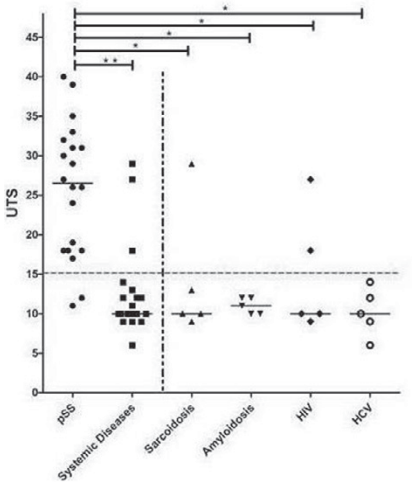
specificity of 85%, positive predictive value of 86%, negative predictive value of 89% and diagnostic odds ratio of 51. UTS was positive in 2 patients with HIV infection and one patient with sarcoidosis. Patients with pSS had significantly higher UTS than patients with systemic diseases (median UTS 27 vs. 10, $p<0.001$) and patients of the various subgroups ($p<0.05$; Fig).

Figure: UTS in patient (sub)groups. ** p<0.001, * p<0.05. Black horizontal lines indicate median values. The intermittent horizontal line shows the cut-off point. The intermittent black vertical line separates the two major patient groups (pSS vs. systemic diseases) from the subgroups of patients with sarcoidosis, amyloidosis, HIV and HCV infection.



Conclusions: This pilot study indicates that SGUS has a high diagnostic accuracy to discriminate pSS from associated systemic diseases with salivary gland involvement. A minority of HIV and sarcoidosis patients, however, may show SGUS findings mimicking pSS.

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SAT0618 DISTURBANCES OF THE ACRAL PERFUSION DETECTED BY FLUORESCENCE OPTICAL IMAGING ARE ASSOCIATED WITH THE DEVELOPMENT OF ISCHEMIC COMPLICATIONS IN PATIENTS WITH SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a condition causing an impaired microcirculation with the risk of ischemic complications such as digital ulcers and pitting scars (DU/PS). Fluorescence optical imaging (FOI) is an imaging method that detects enhanced microcirculation as a sign of joint inflammation in both hands of patients with rheumatoid arthritis and other arthritides [1, 2]. FOI's impact to record disturbed microcirculation in the hands of patients with systemic sclerosis has not yet been sufficiently investigated.

Objectives: To find associations of disturbed microcirculation initially detected by FOI and the development of new DU/PS throughout a follow-up of 12 months.

Methods: Sixty-three patients with SSc were included and received FOI examination following the Xiralite-System guidelines (ICG 0.1mg/kg BW i.v.; 6 minute duration) as well as capillaroscopy at baseline. After a mean follow-up time of 12 months (min-max: 8–20 months), all participants were followed regarding the development of new ulcers and pitting scars.

Results: A disruption of microcirculation in FOI was defined as a lack of a sufficient fluorescent signal in at least one fingertip over the entire course of the examination and was found in 11 of 63 SSc patients. All patients had a history of DU/PS and frequently presented with a *late pattern* capillaroscopy (9 out of 11) at baseline. Fingers with a disrupted microcirculation also showed a reduced capillary density to a greater extend (96.0%) than fingers with a sufficient signal in FOI (76.0%; p=0.0241).

30 of 60 patients developed digital ulcers or pitting scars during follow up (3 drop outs due to death (n=2) or withdrawal). 81.8% of patients with a disturbed microcirculation in FOI developed these complications during follow-up compared with 42.9% of patients without a disruption in FOI (p=0.0419; OR=6.0 [95% CI 1.2 - 30.7]). A disruption of microcirculation especially increased the risk of developing DU/PS in the same finger: 20.1% of fingers with normal, but 65.4% with a missing FOI signal in the fingertip presented with an ischemic complication during follow-up ($p<0.0001$; OR=7.5 [95% CI 3.3 - 17.3]).

Conclusions: Fluorescence optical imaging can reveal an impaired microcirculation in patients with systemic sclerosis, which is associated with microangiopathic changes as seen in capillaroscopy as well as the subsequent development of digital ulcers and pitting scars. Therefore, FOI might help to identify patients at risk for these complications.

