	96.30	81.0–99.9	84.62	54.6–98.1	6.26	4.9–8.0	0.044	0.004–0.4
>10	**96.30**	**81.0–99.9**	**92.31**	**64.0–99.8**	**12.52**	**10.5–14.9**	**0.040**	**0.003–0.6**
>11	92.59	75.7–99.1	92.31	64.0–99.8	12.04	10.0–14.6	0.080	0.008–0.8
>14	88.89	70.8–97.6	92.31	64.0–99.8	11.56	9.4–14.2	0.12	0.01–1.0
>15	85.19	66.3–95.8	92.31	64.0–99.8	11.07	8.9–13.8	0.16	0.02–1.3
>16	81.48	61.9–93.7	92.31	64.0–99.8	10.59	8.3–13.4	0.20	0.03–1.5
>19	70.37	49.8–86.2	92.31	64.0–99.8	9.15	6.8–12.2	0.32	0.04–2.3
>20	59.26	38.8–77.6	92.31	64.0–99.8	7.70	5.4–10.9	0.44	0.06–3.1
>21	55.56	35.3–74.5	92.31	64.0–99.8	7.22	5.0–10.5	0.48	0.07–3.3
>22	51.85	31.9–71.3	92.31	64.0–99.8	6.74	4.5–10.0	0.52	0.08–3.6

Conclusions: The detection of 10 B-lines is highly predictive for the HRCT presence of SSc-ILD. In SSc patients, a lung US follow-up can optimize the employment of chest HRCT.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6828

AB0656 NAILFOLD VIDEOCAPILLAROSCOPY FEATURES OF PATIENTS WITH ANTISYNTHETASE SYNDROME

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Background: Antisynthetase syndrome (ASSD) is an autoimmune disease characterized by the clinical triad arthritis, myositis, and interstitial lung disease (ILD). As in inflammatory myopathies, nailfold videocapillaroscopy (NVC) alterations have been sporadically described also in ASSD patients, but no elucidating data are available.
Objectives: To investigate the possible specific NVC features of ASSD patients.
Methods: Within the framework of a multicenter study, we retrospectively analyzed NVC images of ASSD patients, after excluding patients with overlap syndrome with systemic sclerosis. Two operators in a blind manner re-evaluated all

patients with at least one image per finger. For each patient, we examined number of capillaries (mean number of capillaries per mm in the distal row), enlarged and giant capillaries, micro-hemorrhages, avascular areas, ramified capillaries, and the presence of a scleroderma (SSc)-like pattern, according to Manfredi et al. Finally, we correlated NVC features with clinical and serological findings of ASSD patients.
Results: The NVC of 54 ASSD patients were analyzed (males/females 1/6.8, mean age 55.79, CI95% 51.9–59.9 years, mean disease duration 59.4, CI95% 27.9–90.9 months). Raynaud's phenomenon (RP) was recorded in 51.9% of patients, arthritis in 79.6%, myositis in 53.7%, and ILD in 92.6%. NVC alterations were observed in 53.7% of AASD patients. Nineteen patients (35.2%) showed a SSc-like pattern; the main features were disarrangement of hairpin and angiogenetic aspects (42.6%), avascular areas (38.9%), giant capillaries (27.6%), and microhemorrhages (20.4%). Finally, the mean number of capillaries was reduced (7.8±2/mm). No significant association was recorded between SSc-like pattern and the presence of arthritis, myositis, and ILD, nor with RP. Among other NVC features, angiogenesis was significantly associated to female gender (p=0.031), while microhemorrhages were inversely associated to the presence of arthritis (0.033). No association was observed between NVC features and autoantibodies profile. Of interest, in 58% of patients with ILD we observed at least a NVC alteration vs no patients without ILD (p=0.04). Finally, in patients with RP NVC alterations were recorded in 15/28 patients (53.6%) and a SSc-like pattern in 11/28 (39.3%), while only 57.9% of patients with SSc-like pattern had a clinically manifest Raynaud's phenomenon.
Conclusions: Despite preliminary, the present is the first study concerning NVC in AASD patients. Regardless of the presence of Raynaud's phenomenon, NVC alterations are frequently observed; in particular, a SSc-like pattern is recorded in more than 1/3 of patients. NVC should be performed in all ASSD patients at diagnosis regardless of the presence of RP in the patient history and during follow-up. ASSD should be always considered in the screening of RP. A prospective multicenter study has been planned to identify specific patterns and possible associations between NVC findings and clinical and serological features of ASSD.
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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.5376

