decreased (figure 1). Despite indicating US examination more frequently, rheumatologists did not base their DMARD escalation decision on PD synovitis.

Abstract FRI0588 – Table 1. Visits distribution according to DMARD escalation and groups

	Group DAS28 (n=175)	Group US (n=105)
	DAS28	Observed Theoretical
DMARD escalated*	36 (12.9)	23 (8.2) 10 (3.6)
DMARD not escalated*	139 (49.6)	82 (29.3) 95 (33.9)

*Numbers (%) of visits; $p=0.791$ (chi-square test) between Group DAS28 and Observed Group US; $p=0.012$ (chi-square test) between DAS28 and Theoretical Group US

Abstract FRI0588 – Figure 1. Proportion of visits with US evaluation (bars) and level of agreement between US synovitis (PD ≥ 2) and DMARD escalation (kappa coefficients; $P < 0.001$ for all).

Conclusions: In this real-life study of RA patients with FM, the growing use of US for evaluating RA activity over time was associated with an increasing discordance between US result and clinical judgement. When clinical judgement and US findings were discordant, RA treatment decision was mostly based on clinical judgement. If US result oriented treatment decision, DMARD escalation risk would be 61% smaller.

REFERENCES:

- [1] Dale J, et al. Ann Rheum Dis. 2016;75(6):1043–50.
- [2] Haavardsholm EA, et al. BMJ 2016;354:i4205.
- [3] Ranzolin A, et al. Arthritis Rheum. 2009;61(6):794–800.
- [4] Chakr RM, et al. Rev Bras Reumatol 2016. doi:10.1016/j.rbr.2016.11.004
- [5] Lage-Hansen PR, et al. Scand J Rheumatol 2015. doi:10.3109/03009742.2015.1046484:1-4

Acknowledgements: This study was funded by Hospital de Clínicas de Porto Alegre.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2538

FRI0589

A JOINT PROCEDURAL RECOMMENDATION ON FDG-PET/CT(A) IMAGING IN LARGE VESSEL VASCULITIS AND POLYMYALGIA RHEUMATICA FROM THE CARDIOVASCULAR AND INFLAMMATION & INFECTION COMMITTEES OF THE EANM, THE CARDIOVASCULAR COUNCIL OF THE SNMMI, THE PET INTEREST GROUP (PIG), AND ENDORSED BY THE ASNC

R. Slart on behalf of Members of EANM Cardiovascular, EANM Infection & Inflammation Committees, SNMMI Cardiovascular Council, PET Interest Group, and ASNC. Medical Imaging Center, departments of Nuclear Medicine and Radiology, University Medical Center Groningen, Groningen, Netherlands

Background: [18F]-fluorodeoxyglucose positron emission tomography combined with anatomical computed tomography angiography, (FDG-PET/CTA) is increasingly used in Large Vessel Vasculitis (LVV), consisting of Giant Cell Arteritis (GCA) and Takayasu Arteritis (TA) and Polyomyalgia Rheumatica (PMR), and may be of value for optimal diagnosis, disease activity monitoring, and evaluation

of damage development. There are currently no general accepted procedural guidelines regarding PET imaging acquisition for LVV and PMR.

Objectives: The aim of our study is to provide recommendations and statements, based on the available evidence in the literature combined with consensus of experts in the field, for patient preparation, FDG-PET/CT(A) acquisition and interpretation.

Methods: A systematic literature review was conducted to retrieve data on FDG-PET/CT(A) imaging in LVV and PMR. Expert consensus was used to propose recommendations in the absence of sufficiently robust data. Levels of evidence and grades of recommendations were attributed to the statements of different indications according to published criteria.

Results: Based on the literature review combined with expert consensus recommendations and statements that could be formulated: see table 1.

