experimented in ultrasound. Five enthesis locations bilaterally (distal Achilles tendon, distal andproximal patellar ligaments, distal quadriceps, and brachial triceps tendons) in each person were explored.The following elemental lesions of enthesis were evaluated: thickness, presence of calcifications, erosions,enthesophyte, loss of fibrillar patternand power Doppler signal.

The calculated index was compared by Mann-Whitney U test between cases and controls. The significance level was set at 5%.

Results: In our study population, the median age was 51.8±2.3 years and the median body mass index was 30±1 kg/m^2. This last was similar between the two groups. All included subjects were female.

The total enthesitis index was higher in G1 (6.67±0.91)than G2 (3.50±0.73) with a statistically significant difference (p=0.01).

Considering each evaluated enthesis, the distal patellar ligament score was significantly higher in the G1 (1.67±0.55 vs 0.25±0.16 with p=0.03). For the other enthesis, there was no significantly difference between the 2 groups.

Conclusions: The distal patellar ligament enthesis changes shown in older persons may be the traduction of a silent-stage of knee osteoarthritis.

Disclosure of Interest: None declared

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AB1039 **RELATIONSHIPS BETWEEN SONOGRAPHIC AND ELECTROPHYSIOLOGICAL MEASURES IN PATIENTS WITH IDIOPATHIC CARPAL TUNNEL SYNDROME WAITING FOR SURGERY**

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Background: Sonography is a diagnostic tool with great development in diagnosing entrapment neuropathy. It's an easy, painless, fast, non-invasive technique and can explore how the nerve's morphology and pathologies are associated. An electroneurogram is used to assess the intensity of nerve involvement.

Objectives: To determine the relationship between the intensity of nerve involvement by electroneurogram and the measurement of the cross-sectional area (CSA) of the median nerve by sonography in patients with idiopathic carpal tunnel syndrome (CTS) waiting for surgery.

Methods: 56 wrists of 39 consecutive patients waiting for surgery were tested, however 5 were excluded because were found to have anatomic variants (4 bifid nerves, 2 median arteries) and 1 fybrolipoma. Therefore, the final sample was 51 wrists of 37 consecutive patients (11 male and 26 females), with a mean age of 59.2 years (26–85), all with electrophysiologically confirmed idiopathic CTS. Patients were classified by their electrophysiologic grade. The median nerve cross-sectional area at proximal and distal carpal tunnel was measured using high frequency ultrasound.

Relationships between CSA, the severity of the electrophysiologic grade and the duration of symptoms were analysed. Also, a median nerve morphological characteristics examination (hipoecogenicity, loss of fascicular structure, Power Doppler signal and anatomical variants) undertaken.

A comparison between CSA and the severity of the electrophysiologic grade was made using an independent T test and the connection between CSA and the duration of symptoms was calculated using ANOVA test.

Results: Patients were classified by their electrophysiologic severity grade (8 mild, 13 moderate, 29 severe and 1 very severe). The mean ultrasound area of distal medial nerve was 8.7 mm^2 in mild-moderate and 9.2 mm^2 in severe-very severe cases (p=0.52). The average of proximal CSA was 11.6 mm^2 in mild-moderate and 14.1 mm^2 in severe-very severe cases with statistical signification differences (p=0.026). Relationship between CSA and symptom's duration wasn't identified. In 89.2% of the cases, hipoecogenicity and the loss of fascicular structure were observed but no cases were found to show positive Power Doppler signal.

Conclusions: The most valid and relevant parameter regarding the electroneurogram in the diagnosis of CTS is CSA at proximal carpal tunnel by sonography. A cross-sectional area measuring more than 9–10 mm^2 has been suggested to be pathologic and our study confirms these results. While the electroneurogram is the gold-standard method in the diagnosis of nerve involvement severity, a sonography could improve the diagnostic sensibility and give information about nerve's morphology and associated pathologies.

