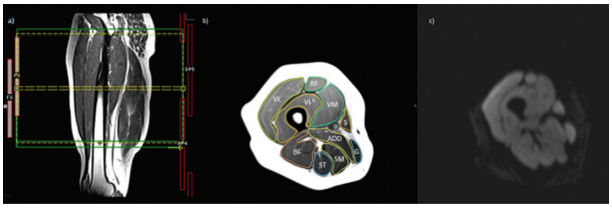
MD (x10–3mm^2/s-1)	Myositis	1.31 (1.15–1.47)	1.26 (1.05–1.47)	0.087 (0.00–0.17)	0.02 (−0.05, 0.09)	0.046	0.02
	Healthy	1.22 (0.69–1.75)	1.23 (0.75–1.72)				
Leg power (Watts)	Myositis	34.92 (−14.42, 84.25)	58.2 (−29.39, 145.77)	−25.05 (−43.71,–6.39)	−47.53 (−92.14,–12.92)	0.011	0.010
	Healthy	59.97 (18.88–101.07)	105.72 (18.48–192.96)				
Leg torque (N m)	Myositis	19.66 (−16.29, 55.62)	30.45 (−27.47, 88.36)	−18.01 (−31.7,–4. 33)	−33.36 (−56.12,–10.57)	0.013	0.006
	Healthy	37.68 (6.8–68.55)	63.80 (6.98–120.63)				

		Mean	Mean difference (95% CI)	Significance (p value)
Handgrip (kg)	Myositis	15.6 (-0.05, 31.25)	−18.74	<0.001
	Healthy	34.34 (14.94–53.73)	(−25.4,–12.1)	



Abstract AB1205 – Figure 1

a) Sagittal (localiser) image of the thigh used in the planning of the Vibe-Dixon imaging volume (shown by the box). b) Regions of interest were drawn corresponding to the individual muscles of the thigh. c) Stimulated echo acquisition mode-Echo planar imaging (STEAM-EPI) diffusion image

Conclusions: MRI based FF and DTI measurements and dynamometer measurements can detect muscle differences between myositis and healthy control groups. These differences are consistent with increased myosteatosis, increased oedema and the effects of muscle fibre plasticity. These measures show potential as novel imaging biomarkers in the diagnosis and management of myositis.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3329

AB1205 PRECISION OF SERUM AND PLASMA TESTING IN ANTI-CARDIOLIPIN AND ANTI-B2 GLYCOPROTEIN-1 ANTIBODIES

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Background: Anti-cardiolipin (aCL) and anti-β2 glycoprotein-1 (β2GP1) antibody ELISA testing may be performed on serum, plasma, or both in accordance to the manufacturers' suggested protocols. There exists some variability in manufacturers' preference for serum or plasma. Various societal guidelines have published a preference for serum over plasma; however, there is scarcity of data assessing reproducibility between serum and plasma in aCL or β2GP1 testing.

Objectives: To determine reproducibility of aCL and β2GP1 testing between serum and plasma samples obtained in a routine clinical setting.

Methods: Patients with clinical serum draws for IgG/IgM aCL and β2GP1 antibodies were identified, and same-day, citrated plasma samples were obtained for repeat ELISA testing (QUANTA Lite, INOVA Diagnostics, San Diego, CA). Quantitative levels were determined for each isotype and further stratified into Negative (<15.0 GPL/MPL or U/mL), Weakly Positive (15.0–39.9 GPL/MPL or U/mL), or Positive (≥40.0 GPL/MPL or U/mL) reference categories. Differences were compared using paired t-tests. Agreement between the reference categories were compared by kappa coefficients.

Results: Fifty patients were identified for study with 50 and 40 samples eligible for repeat aCL and β2GP1 plasma testing, respectively. Mean age was 49±18 years. 70% were female, 86% were Caucasian, 22% with systemic lupus erythematosus and 22% with antiphospholipid syndrome. As shown in Table 1, quantitative levels tended to be slightly higher in serum than plasma. Although a statistically significant difference was found for most of the antibodies tested, the difference between serum and plasma values were generally small. There was good agreement in reference category between serum and plasma. Kappa coefficients ranged from 0.70 to 1.00.

