sensitivity 0.81 (95% C.I. 0.68 to 0.92); specificity 0.66 (95% C.I. 0.52 to 0.80). Out of the 44 ILD negative patients, 22 (50%) presented a CII value lower than the cut-off, and 13 of them (59%) were found to have a diffusing lung capacity for CO (DLCO)<80% of predicted. At 1 year FU, the CII was significantly correlated with total lung capacity -TLC ($r=0.45$, $p=0.004$) and DLCO ($r=0.29$, $p=0.045$). Out of the 22 patients with a CII <0.1966 but no ILD at visual evaluation, 11 (50%) developed a FVC decline at 1 year, and 8 (36.7%) a DLCO decline.

Conclusions: Here we confirm that quantitative computer-assisted CT of the lungs could be a reliable method for SSC-ILD evaluation and found that it could also be useful in predicting the evolution of lung function in the short-term FU.

Disclosure of Interest: None declared

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FRI0464

CLINICAL MANIFESTATIONS OF PERSISTENT ANTIPHOSPHOLIPID ANTIBODIES IN SYSTEMIC SCLEROSIS PATIENTS

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Background: Antiphospholipid antibodies (aPL) can be detected in systemic sclerosis (SSc) patients. While their clinical signification is well known in the primary antiphospholipid syndrome (APS), their frequency and clinical association remain debated matter of issue. In a previous study, we reported the prevalence and their clinical association of a single aPL testing a French cohort of SSc patients. Yet, the persistence of aPL during follow-up of patients has never been assessed.

Objectives: This study aimed to assess i. the persistence of aPL at least 12 weeks after the first dosage and ii. the clinical associations.

Methods: At least 12 weeks apart after the first test, 213 SSc patients were consecutively tested for lupus anticoagulant (LA), anticardiolipin (aCL) and anti-β2glycoprotein 1 (anti-β2Gp1) antibodies. aCL and anti-β2Gp1 were measured using commercial ELISA assays (Orgentec, Trappes, France), positivity was defined as ≥ 10 UGPL/mL (aCL) or ≥ 10 UA/mL (anti-β2Gp1). Clinical associations were studied using binomial logistic regressions.

Results: The mean time between two tests was 13.2 ± 6.3 months. One or more type of aPL was persistent in 7 patients (3%). Patients with persistent aPL developed more frequently venous thrombosis (VT) [4/7 (57%) versus 23/205 (11%), $p=0.006$]. Arterial or/and venous thrombosis were more common in patients with persistent aPL than other patients [4/7 (57%) versus 33/205 (16%), $p<0.001$]. Persistent aPL was also associated with miscarriages [4/6 (67%) versus 33/155 (21%), $p=0.023$].

Association between aPL positivity persistence and clinical manifestations

	aPL positivity	aPL negativity	p
Arterial or venous thrombosis	4 (57.1%)	33 (16.1%)	<0.001
Venous thrombosis	4 (57.1%)	23 (11.2%)	0.006
Arterial thrombosis	1 (14.3%)	14 (6.8%)	0.406
Miscarriage	4 (66.7%)	32 (20.6%)	0.023
Digital ulceration	0 (0%)	40 (19.8%)	0.351
PAH	1 (14.3%)	13 (6.7%)	0.402

Conclusions: The prevalence of persistent aPL in our cohort was 3%. VT and miscarriages were associated with persistent aPL.

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FRI0465

QUANTITATIVE ASSESSMENT OF INTERSTITIAL LUNG DISEASE IN IDIOPATHIC INFLAMMATORY MYOPATHIES: VISUAL SCORE AND COMPUTERISED PROCESSING ANALYSIS OF HIGH RESOLUTION COMPUTERISED TOMOGRAPHY

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Background: High resolution computed tomography (HRCT) is an essential technique for the characterisation of interstitial lung disease (ILD) in patients with idiopathic inflammatory myopathies (IIM). Although several visual scores are available for a semiquantitative evaluation of ILD, an automatic quantitative analysis of lung involvement may represent a valuable improvement to reproducibly determine the extent of the disease.

Objectives: To compare the semiquantitative visual score to a volumetric texture and local volumetric histogram feature-based analysis software (CALLIPER) to quantify the lung involvement in IIM patients.

Methods: 21 consecutive IIM patients (Bohan and Peter criteria) who underwent a HRCT between November 2016 and November 2017 were prospectively enrolled. Twelve were affected by polymyositis and 9 by dermatomyositis. We collected smoking habits data and myositis specific autoantibodies positivity, respiratory symptoms according to MRC dyspnea scale and two patients reported outcome questionnaires: Leicester cough questionnaire (LCQ) and St. George's Respiratory questionnaire (SGRQ). Patients underwent a non-contrast, supine, volumetric CT (≤ 2 mm slice thickness) that was evaluated by an expert radiologist according to Warrick's score (WS) and also quantified by CALLIPER (Mayo Biomedical Imaging Resource – USA). CALLIPER analysis of the extent of interstitial lung abnormalities (ground glass, lung reticulation, honeycombing) was performed and a total score, expressed as percentage of lung involved (ILD%), was obtained. Analysis of the vascular involvement were performed as percent of pulmonary vessel volume (VESS%).