AB0657 SMALL INTESTINAL BACTERIAL OVERGROWTH IN RELATION TO GASTROINTESTINAL SYMPTOMS IN SYSTEMIC SCLEROSIS

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Background: Autonomic dysfunction, smooth muscle fibrosis and vascular damage lead to small intestinal bacterial overgrowth (SIBO) in Systemic Sclerosis (SSc). SIBO is characterized by diarrhea, abdominal pain, bloating, malabsorption and malnutrition.
Objectives: To evaluate by NIH PROMIS® gastrointestinal symptoms scales and SIBO by hydrogen breath test (HBT) in patients with SSc.
Methods: We include 68 patients with SSc (ACR-EULAR 2015) who signed informed consent. NIH PROMIS®questionarie was applied to evaluated gastrointestinal symptoms and classified in not symptomatic, least, mildy, moderately and most symptomatic. Glucose HBT was applied after 14 hours fast, oral hygiene and 30 days free of antibiotics. Patients who has a negative HBT with symptoms associated to glucose ingestion we repeat test with lactulose.
Results: We applied questionnaire to 58 SSc patients, age 52 (26–75)years, 65 (96%) female and 3 (4%) males, disease duration 13 (1–40) years, limited SSc 41 (59%) and diffuse 27 (41%), body mass index 24 (12–39).
They are using prednisone (28%), micofenolate (14%), methotrexate (19%), azatioprin (5%), amlodipine or nifedipine (33%). Patients had continuous and very high increase of parts per millon (ppm) of exhaled Hydrogen: min0: 13 ppm (5–21), min15:17 ppm (5–43), min30:17 (3–49), min45:18ppm (7–103), min 60:22ppm (8–145), min90:18ppm (2–250), min120:25ppm (3–212), min150:71ppm (3–235). Normal values: <10 ppm during total test (Figure1).
Frequency of gastrointestinal symptoms were flatulence (87.5vs81.2%), nausea/vomiting (72.7vs37.6%), constipation (65.6vs40%), diarrhea (45.2vs33.4%), abdominal pain %) and incontinence (39.4vs31.3%) respectively between SCB (+) positive and negative.
Hyperproduction of hydrogen in breath had a direct correlation to severity of their symptoms ($p \leq 0.05$). The severity of diarrhea was in close relation to the severity of its rectal incontinence (r=0.73,p=0.001), and greater abdominal pain with flatulence (r=72, p=0.001).
Conclusions: Gastrointestinal symptoms are common in SSc regardless of whether they have SIBO. However, a higher Row Score SGI or moderate severe status (NIH PROMIS) correlates with high H scores from the 30th minute, therefore, the questionnaire is useful within the SSc assessment.