Disclosure of Interest: None declared

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AB1040 **CLINICAL UTILITY OF BONE SCINTIGRAPHY FOR INFLAMMATORY ARTHRITIS**

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Background: Bone scintigraphy is often used in the workup of patients with rheumatological disease, in particular for the investigation of inflammatory arthritis. It also has a role in the investigation of malignancy and fractures. As an imaging technique, it is very sensitive but not specific for inflammation. The most common technique used is triple phase scintigraphy, with the 2nd phase (blood pool phase) being the most useful for identifying inflammation.

Objectives: To evaluate the clinical utility of bone scintigraphy in the workup of patients with rheumatological disease, in particular for inflammatory arthritis.

Methods: This was a retrospective study of patients seen in the rheumatology outpatients between January 2011 and July 2014, who had bone scintigraphy as part of their workup. Their clinical record was reviewed to obtain pre- and post-test clinical diagnoses, bone scintigraphy reports and investigations (ESR/CRP, rheumatoid factor/CCP antibodies). For patients who had followup at one year we recorded their clinical diagnosis at this time.

Results: A total of 226 patients had bone scintigraphy, with a median age of 54 years. 63% were female.

The main indication for bone scintigraphy was to assess for inflammation in 194 patients. For this group, the most common pre-test diagnosis of inflammatory arthritis (41%), followed by degenerative arthritis (36%), unclear diagnosis (20%) and mixed inflammatory and degenerative arthritis (3%).

Overall, 49% (n=95) of patients had their diagnosis changed after bone scintigraphy.

The pre-test diagnosis was compared to bone scintigraphy findings with the highest confirmatory rate for degenerative arthritis (67%), followed by inflammatory arthritis (49%) and mixed arthritis (40%).

Bone scintigraphy findings were also compared to post test diagnosis with the highest confirmatory rate for degenerative arthritis (91%), followed by inflammatory arthritis (70%) and mixed arthritis (14%).

There was no significant association between patient factors (age, gender, ESR/CRP, RF/CCP) and having confirmatory or conflicting bone scintigraphy findings.

The post test diagnosis was compared to the diagnosis at one year, with the diagnosis being unchanged in 84% for inflammatory arthritis and 45% for degenerative arthritis.

Conclusions: This study showed that bone scintigraphy lead to a change in diagnosis in a large proportion of patients and was better at confirming degenerative arthritis or ruling out inflammatory arthritis.

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AB1041 **ULTRASONOGRAPHY OF NORMAL MUSCULOSKELETAL STRUCTURES IN 100 SECTIONS: A BOOKLET AND A CD-ROM**

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Objectives: To present a booklet and a CD-ROM with a mini-atlas including 100 sections illustrating the normal ultrasound musculoskeletal anatomy.

Methods: We performed an ultrasound examination of large and small joints of the medical staff not suffering from any musculoskeletal disorder. Ultrasound examination was performed using a high-frequency linear probe (Toshiba Xario®, frequency (8–14 MHz)) in B mode. Finally, for the sake of clarity of the presentation of this library, we presented each image accompanied with another showing the valid positioning of the probe and an annotated schema for each section made.

Results: We present in the form of CD-ROM and booklet a photo library of a mini-atlas.

Section 27 : Cross-section of the flexor digitorum superficialis and profondus tendons
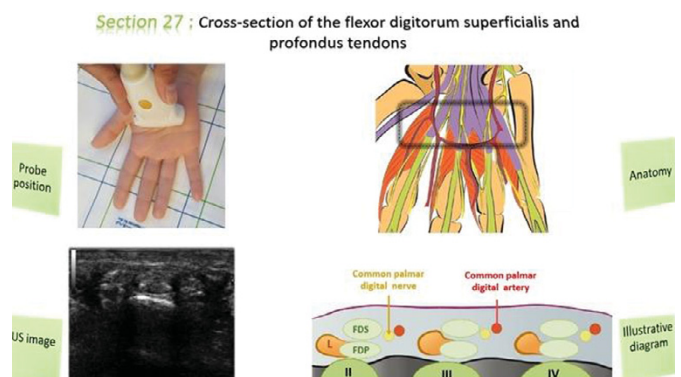
The joints studied are:
- The wrist and hand
- The elbow
- The shoulder
- The ankle and foot
- The knee
- and the hip

100 sections were performed, we presented them together with images showing ther normal corresponding musculoskeletal anatomy, the valid positioning of the probe, and also an annotated schema corresponding to each section. We give here below the example of a section illustrating a cross-section of flexor digitorum superficialis and profondus tendons

Conclusions: We hope that we give to rheumatologists a simple tool to recall and standardize the practice of musculoskeletal ultrasound. We intend to enrich it, in the future, with the pathological images and interventional ultrasound videos.