Abstract AB1205 – Table 1. – Reproducibility of anti-Cardiolipin and anti-β2 Glycoprotein-1 Testing in Serum versus Plasma

		Quantitative Levels		Agreement to Reference Category
	N Samples	Mean Difference (sd)[1]	p-value	κ Coefficient (95% CI)
IgG aCL	50	0.4 (14.8) GPL	0.84	0.81 (0.64–0.98)
IgM aCL	50	3.3 (8.5) MPL	0.008	0.73 (0.56–0.91)
IgG β2GP1	40	1.4 (4.2) U/mL	0.038	1.00 (1.00–1.00)
IgM β2GP1	40	4.6 (8.9) U/mL	0.002	0.74 (0.54–0.94)

1: Serum-Plasma. **Abbreviations**: aCL=anti cardiolipin, β2GP1=anti-β2 glycoprotein 1, sd=standard deviation

Conclusions: There appears good reproducibility of IgG/IgM aCL and β2GP1 antibody ELISA results between serum and plasma.

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Acknowledgements: Special thanks to Susan Hartzler, Cory Blixt, Serena Navitskas, and Diane Meier.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5018

AB1206 DYNAMIC CONTRAST ENHANCED (DCE)-MRI IN RELATION TO INFLAMMATORY MARKERS IN SERUM AND JOINT FLUID: INITIAL DATA AND VALIDATION IN FOUR MOST COMMON KNEE ARTHRITIC DISEASES

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Background: Biomarker science has advanced to aid in distinguishing between different forms of arthritis: inflammatory arthritides such as rheumatoid arthritis (RA) and psoriatic arthritis (PsA) and osteoarthritis (OA). Biomarkers are also used to assess disease activity. Diagnostic serum biomarkers such as rheumatoid factor (RF) and cyclic-citrullinated peptide (CCP) and assays of disease activity such as C-reactive protein (CRP), and multi-biomarker assays have utility but lack complete sensitivity and specificity. Increasingly quantitative imaging biomarkers may fill an important gap in disease identification and assessment.

Objectives: 1) To investigate the association between imaging measures of inflammation in the synovium of the knee joint and systemic levels of CRP in patients with RA, PsA and OA. 2) Investigate how imaging and clinical markers correlate to IL-6 levels from joint fluid in different patient cohorts.

Methods: 38 patients with a flare of pain in the knee were recruited. 12 were diagnosed with RF positive (+) RA, 6 with RF negative (-) RA, 6 PsA, and 14 OA, according to ACR/EULAR criteria. CRP in blood and IL-6 levels from joint fluid were determined. Patients underwent MRI, including Dynamic Contrast Enhanced (DCE)-MRI exam prior to an ultrasound-guided arthrocentesis.

MRI were scored for synovitis[1] and DCE-MRI were quantified using Dynamic Enhanced MRI Quantification (DEMRIQ) method, extracting the volume of enhancing voxels (Nvoxel), Initial Rate of Enhancement (IRE), Maximum Enhancement (ME). Inflammation was quantified as IRExNvoxels and

MExNvoxels.[2] Correlation between all clinical scores and all imaging parameters was done using Spearman rho, with significance levels of p<0.05.
Results: The imaging markers of perfusion in the synovium of the knee (MExNvoxels and IRExNvoxels) were the only imaging measures, which showed a very high association with CRP in both RF +RA (r=0.92/0.97, p<0.05) and PsA patients (0.93/0.99, p<0.05), whereas all other imaging markers of inflammation showed no statistical association with blood levels of CRP in these diseases. We found no association between CRP and any imaging assessed scores of inflammation in either RF- RA or OA. In addition, only RF +RA patients showed a positive moderate to high association between MExNvoxels and IL-6 (r=0.66, p<0.05) in the knee joint aspirate.
Conclusions: Quantitative imaging and blood biomarkers of inflammation, such as DCE-MRI parameters and CRP, appear to relate differently to each other in the four most common knee arthritic diseases, RF +RA, RF- RA, PsA and OA. DCE-MRI may have specific utility in differentiating these conditions and their disease activity.

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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2018-eular.6271