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SAT0619 ANKLE EVALUATION IN ACTIVE RHEUMATOID ARTHRITIS BY ULTRASOUND: A CROSS SECTIONAL STUDY

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Background: Ankle joint evaluation is underestimated in many clinical and sonographic scores used for evaluation and follow-up of rheumatoid arthritis (RA) patients. Moreover, sonographic scores which included the ankle joint had no agreement on examination parameters. More effort is needed to detect the value of the ankle joint examination in RA and also a description of the earliest and the most frequent ultrasonographic signs that should be considered in ankle assessment (1).

Objectives: detection of ankle affection by ultrasound (US) in active RA and correlate this finding with disease duration, DAS28-ESR 28 score and rheumatoid factor (RF).

Methods: 126 ankle joints and tendons of 63 active RA patients, aged above 18 years old were included in the study. US examination was done to the tibiotalar and talonavicular joints for synovitis and/or effusion on Greyscale (GS) mode and power doppler (PD). The anterior, lateral and posterior ankle tendons were examined for tenosynovitis and tendinosis.

Results: The mean age and ± standard deviation were 35.1±8.3 with the female-to-male ratio 2:1. The mean disease duration was 22.7±9.6 months. The mean DAS28-ESR 28 score was 3.05±0.66. The most frequent pathologies detected were tenosynovitis of the flexor, extensor or peroneal tendons (found in 30.2% of the affected ankles); followed by synovitis of the tibiotalar and talonavicular joints (18.3%); next was erosion (8.7%) and lastly tendinosis (4%). The earliest sonographic signs were tenosynovitis, followed by synovitis, erosion, and lastly tendinosis.

Conclusions: It can be stated that ankle evaluation should be considered more in RA assessment. The tibialis anterior and posterior tendons, the tibiotalar and talonavicular joints were the commonest and most frequent sites to be involved in the ankle. Tenosynovitis appears earlier than synovitis. DAS28-ESR score was correlated to synovitis and tenosynovitis but not to erosion. Bilaterality and erosion were correlated with disease duration. RF positivity has a positive correlation with positive US findings in the ankle region.

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SAT0620 POTENTIAL ROLE OF METACARPOPHALANGEAL JOINTS ULTRASOUND IN THE DIFFERENTIAL DIAGNOSIS BETWEEN EARLY RHEUMATOID ARTHRITIS AND EARLY SPONDYLOARTHRITIS

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Background: Several studies have demonstrated that musculoskeletal ultrasound (MSUS) is more sensitive in diagnosing arthritis when compared to clinical examination, although, as underlined in a recent review, still remains controversial whether it can improve substantial discriminatory value in an early arthritis (EA) setting.(1) In 2011 Gutierrez M. et al. published preliminary data on high frequency of peritenon extensor tendon inflammation in Psoriatic arthritis (PsA) patients, suggesting a relevant potential role for US in differential diagnosis between Rheumatoid Arthritis (RA) and PsA at metacarpophalangeal (MCP) joints level and recommending additional research in order to confirm these data.(2)

Objectives: To compare MSUS findings between early RA and early Spondyloarthritis (SpA) patients at MCP joints level.

Methods: From a consenting cohort of EA patients presenting to our Rheuma-

tology Department, we retrospectively selected 35 patients that within one year from the first visit had a defined diagnosis of RA (according with the 2010 ACR/EULAR criteria) or of axial/peripheral SpA (according with the 2009 ASAS criteria). Demographic, clinical parameters and MCPs' MSUS assessment at baseline were recorded during the patients' first EA clinic visit by an experienced Rheumatologist and by a blinded skilled sonographer. ESAOTE MyLAB 70 with 6–18 MHz linear array transducer was used for all patients scanning and US were scored according with OMERACT guidelines.