Disclosure of Interest: None declared

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AB1042 **DYNAMIC CONTRAST-ENHANCED MAGNETIC RESONANCE IMAGING IN A RANDOMIZED PLACEBO-CONTROLLED RHEUMATOID ARTHRITIS TRIAL – IMPACT OF APPLYING JOINT COVERAGE QUALITY CRITERIA**

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Background: Dynamic contrast-enhanced MRI (DCE-MRI) has been proposed for evaluating treatment response in RA. In a 16-week anti-TNF trial, DCE-MRI measures of inflammation analyzed for regions of interest (ROIs) covering MCP joints 2–5 and PIP joints 2–5 detected improvements at week 16, but not at earlier time point[1].

Objectives: To investigate if solely analyzing joints fulfilling predefined MRI quality criteria for joint visualization would increase the responsiveness and discrimination between treatments of DCE-MRI.

Methods: Patients with active RA despite stable DMARD therapy for ≥12 weeks were randomized 2:1 to certolizumab pegol (CZP) or 2 weeks of placebo (PBO) followed by CZP (CZP+PBO). MRIs were obtained at weeks 0 (baseline), 1, 2, 4, 8 and 16. Only joints fulfilling MRI joint quality criteria (≥3MCP/≥2PIP joint slices including the distal and/or the proximal bone of the joint and part of the joint cavity) were included in analyses. ROIs covering each joint were analyzed for number of enhancing voxels (Nvoxel), initial rate of enhancement (IRE) and maximum enhancement (ME) using the DYNAMIKA software (Image Analysis, UK).

Results: For 38 (CZP: 26; PBO+CZP: 12) of the 40 randomized patients, ≥1 joint fulfilled the quality criteria at baseline. 31 MCP2, 28 MCP3, 23 MCP4, 7 MCP5, 29 PIP2, 29 PIP3, 28 PIP4 and 12 PIP5 joints were included. No individual joints showed significant changes over time or differences between groups. Analyses by joint group (MCP2–4 and PIP2–4) had few data available. Nvoxel and ME decreased numerically, but not significantly, for PIP2–4.

Conclusions: There were no statistically significant changes in DCE-MRI on joint level or joint group level or between groups. Applying strict joint coverage quality criteria compromises the statistical power of the DCE-MRI analyses underlining the importance of standardization of the method.

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AB1043 **RHEUMATOID FACTOR ISOTYPES – STILL AN USEFUL TOOL IN THE DIAGNOSIS OF RHEUMATOID ARTHRITIS?**

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Background: Rheumatoid factor (RF) and anti-citrullinated peptide antibodies (ACPA) are key serologic markers in the diagnosis of Rheumatoid Arthritis (RA) included in the 2010 ACR/EULAR diagnostic criteria. Determination by enzyme-linked immunosorbent assay (ELISA) allows RF isotypes' quantification (IgG, IgA and IgM), improving diagnostic accuracy [1,2].

Objectives: To assess the clinical value of RF-IgG/IgA/IgM (ELISA) in the diagnosis of RA, in comparison to RF-IgM (nephelometry).

Methods: A population of RA outpatients fulfilling the 2010 ACR/EULAR diagnostic criteria was cross-sectionally evaluated. Data on demographic and clinical characteristics was collected. RF-IgG / IgA / IgM (ELISA, Orgentec®), RF-IgM (nephelometry, Siemens®) and ACPA-IgG (ELiA, ThermoFisher®) were measured. Values three times or more above the upper limit of normal were considered high-positive (in agreement to 2010 ACR/EULAR diagnostic criteria).