Results: Between the 21 patients, five (23.8%) were smokers. Four patients were positive for anti-synthetase autoantibodies -ASS (3 Jo-1, 1 PL-7), 1 SRP, 1 Mi2. Dyspnea was present in 19 patients (90%): 9 grade 1, 7 grade 2, 3 grade 3 according to MRC scale. There were strict correlations between WS and ILD ($r=0.802$ $p<0.001$) and VESS% ($r=0.746$ $p<0.001$). LCQ score was negative correlated to WS ($r=-0.728$ $p=0.007$) but the correlations were stricter with ILD score ($r=-0.868$ $p<0.001$) and VESS% ($r=-0.801$ $p<0.002$). SGRQ did not correlate both to WS and CALLIPER parameters. Patients with ASS have higher ILD and VESS% compared to seronegative patients (respectively $p=0.003$ and $p=0.006$).

Conclusions: CALLIPER represents an innovative technique to quantify the lung involvement in IIM patients: the main advantage of CALLIPER is the reproducibility that avoids the inter and intra-reader bias. Although more data are needed in larger cohorts, the use of CALLIPER may open new routes for the evaluation of ILD in IIM patients, both in medical practice and in randomised controlled trials.

Disclosure of Interest: None declared

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FRI0466

ARTICULAR AFFECTON IN SYSTEMIC SCLEROSIS: CORRELATION OF ULTRASOUND FINDINGS WITH CLINICAL, BIOLOGICAL AND RADIOGRAPHICAL FINDINGS

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Objectives: To evaluate the prevalence of subclinical synovitis in systemic sclerosis (SS), as well as the correlation of sonographic findings in hands with radiographs and with clinical-analytical parameters. In addition, the correlation with scales of functionality will be determined.

Methods: Cross-sectional observational-analytical study that included 40 patients with ES and 23 patients with rheumatoid arthritis (RA) as a control group during the period 10/2015–03/2016. Clinical, analytical, immunological, ultrasound and the radiological characteristics of both groups and their respective statistical correlations were compiled.

Results: The mean age of the group with SS was 53.3 ± 14.1 years; 87.5% were women and 75% of the cases were cutaneously limited. The average time of evolution of the disease was 6.8 years from the diagnosis. Regarding the clinical joint involvement in the carpus and hands, frank arthritis was present in 16 cases (40%), with an average of DAN: 3.77 and TAN: 1.57; with an average of EVA global pain: 30/100 and elevated CRP in 42.5% of cases. The prevalence of subclinical synovitis with ultrasound expression of synovial effusion $\pm$ synovial hypertrophy in the SS group was at carpal level (77%), FCM (60%), PFI 32.5%) and DFI (15%). The statistical linear correlation between findings of carpal erosions at the ultrasound level versus the radiological data was positive only in the involvement at the joint level FCM and FID. In the group with SS, the HAQ questionnaire

had an average of 0.95 (mild disability) versus 0.77 in the RA group, and the average hand function score or Cochin index: 20.6 (moderate disability) against 17.5 of the RA group. There was no statistically significant correlation (χ^2) between the elevated CRP values and these 2 questionnaires in the SS group. The radiological findings of calcinosis and acroosteolysis in the group with SS were double the cases of the group with RA (7 versus 3, and 14 versus 7 respectively).

Conclusions: Subclinical joint involvement in systemic sclerosis had a high prevalence, similar in rheumatoid arthritis, with ultrasound being a fundamental test when evaluating subclinical inflammatory activity. It also presents an important correlation with the findings found in radiographs in the same locations.

Disclosure of Interest: None declared

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FRI0467

THE RELATIONSHIP BETWEEN ^{99m}Tc-PERTHNETATE HAND PERFUSION SCINTIGRAPHY AND NAILFOLD CAPILLOSCOPY IN SYSTEMIC SCLEROSIS PATIENTS: A PILOT STUDY

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Background: The aim of this study was to assess possible relationship between the altered blood perfusion at hands analysed by ^{99m}Tc-pertechnetate hand perfusion scintigraphy (^{99m}TcPHPS) and, morphological microvascular abnormalities detected by nailfold capillaroscopy (NC) in SSc patients.