AB1207 CORRELATION BETWEEN CLINICAL FINDINGS AND ULTRASONOGRAPHY IN EVALUATING PAINFUL RHEUMATOID SHOULDER

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Background: Shoulder pain is one of the most common complaints encountered in patients with rheumatoid arthritis (RA) [1]. In recent years ultrasonography (US) became an essential tool in diagnosing rheumatic diseases [2]. As clinical examination often does not allow an exact diagnosis, the agreement between both methods needs to be discussed to know how much the US add benefits to clinical examination.
Objectives: To determine the agreement between clinical examination and ultrasound in evaluating shoulder pain in rheumatoid.
Methods: A cross-sectional study including thirty RA patients, meeting the ACR/EULAR classification criteria for RA complaining of shoulder pain. They were recruited from rheumatology outpatient clinic in Mansoura University Hospitals. The sixty shoulders of the thirty patients were examined clinically by inspection, palpation and special tests, then fully examined by ultrasound including biceps tendon, subacromial bursa, rotator cuff tendons and acromioclavicular joint.
Results: Agreement among clinical examination and US was examined using Cohen's kappa. There was slight agreement between clinical examination and US regarding biceps tenosynovitis with k=0.206, fair agreement regarding acromioclavicular osteoarthritis with k=0.392 and SASD bursitis with k=0.233. There was also moderate agreement between clinical examination and US examination of the shoulder in case of supraspinatus tendinopathy with k=0.464. Data were statistically significant (p<0.001). The overall agreement between clinical examination and ultrasound was poor.
Conclusions: Clinical examination of shoulder pain in rheumatoid arthritis is not accurate, insufficient. It should be confirmed with US examination during the initial evaluation of the shoulder to give reliable data and differentiate between different pathologies.

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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2018-eular.4714

AB1208 THE ROLE OF ULTRASOUND IN THE DISCOVERY OF INTERSTITIAL CHANGES IN THE LUNGS IN PATIENTS WITH SYSTEMIC CONNECTIVE TISSUE DISEASE

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Background: Interstitial lung disease (ILD) is one of the most serious lung complications in patients with connective tissue disease (CTD), most commonly in patients with systemic sclerosis (SSc). High-resolution Computed Tomography is a gold standard for assessing ILD. Ultrasound examination of the lungs has been increasingly used lately to evaluate the existence of interstitial changes (B lines) in the lungs.
Objectives: To determine whether there is a significant difference in the presence of B lines on lung ultrasound examination in patients with SSc compared to patients with other CTD and healthy controls. Also, to investigate if there is a significant difference in the presence of B lines on lung ultrasound examination in patients with diffuse SSc compared to patients with limited SSc.
Methods: The study included 150 people of both sexes, aged between 19 and 81, who were examined at the Institute of Rheumatology in Belgrade. In the first group there were 55 patients with SSc (28 with diffuse and 27 with limited form of SSc), in the second group 45 patients with other CTD (16 with rheumatoid arthritis, 16 with systemic lupus erythematosus lupus and 13 with Sjogren syndrome) and in the third group 50 healthy subjects who were matched by gender and age with other two groups. At the ultrasound examination, the number of B lines was determined in all segments of the lungs. A positive ultrasound finding was considered to be one with 3 or more B-lines in at least two adjacent ultrasound scanning fields or one with more than 5 B-lines in any single field of ultrasound scanning.
Results: There was statistically significant difference in positive findings between the group of subjects with SSc and the group of healthy subjects (65,5% vs. 2%; p<0.001) and between the group of subjects with SSc and the group with other CTD (65,5% vs. 13,3%; p<0.001). Also, it was shown that there was statistically significant difference in positive findings between the group of subjects with diffuse SSc and the group with limited SSc (85,7% vs. 44,4%; p<0.001).
Conclusions: The conducted study confirmed that the presence of B lines on lung ultrasound examination is significantly more frequent in patients with SSc, especially in the patients with diffuse SSc.

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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2018-eular.7592

AB1209 USEFULNESS OF IMAGENOLOGY TO DIFFERENTIAL DIAGNOSIS IN PATIENTS WITH PRESUMED SERONEGATIVE RHEUMATOID ARTHRITIS AND OTHER ARTHROPATHIES

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Background: It is difficult to make a differential diagnosis between seronegative RA and other inflammatory arthropathies. Many patients could be wrong diagnosed followed of expensives treatments.
Objectives: To assess the usefulness of X-rays of hands and feet (X-rays), Ultrasound (US) and Magnetic Resonance Imaging (MRI) to discard false positive diagnosis of seronegative RA from real-world evidence.
Methods: An analysis from medical records of patients with presumptive seronegative RA diagnosis reportedly seronegative for both rheumatoid factor and anti-cyclic citrullinated peptide antibodies and clinical criteria of RA, in the period between July 2016 and ; June of 2017 who were assesed by imagenology (X-rays, US or MRI) in a centre of rheumatoid arthritis to confirm diagnosis or discard it. Laboratory, and imagenology data was retrospectively analysed and multivariate analysis was performed to determinate the usefulness of imagenology.
Results: 360 patients were received in the centre with presumptive diagnosis of RA in the period, mean of age was 58 years, 80,9% females and 19,1% males. X-