Results: A total of 87 patients (70.1% female) were included, with a mean (SD) age of 57.3 (12.29) years. Median time of disease evolution was 6 years, ranging from 0 to 37 years. Erosions were present in 50.6% (N=44). RF-ELISA was positive (at least one isotype increased) in 85.1% (N=74); the most frequent isotype was IgM (70.1%;N=61) and the most frequent combination was IgG, IgA and IgM positivity (46.0%;N=40) (table1). FR-nephelometry and ACPA were positive in 58.6% (N=51) and 47.1% (N=41), respectively.

Comparing the two RF methods, 56.3% (N=49) were both RF-nephelometry and RF-ELISA positive; 28.7% (N=25) were RF-ELISA positive and RF-nephelometry negative, and only 2.3% (N=2) verified the opposite (p=0.001). As for RF high-positivity, 4.6% (N=4) of the 87 patients were only RF-nephelometry high-positive, 9.2% (N=8) only RF-ELISA high-positive and 34.5% (N=30) both high-positive (p<0.001).

In the RF-nephelometry negative population (N=36), ACPA and RF-ELISA were both positive in 11.1% (N=4). Only 8.3% (N=3) were solely ACPA positive and 58.3% (N=21) solely RF-ELISA positive, however without statistical significance. Considering the ACPA negative population (N=46), 32.6% (N=15) were both RF

Table 1. Frequencies of RF-ELISA isotypes' profiles

Profile	n	%
IgG–IgA–IgM–	13	14,9
IgG+IgA–IgM–	1	1,1
IgG+IgA+IgM–	4	4,6
IgG+IgA?IgM+	1	1,1
IgG+IgA–IgM+	12	13,8
IgG+IgA+IgM+	40	46,0
IgG–IgA+IgM+	5	5,7
IgG–IgA–IgM+	3	3,4
IgG–IgA+IgM–	8	9,2

Abstract AB1042 – Table 1. Baseline values of and changes in DCE-MRI parameters for MCP2–4 and PIP2–4

	Baseline	Change week 0–week 1	Change week 0–week 2	Change week 0–week 4	Change week 0–week 8	Change week 0–week 16
Median change [number]	PBO+CZP/CZP	PBO+CZP/CZP	PBO+CZP/CZP	PBO+CZP/CZP	PBO+CZP/CZP	PBO+CZP/CZP
Nvoxel						
MCP2–4	295/131	NA/-503	62/0	NA/0	90/53	NA/-473
	[5]/[12]	[1]/[4]		[1]/[5]	[2]/[4]	[1]/[5]
PIP2–4	108/144	-35/0	-56/-12	-80/-75	-69*/10	-32/-12
	[8]/[15] [3]/[6]	[5]/[7]	[5]/[4]	[7]/[10]	[5]/[8]	
IRE						
MCP2–4	0.000/0.004	NA/0.000	0.006/0.00	NA/0.000	0.273/-0.023	NA/0.002
	[4]/[9]	[0]/[3]	[2]/[2]	[0]/[4]	[2]/[2]	[0]/[5]
PIP2–4	0.013/0.006	-0.002/-0.001	0.000/0.001	0.003/0.000	0.014*/0.000	0.000/0.023
	[8]/[10]	[2]/[3]	[5]/[5]	[5]/[3]	[5]/[5]	[4]/[2]
ME						
PIP2–4	0.013/0.006	-0.002/-0.001	0.000/0.001	0.003/0.000	0.014*/0.000	0.000/0.023
	[8]/[10]	[2]/[3]	[5]/[5]	[5]/[3]	[5]/[5]	[4]/[2]
PIP2–4	1.76/1.99	-0.16/-0.30	-0.17/0.02	-0.23/0.03	-0.02/-0.01	-0.19/-0.12
	[8]/[10]	[2]/[3]	[5]/[5]	[5]/[3]	[5]/[5]	[4]/[2]

NA: Not applicable. Difference between time points: Wilcoxon Signed Ranks test: *p<0.05.