with primary SS, 66% with secondary SS). Frequently inhomogeneity was found in all major SG (33%, 22% left and right submandibular, 77%, 44.4% left and right parotid glands) in primary SS. Both submandibular glands were symmetrically involved ($p<0.02$). Duration of disease was negatively correlated to inhomogeneity of right parotid gland ($p<0.02$).

Conclusions: Inhomogeneity in major SG in GS US was found in the majority of patients with primary and secondary SS. The symmetrical involvement of submandibular glands was significant. The inhomogeneity appears in the early period of diagnosis. No major differences were found between two groups.

References:

[1] Damjanov N, Milic V, Nieto-González JC, Janta I, Naredo E. Multiobserver Reliability of Ultrasound Assessment of Salivary Glands in Patients with Established Primary Sjögren Syndrome. J Rheumatol. 2016 Oct;43(10):1858–1863.

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SAT0665 DOES PATIENTS' OPINION OF REMISSION IN RHEUMATOID ARTHRITIS OVERLAP US "TRUE" REMISSION?

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Background: Patients describe RA remission as the absence of any symptoms or return to normality. Ultrasound (US) in RA remission patients did not exactly overlap clinical evaluation of remission in previous studies (residual synovitis frequently described). US tenosynovitis evaluation and scoring seemed to better follow clinical remission scores than synovitis in RA [1].

Objectives: To verify with US/clinical evaluations if patients' reported remission is "true" remission, and if and which clinical and US scores are lowest possible in that cohort.

Methods: Forty-eight RA patients were enrolled in this pilot study between 2015–2017 according to their positive answer to the question "Are you feeling free of symptoms, like before RA started for you?"; the enrollment was regardless of the treatment they were on. Written informed consent was obtained. Clinical evaluation of tender and swollen joints was performed the same day with US evaluation of 24 joints and 26 tendon sites and with lab CRP evaluation, blinded from one another. DAS28 and SDAI were calculated after, counting VAS=1, for both physician and patients.

Results: Mean patients age was 58, 35/48 (72.9%) patients were also in remission per DAS28 criteria. Except for CRP value, no other variables (tender, swollen joints, RF, CCP, remission duration) were significantly different in the group with overlapping DAS28 remission. Considering 1.00 as the "ideal" situation (absolute overlapping of US remission and remission felt by patients), the closest was PD scoring in tenosynovitis of the ankle and feet (100%) and the furthest was GS scoring of synovitis in superior and inferior limbs (mean 17.1%)-table 1. Although residual synovitis and tenosynovitis in remission RA patients did not exhibit a statistically significant difference, PD tenosynovitis in both upper and lower limbs was found in less than 10% of patients. This confirms the results from our previous cohort [1], that tenosynovitis better overlaps RA remission than synovitis.

Table 1. Prevalence of US remission in patients with clinical remission – bootstraping for CI

MSUS Remission	DAS28 remission	SDAI Remission
PD Tenosynovitis	94.3 (5.7–100)	90.9 (77.3–100)
GS Tenosynovitis	57.1 (40.0–74.3)	54.5 (36.4–72.7)
PD Synovitis	62.9 (45.7–80.0)	59.1 (36.4–77.3)
GS Synovitis	17.1 (5.7–31.7)	13.6 (0–31.8)
PD Lower limb tenosynovitis	100 (100)	100 (100)
GS Lower limb tenosynovitis	91.4 (82.9–100)	86.4 (72.7–100)

Conclusions: The way patients perceive their disease activity is not related to either DAS28, SDAI scores or to objective US assessment of joints and tendons (GS or PD). However, PD signal especially in tendons sheaths seems to be absent in patients having a normal life, according to their own opinion. Consequently, patients in remission could benefit from US evaluation on any machine, regardless of its costs and Doppler settings. GSUS synovitis/tenosynovitis can be residual finding and does not imply any dissatisfaction in patients' health. An ongoing cohort of active RA patients is currently conducted to explore the validity of this conclusion in these cases, too.

References:

[1] Vlad V et al. Tenosynovitis US scoring systems follow synovitis and clinical scoring systems in RA and are responsive to change after biologic therapy. Med Ultrason 2015 Sep;17(3):352–60.