Methods: The study group consisted of 25 patients with SSc (14 with diffuse SSc, and 11 with limited SSc) and 28 control subjects (18 patients with primary RP, and 10 healthy individuals). NC and ^{99m}TcPHPS was performed in all the groups examined. The capillaroscopic pattern was classified as normal or scleroderma ("early", "active", or "late") pattern. Gamma-camera dynamic first-pass study during the first 60 s and a static scintigraphy after 5 min were recorded following a bolus injection of ^{99m}Tc-pertechnetate via a cubital vein. Regions of interest were drawn on the summed images around the fingers and the palmar region. The fingers-to-palm ratios were then calculated.

Results: SSc patients showed a significantly lower blood flow (BF) and blood pool (BP), (0.43 ± 0.21 vs 0.36 ± 0.07 , respectively), than PRP patients (0.45 ± 0.18 vs 0.42 ± 0.06 , respectively) and healthy subjects (0.58 ± 0.19 vs 0.44 ± 0.06 , respectively), (p-value 0.039 vs 0.004, respectively). A gradual decrease of BF and BP was found in SSc patients with progressive severity of NVC patterns of microangiopathy ["early" (0.49 ± 0.03 vs 0.39 ± 0.04 , respectively), "active" (0.43 ± 0.11 vs 0.38 ± 0.06 , respectively) or "late" (0.40 ± 0.28 vs 0.36 ± 0.08 , respectively), (p-value 0.462 vs 0.728 respectively), but these differences were not statistically significant. Patients with diffuse SSc showed lower BF, and higher BP (0.42 ± 0.26 vs 0.37 ± 0.07 , respectively) than those with limited SSc, (0.44 ± 0.14 vs 0.35 ± 0.064 , respectively), but this differences is not statistical significantly (p=0.76 vs p=0.53, respectively). There was no significant correlation between BF and BP values and type of SSc (limited or diffuse) ($r=-0.06$, p=0.77; $r=0.13$, p=0.54, respectively) as well as three microangiopathy patterns ($r=-0.253$, p=0.22; $r=-0.13$, p=0.54, respectively).

Conclusions: NC represents the best method to analyse microvascular damage in rheumatic diseases, especially SSc. ^{99m}TcPHPS improves the evaluation of vascular damage in SSc patients. There is no direct relationship between these two methods, but one method complements another in the study of vascular damage in SSc patients.

Disclosure of Interest: None declared

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FRI0468

ABNORMAL OESOPHAGEAL MOTILITY DURING A SOLID TEST MEAL IN SYSTEMIC SCLEROSIS – DETECTION IN VERY EARLY DISEASE AND ASSOCIATION WITH DISEASE PROGRESSION

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Background: Ineffective oesophageal motility (IEM) is frequent in patients with systemic sclerosis (SSc). High-resolution oesophageal manometry (HRM) is the reference standard test for oesophageal motility and addition of a test meal increases diagnostic sensitivity and specificity.

Objectives: This study assessed whether using a test meal instead of standard water swallow in HRM increases sensitivity and can detect clinically relevant, abnormal motility in already very early SSc and whether this finding is associated with subsequent disease progression.

Methods: This prospective, longitudinal cohort study recruited 68 consecutive SSc patients (group #1: 32 established disease (ACR/EULAR 2013 and ACR 1980 criteria fulfilled); group #2: 24 early disease (only ACR/EULAR 2013 fulfilled); group #3: 12 very early disease (clinical expert diagnosis of SSc, no classification criteria fulfilled) and 72 healthy controls. HRM evaluated oesophageal motility for water swallows and a solid test meal using validated methods.

Results: SSc patients had less frequent effective oesophageal contractions during the test meal compared to healthy controls. Notably, this was detected even in very early disease (0.15, 1.0, 2.1/min for group #1, #2 and #3, vs. 2.5/min in health, p<0.001; p<0.001 and p<0.009, respectively). No other significant abnormality on HRM was found in patients with very early disease (group 1). Ineffective motility at HRM was associated with a higher modified Rodnan skin score at baseline. Moreover, at mean 18¹⁰⁻³¹ months follow-up, the presence of ineffective motility at baseline was associated with progression of skin disease for the overall SSc cohort (p<0.010). In a secondary analysis, below-average lower oesophageal sphincter pressure was associated with progression of skin disease and organ disease, in particular interstitial lung disease (p<0.009).

Key HRM findings in SSc patients and healthy volunteers.

A: Percentage of effective swallows in the test meal. **B:** Number effective swallows per min in the test meal. **C:** Number pharyngeal swallows per min in the test meal. **D:** Vigour of peristalsis (DCI) in standard HRM. Median (red bar) and IQR (error bars) are indicated. Please, note the significant decrease in effective swallows per minute which in patients with very-early disease, which is only observed for the test meal. Statistical analysis: Mann-Whitney U test. * p<0.05, ** p<0.01, *** p<0.001.

Conclusions: Ineffective motility during a test meal is present already in patients with very early SSc. In cross-sectional analysis, findings on HRM studies at baseline are associated with disease severity and prospectively with progression of