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.

References:

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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: *$p<0.05$.