Disclosure of Interest: None declared

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SAT0666 SAMPLE SIZE FOR RA CLINICAL TRIALS USING ULTRASOUND OUTCOME MEASURES MAY BE REDUCED BY NOVEL JOINT SELECTION METHODS: A PILOT STUDY

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Background: Novel outcome measures selecting a reduced joint count for ultrasonography can be highly responsive in demonstrating the improvement in joint inflammation seen in rheumatoid arthritis (RA) patients on treatment [1].

Objectives: To determine whether the use of the novel methods can translate into smaller sample sizes for subject recruitment into RA clinical trials. Results from the existing methods are used for comparison.

Methods: 24 RA patients with treatment starts or escalation had clinical and ultrasound joint assessment at baseline and 3 months. The novel methods select joints based on (A) ultrasound joint findings (i.e. Individualized Ultrasound (IUS) method) or (B) a composite of ultrasound and clinical joint findings (i.e. Individualized Composite Ultrasound (ICUS) method). In contrast, the existing methods utilize pre-determined joint sites for ultrasonography. Scores at the relevant joints per patient are summed up to obtain the total inflammatory score (TIS). The effect size (ES) was measured as the mean change of the TIS divided by the standard deviation of the change in the TIS. Sample sizes were calculated from confidence intervals (CIs) on ES that reflect uncertainty in estimating ES. For a given CI on ES, sample sizes are computed as the minimum number of patients required to provide $\geq$80% power at α =0.05 for rejecting the null hypothesis (defined as no difference in the 3-month mean change in TIS comparing novel versus existing methods).

Results: Based on the 95% CI analysis, sample sizes using existing joint assessment methods in conjunction with the 12-joint approach ranged from 10 to 234. The corresponding sample sizes using the ICUS method with the 12-joint approach ranged from 7 to 39, and using the IUS method with the 12-joint approach ranged from 6 to 37. The corresponding sample sizes using the ICUS method with the 7-joint approach ranged from 6 to 24, and using the IUS method with the 7-joint approach ranged from 6 to 35.

Table 1. Summary statistics for novel versus existing methods on 3-month change in scores

Method/Approach	Sample Estimates				95% CI	
	Mean 3-month change in TIS	SD of change in TIS	Effect Size	Post-hoc Sample Size	Effect Size	Sample Size
ICUS/7-joint	0.61	0.54	1.13	9	0.61, 1.64	6, 24
ICUS/12-joint	0.87	0.91	0.96	11	0.46, 1.43	7, 39
IUS/7-joint	0.66	0.67	0.99	11	0.49, 1.47	6, 35
IUS/12-joint	0.91	0.94	0.97	11	0.47, 1.45	6, 37
Existing/7-joint	0.10	0.29	0.34	70	-0.07, 0.75	16, –[1]
Existing/12-joint	0.22	0.35	0.63	68	0.18, 1.06	10, 234

CI: Confidence Interval; SD: Standard Deviation. [1]Interval contains zero which corresponds to the null hypothesis, so upper limit cannot be calculated.

Conclusions: Our findings strongly suggest that novel ultrasound joint selection methods result in smaller sample size requirements compared to existing methods, and provide justification for larger studies to confirm these observations.

References:

[1] Tan YK et al. Novel Ultrasound Joint Selection Methods Using a Reduced Joint Number Demonstrate Inflammatory Improvement when Compared to Existing Methods and Disease Activity Score at 28 Joints. J Rheumatol. 2016;43:34–7.