Results: MSUS data of twenty RA patients (17 F – 3 M; median age of 59 yrs with range 35–83 yrs, median time for defined diagnosis of 2,4 months with range 1–11 months) and 15 SpA patients (9F–6M; median age of 53 yrs with range 18–78 yrs, median time for defined diagnosis of 1,7 months with range 1–8 months) were retrospectively analyzed. At the first EA clinic visit, all patients showed at least one joint with synovial fluid and/or synovial hypertrophy in Grey scale (GS) with a score >1 and no statistically significant differences were found in the percentage of patients that presented at least one joint with power Doppler (PD) positivity (55% RA Vs 53% SpA,p=0,92) and that presented PD positivity tenosynovitis of the flexor tendons in at least one finger (10% RA Vs 33% SpA, p=0,08). A statistically significant difference was found in the percentage of patients with erosions in at least one MCP (25% RA Vs 0% SpA, p=0,036) and in the percentage of patients with PD positive paratenonitis of the extensor tendons in at least one finger (30% RA Vs 80% SpA pts, p=0,003).

Conclusions: Early RA patients showed a statistically higher percentage of erosions at MCPs' MSUS evaluation of the first visit of the EA clinic, when compared with early SpA group and early SpA patients presented at the level of the extensor tendons an higher percentage of PD positive paratenonitis when compared with the early RA group.

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SAT0621 AGREEMENT BETWEEN SEMIQUANTITATIVE AND QUANTITATIVE DOPPLER SCORING SYSTEMS FOR THE ASSESSMENT OF SYNOVIAL PATHOLOGICAL VASCULARIZATION IN RHEUMATOID ARTHRITIS

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Objectives: To compare power Doppler (PD) vs colour Doppler (CD) semiquantitative and quantitative scoring of synovial vascularization (RA) and to evaluate the relationship between semiquantitative and quantitative scores in patients with rheumatoid arthritis (RA).

Methods: One hundred RA patients underwent B-mode, PD, and CD assessments of 12 joints at two European centres. Each joint with synovial hypertrophy detected on B-mode was semiquantitatively scored (0–3) for PD (SPD score) and CD (SCD score) synovial signal. PD and CD synovial signal were also quantitatively scored (0–100%) (QPD and QCD scores, respectively) using a software for counting the colour fraction.

Results: We found SH in 184 joints. SPD and SCD agreed in 92.3% (95% CI: 88.4; 96.2%) of paired scores, with Kendall rank correlation coefficient tau-b=0.95. Significant differences between marginal distributions of SPD and SCD were not found (p=0.565). QPD and QCD scores were highly correlated (Pearson's coefficient=0.70) but Blamd-Altman plot showed insufficient agreement, being the QCD scores systematically slightly higher than the QPD scores. The distribution of QPD and QCD values between SPD and SCD scores, respectively, showed significant differences between grade 0 and grade 1 ($p<0.001$), and grade 2 and grade 3 (p=0.042 and p=0.007, respectively) but not between grade 1 and 2 (p=0.154 and p=0.150, respectively).

Conclusions: SPD and SCD scores were concordant and QPD and QCD scores highly correlated although were not concordant. There was consistency between SPD and SCD moderate and severe scores and QPD and QCD scores. There was an overlapping between SPD and SCD mild and moderate scores regarding QPD and QCD scores.

Disclosure of Interest: None declared

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SAT0622 MULTICENTER 14-3-3ETA BIOMARKER REPRODUCIBILITY; THE JAPANESE EXPERIENCE

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Background: The soluble biomarker sub-committee of OMERACT has published validation criteria for biomarkers reflecting structural damage end-points. Within these, categories of Discrimination and Feasibility relate to assay reproducibility and performance. 14–3-3eta (η) is a joint-derived biomarker that drives joint damage processes and informs radiographic progression independently of acute phase reactants. As an ELISA assay, 14–3-3η is currently available for clinical use as a laboratory developed test (LDT) in the United States (US) and as an in-vitro diagnostic (IVD) in Canada. The ELISA is (CE) marked for Europe and is Therapeutics Good Administration (TGA) approved for Australia. Previous studies have described 14–3-3eta assay equivalence at independent laboratories in the US and Canada.