Spearman Correlation Row Score(NIH PROMIS) with ppm H+ Test of SIBO		overgrowth (SIBO)				
		Negative		Positive		
		n=24	%	n=44	%	p
Nausea and vomiting r=0.28*min45,0.29*min60,0.43*min90,0.49*min120,0.46*min150	Asymptomatic	5	9.8%	2	3.9%	
	Least	2	3.9%	2	3.9%	
	Mild	3	5.9%	6	11.8%	0.13
	Moderate	3	5.9%	7	13.7%	
	Severe	4	7.8%	17	33.3%	
Diarrhea, r=0.43*min120	Asymptomatic	3	5.9%	10	19.6%	
	Least	3	5.9%	3	5.9%	
	Mild	5	9.8%	6	11.8%	0.34
	Moderate	5	9.8%	7	13.7%	
	Severe	1	2.0%	8	15.7%	
Constipation r=0.41*min90, 0.47*min120, 0.043*min150	Asymptomatic	0	0.0%	4	8.2%	
	Least	2	4.1%	1	2.0%	
	Mild	8	16.3%	6	12.2%	0.05
	Moderate	2	4.1%	11	22.4%	
	Severe	4	8.2%	11	22.4%	
Abdominal pain r=0.32*m120	Asymptomatic	1	2.0%	0	0.0%	
	Least	7	13.7%	9	17.6%	
	Mild	6	11.8%	8	15.7%	0.16
	Moderate	1	2.0%	4	7.8%	
	Severe	2	3.9%	13	25.5%	
Distension r=0.36*m0,0.35*min15, 0.3*min45,0.37*min60, 0.386*min90,0.36*min120	Asymptomatic	1	2.0%	1	2.0%	
	Least	2	4.0%	1	2.0%	
	Mild	1	2.0%	2	4.0%	0.08
	Moderate	8	16.0%	6	12.0%	
	Severe	5	10.0%	23	46.0%	
Incontinence r=0.28*min45, 0.37*min120	Asymptomatic	8	15.7%	17	33.3%	
	Least	0	0.0%	0	0.0%	
	Mild	5	9.8%	3	5.9%	0.24
	Moderate	2	3.9%	8	15.7%	
	Severe	2	3.9%	6	11.8%	
* p<0.05						

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6824

AB0658 FACTORS INFLUENCING ELAPSED TIME TO A DEFINITIVE DIAGNOSIS OF SYSTEMIC SCLEROSIS AND THEIR RELATIONSHIP WITH THE NUMBER OF ATTENDING PHYSICIANS AND THEIR MEDICAL SPECIALIZATION

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Background: The diagnosis of Systemic Sclerosis (SSc) can be difficult due to its rarity and heterogeneity. In addition, not all physicians are expert in the identification of patients with early SSc features.
Objectives: The aim of this study was to investigate factors influencing the time elapsed since a proper diagnosis of SSc and their relationship with the number of attending physicians and their specialization, among Turkish patients. In Turkish healthcare system,each patient may directly go to the hospitals and choose appropriate care facility and physician.
Methods: The study covers 240 SSc patients who were diagnosed according to 1980 ACR criteria in the rheumatology database at the University of Dokuz Eylul, Izmir. Data included demographics, SSc duration, SSc subtype, physical examinations (mRodnan Score-mRS), and a face-to-face structured interview. Cases were excluded if they couldn't recall date of initial symptoms and all the prior attending physicians including their specialization until a definitive diagnosis of SSc. As clinical characteristics are different than pure SSc patients, overlap syndromes were excluded. Mann-Whitney U test was used to assess the difference between dependent and independent variables. The association between mRS and dependent variables was evaluated by Spearman correlation test.
Results: Remaining 135 patients (F:88.8%), mean age±SD (52.14±11.58 years) identified. 55 (41%) patients had diffuse and 80 (59%) patients had limited disease. 119 (88%) patients SSc diagnosed by a rheumatologist however, 48 patients (35%) were first seen by an internist. Median time to diagnosis was 36 months (1–588) from the onset of Raynaud Phenomenon (RF) and 11 months (0–397) from the onset of the first non-RF symptom for our cases. Relation between some parameters and time to diagnosis were shown in Table.1. Mean number of attending physicians until SSc diagnosis was calculated as 3,54 (SD±1,66). None of the demographic and clinical parameteres (SSc subtype, mRS, symptom duration) were related with the number of attending physician. There was no correlation detected between mRS and time to diagnosis and number of attending physicians. Nevertheless it was established that median number of physicians was less for patients who were referred to a proper clinician by their familier healthcare practitioners (p: 0,019).