Disclosure of Interest: None declared

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SAT0667 PRESEPSIN AND PROCALCITONIN ARE OF DIAGNOSTIC VALUE FOR BACTERIAL INFECTION IN PATIENTS WITH CONNECTIVE TISSUE DISEASES

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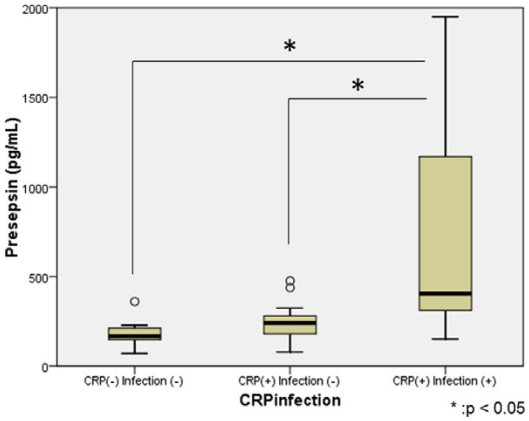
Background: Recently, presepsin (soluble CD14-subtype) and procalcitonin are reported as a good diagnostic markers of bacterial infection, especially sepsis. However, their utility in patients with connective tissue diseases (CTDs) has been unknown.

Objectives: To assess the diagnostic value of presepsin and procalcitonin in patients with CTDs.

Methods: We enrolled the consecutive patients with CTDs, who checked the level of procalcitonin and/or presepsin during January to September, 2016, retrospectively. We divided two groups; the infection group and non-infectious group. Infection was diagnosed by symptoms, micro-bacterial methods and the good response to antibiotics. The data analysis were assessed using IBM SPSS statistics 22.

Results: Eighty-four patients with CTDs were enrolled, including 42 patients with rheumatoid arthritis (RA). The level of procalcitonin was evaluated in all patients, and the level of presepsin was in 48 patients. Thirty-six patients were classified in infection group; 38 patients in the CRP-positive non-infection group; and 10 patients in CRP-negative non-infection group. The level of presepsin was significant higher in infection group than CRP-positive non-infection group (693 +/- 577 pg/mL vs. 250 +/- 101 pg/mL, $p<0.01$) (Fig. 1). Among the patients with RA, the level of presepsin was significant higher in infection group than non-infection group (809 +/- 637 pg/mL vs. 233 +/- 135 pg/mL, $p<0.01$). AUCs of procalcitonin (0.823) and presepsin (0.821) showed similar diagnostic value. The cut-off value of presepsin and procalcitonin were 265 pg/mL and 0.16 ng/mL, respectively (sensitivity: 78.3% and 82.6%, specificity: 76.0% and 76.0%).

【Fig. 1】The level of presepsin in each group



Conclusions: Procalcitonin and presepsin may be of diagnostic value for bacterial infection in patients with CTDs, especially may distinguish bactrial infection from active phase in patients with CTDs.
Disclosure of Interest: None declared
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SAT0668 ASSESSMENT OF INTRACRANIAL VESSELS AND VASCULAR LESIONS IN RHEUMATOID ARTHRITIS. A DETAILED TRANSCRANIAL DOPPLER, CAROTID ULTRASOUND AND BRAIN MRI STUDY

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Background: Stroke has been associated with rheumatoid arthritis (RA). Vascular physiology should be assessed in the preclinical vascular state.
Objectives: We assessed RA patients and healthy controls by transcranial Doppler (TCD), carotid ultrasonography and brain MRI. We wished to determine preclinical pathophysiological changes in the cerebral vasculature.
Methods: Altogether 63 female RA patients and 60 age-matched controls underwent TCD assessment of the medium cerebral (MCA), basilar and vertebral arteries. Pulsatility (PI), resistance (RI) indices and circulatory reserve capacity (CRC) were determined. The presence of carotid plaques and intima-media thickness (cIMT) were also determined. Intracerebral vascular lesions were investigated by brain MRI. RA subsets include MTX- and biologic-treated patients.
Results: MCA PI and RI values at rest and after apnea are significantly increased in the total RA population vs controls. MCA PI (r) and RI (r) is also lower in biologic-treated patients. MCA CRC was also impaired and basilar artery PI was higher in RA. More RA patients had carotid plaques and had increased cIMT. Correlation analysis suggested multiple associations between right and left TCD parameters. There may be an association of TCD and carotid features with cerebral atrophy and age. Disease duration, disease activity and anti-CCP may influence left MCA PI and RI, as well as CRC. Lp(a) may also influence the development of carotid plaques.
Conclusions: This may be the first study to show increased distal MCA and basilar artery occlusion in RA as determined by TCD. RA patients also exert CRC defect. We also confirmed increased carotid plaque formation, increased cIMT. Biologics may beneficially influence some parameters in the intracranial vessels.
Disclosure of Interest: None declared
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SATURDAY, 17 JUNE 2017