Objectives: The purpose of this study was to demonstrate the reproducibility of 14–3-3eta measurements at two independent laboratories in Japan and one in Canada.

Methods: A total of 212 samples from the University of Occupational and Environmental Health were provided for this study. Serum 14–3-3eta measurements were performed using the 14–3-3eta ELISA provided by Augurex. Testing in Canada occurred in August 2015; these 14–3-3eta values were set as the "standard". The 212 samples were shipped from Canada to Japan in January 2016 with testing being performed in February 2016. Testing at MBL was performed on a blinded-basis. Upon completion of testing, results were sent to the investigators at which point in time, MBL was unblinded. 14–3-3eta positivity was defined at $\geq$0.19ng/ml. Contigency and Spearman analyses were performed to assess the strength of the results between the two testing centres. Values above the linear range of the assay i.e. $\geq$20ng/ml were excluded for the Spearman analyses and determination of the median (IQR). A p-value of <0.05 established statistical significance.

Results: In Canada, of the 212 samples tested, 146 (68.8%) were 14–3-3eta positive and in Japan, 147 (69.3%) were positive. In Canada, 187 patients had reportable values in the linear range and in Japan 186 did. Median 14–3-3eta levels in Canada were 0.51 ng/ml (IQR: 0.11–2.09) and in Japan they were 0.58 ng/ml (IQR: 0.02–2.68), respectively. Spearman correlation analysis revealed a highly significant correlation between the two testing sites, r=0.92; $p<0.00001$. Contingency analysis revealed a strong concordance between the two sets of results delivering a likelihood ratio (LR) of 156, $p<0.0001$. Between the two sites, 58 of the samples were 14–3-3eta negative and 139 were positive; there was agreement in 197 (93%) of the 212 samples.

Conclusions: As defined by the soluble biomarker sub-committee of OMERACT, reliability and standardization of biomarker assessments in routine clinical practice across the globe and in clinical studies is of high importance. The results presented herein demonstrate that the 14–3-3eta assay is highly reliable, that testing/delivery of results can be standardized between two independent laboratories, and that it is very stable over time and when shipped between continents.

Disclosure of Interest: S. Hirata: None declared, M. Kaneda Employee of: Medical & Biological Laboratories, T. Isayama Employee of: Medical & Biological Laboratories, Y. Gui Employee of: Augurex Life Sciences Corp., A. Marotta Employee of: Augurex Life Sciences Corp., W. Maksymowych Consultant for: Augurex Life Sciences Corp, Y. Tanaka: None declared

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SAT0623 CORRELATIONS BETWEEN CLINICAL, ULTRASOUND AND DISEASE ACTIVITY SCORES OF PERIPHERAL ENTHESITIS IN SPONDYLOARTHRITIS (SPA)

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Objectives: To look for correlations between clinical, ultrasound (US) and disease activity scores of peripheral enthesitis in an SpA cohort.

Methods: A prospective study of all SpAs meeting SpA ASAS criteria followed at EHS Ben Aknoun, over a period from January 2015 to April 2016. Seventeen entheseal sites were assessed bilaterally: insertions of supra-spinatus, infra-spinatus, sub-scapular, medial and lateral epicondylars, triceps brachialis, gluteus midius and minimus, quadricipital, proximal and distal insertion (patellar ligament, medial and lateral collateral ligament), Achilles tendon and plantar aponeurosis. Peripheral entheses was assessed by the following clinical scores: Enthesitis Peripheral Score (PES= Sum of symptomatic peripheral entheses sites on clinical examination), Visual Analog Scale of peripheral enthesitis (VAS), Spondyloarthritis Research Consortium of Canada score (SPARCC) as well as the following US enthesitis scores: Acute Enthesitis score (Sum of acute enthesitis US scores for each site), Chronic Enthesitis score (Sum of US chronic enthesitis scores for each site), Global Enthesitis score (Sum of the acute and chronic US scores of enthesitis), Doppler signal Enthesitis score (Sum of Doppler signal scores less than 2mm from cortical bone for each site), Madrid Sonography Enthesitis Index (MASEI), Simplified Echographic Score (SES) wich assesses only the Achilles