Epidemiology, risk factors for disease or disease progression

SAT0669 HOW DO WE USE BIOLOGICS IN PATIENTS WITH A HISTORY OF MALIGNANCY? AN ASSESSMENT OF TREATMENT PATTERNS USING SCANDINAVIAN REGISTERS

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Background: Immune competence is of importance for the occurrence and outcome of malignancies. Robust data on risk of relapse of previous cancer following treatment with biological immune-modulators are scarce. Most treatment guidelines caution about their use in patients with a history of cancer, leaving rheumatologists with the decision whether a potential treatment benefit may offset any potential risk of cancer relapse.
Objectives: To assess the overall use of biologics and the relative use of different biological drugs in RA patients with a history of cancer.
Methods: As part of a Nordic collaboration, and using data from the ARTIS (Sweden), ROB-FIN (Finland), and ICEBIO (Iceland) biologics registers, we identified all patients with RA who initiated a first ever biological treatment 2010 through 2014. Through linkage to the national cancer registers, we identified those patients who had a history of any invasive malignancy (including squamous cell skin cancer) either within the five years preceding start of biological treatment ("recent history of malignancy") or more than five years before start of biological treatment ("non-recent history malignancy).
Results: The age- and gender distributions were similar across countries and drugs. Initiators of non-TNFi biologics were older than TNFI-initiators; the median age at start was the highest for rituximab. Out of a total of 8065 bio-initiations, 6% occurred in individuals with a history of cancer (2% with a cancer within 5 years, and 4% with a cancer more than 5 years before treatment start. Whereas there was little variation (around 5%) across TNFi initiators, the proportion of patients with a history of cancer at treatment start was higher among rituximab initiators, in part explained by age (Table). There were only small variations across country (not shown).
Conclusions: In Sweden, Finland and Iceland, one out of 20 biologics-initiators (and almost one out of five rituximab initiators) have a history of an invasive cancer, underscoring the need for more data on benefit/risks in this treatment context. The higher proportion in rituximab initiators is partly explained by differences in age at treatment start and reflects the preference for rituximab by clinicians for treatment of patients with history of cancer.
Disclosure of Interest: K. Chatzidionysiou Consultant for: Roche, Pfizer, Abbvie, Elli-Lilly, UCB, K. Aaltonen: None declared, D. Nordström Speakers bureau: AbbVie, BMS, Lilly, MSD, Novartis, Pfizer, Roche, UCB, B. Gudbjornsson Speakers bureau: Actavis, Celgene, MSD, Pfizer, G. Grondal: None declared, A. Geirsson: None declared, L. Steingrimsdottir: None declared, T. Frisell: None declared, J. Askling Grant/research support from: AbbVie, Eli Lilly, Janssen, Merck, Pfizer, Roche, UCB, Samsung
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Abstract SAT0669 – Table 1

	Etanercept	Infliximab	Adalimumab	Certolizumab	Golimumab	Rituximab	Abatacept	Tocilizumab	All
Total number of pts	2072	1538	1236	1036	795	883	281	224	8065
Age at treatment start (Swedish pts)	57	58	57	57	57	66	62	61	
Age at treatment start (Finnish pts)	55	50	54	55	54	67	58	54	
Age at treatment start (Icelandic pts)	52	53			53	66			
Total number of pts with cancer <5 yrs before start	41	20	9	18	15	76	6	12	197
Total number of pts with cancer ≥5 yrs before start	70	48	34	36	19	87	19	10	323
Total number of pts with a history of cancer	111	68	43	54	34	163	25	22	520
Proportion of pts with history of cancer <5 yrs before start	2%	1%	1%	2%	2%	9%	2%	5%	2%
Proportion of pts with history of cancer ≥5 yrs before start	3%	3%	3%	3%	2%	10%	7%	4%	4%
Proportion of pts with any history of cancer	5%	4%	3%	5%	4%	18%	9%	10%	6%