Recommendations and statements	Level of evidence	Grade
Fasting the patient for at least 6 hours prior to FDG administration	II	B
Normal blood glucose levels are desirable, but glucose levels below 10 mmol/L (180 mg/dL) are acceptable	II	B
FDG/PET within three days after start of GC is optional as an possible alternative	III	B
A minimum interval of 60 minutes is recommended between FDG administration and acquisition for adequate biodistribution	III	B
Use of a standardized grading system	II	B
Typical FDG joint uptake patterns should be evaluated and reported if present	II	B
Normalization of the arterial wall uptake to the background activity of venous blood pool provides a good reference to assess vascular inflammation	II	B
Normalization of the arterial wall uptake to the background activity of venous blood pool provides a good reference to assess vascular inflammation	II	B
Based on the available evidence, FDG-PET imaging has high diagnostic performance for the detection of LVV and PMR	II	B
CTA and FDG-PET have complementary roles in the diagnosis of LVV	III	B
CTA has incremental value in detecting structural vascular changes and potential complications of vasculitis	II	A
FDG-PET/CT(A) may be of value to evaluate response to treatment by monitoring functional metabolic information and detecting structural vascular changes	III	C

Conclusions: This joint recommendation highlights that standardisation and general consensus regarding the optimal procedural performance of FDG-PET/CT(A) imaging in LVV and PMR are highly needed. Some recommendations and statements could be formulated however, there are also a lot of open issues which need to be studied for optimal performance of FDG-PET/CT(A) in the diagnosis, (treatment) monitoring and future theranostics in LVV/PMR to increase the levels of evidence and improve the grades of the recommendations.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1181

FRI0590

ULTRASOUND EXAMINATION OF THE WRIST JOINTS: FREQUENCY OF CRISTAL DEPOSITS (CHONDROCALCINOSIS) IN PATIENTS WITH DIFFERENT ARTHROPATHIES

R. Osipiants¹, M. Eliseev², S. Vladimirov², K. Ilinykh². ¹RUDN University; ²V.A. Nasonova Research Institute of Rheumatology, Moscow, Russian Federation

Background: Hand involvement in the rheumatic diseases is often precocious and predominant as compared to other skeletomuscular regions. The Ultrasound (US) has an important role in early calcium pyrophosphate deposition disease (CPPD) diagnosis. Recent studies suggest a positive associated of CPPD and other rheumatic disease.^{1,2}

Objectives: To investigate the frequency of the US features of chondrocalcinosis (CC) at the triangular fibrocartilage complex (TFC) of the wrist in patients (pts) with different arthropathies.

Methods: A total of forty persons were included in the study and were divided into 4 groups (on ten in each group): basic group – CPPD pts (crystal-proven at synovial fluid analysis; median age 58.5 (range 45–63) years; 6M/4F) and the control groups – rheumatoid arthritis pts (RA, ACR/EULAR 2010 age 50.5 (44–56) years; 3M/7F), psoriatic arthritis pts (PsA, CASPAR criteria; age 50(37-59) years; 3M/7F), healthy volunteers (age 37.5 (33–55) years; 3M/7F). All subjects were carefully age and gender matched with the CPPD pts. US examinations (“Voluson-i” (GE, USA), 4–13 MHz probe) were performed by one examiner. TFC of the wrist was assessed to detect US findings of crystal deposits.³ The Mann-Whitney U-test was applied for intergroup comparison.

Results: In all CPPD pts (100%) CC of TFC was detected in at least one joint. In the control groups intra-cartilaginous hyperechoic spots were found in 6 of 10

cases with RA (60% vs. 100%, $p=0.029$), in 2 with PsA (20% vs. 100%, $p<0.01$), 3 cases in healthy volunteers (30% vs. 100%, $p<0.01$).

Conclusions: The results of the present study indicate that US is a very sensitive and specific technique for detecting calcifications in patients with crystal-related arthropathy. The US findings were detected a trend of association between CC and RA. However, more studies, involving a larger number of pts, are required.

REFERENCES:

- [1] Sabchysyn V, et al. Concurrence of the rheumatoid arthritis and calcium pyrophosphate deposition disease: a case collection and review of the literature. *Sem Arthr Rheum* 2017 Nov. <http://dx.doi.org/10.2016/j.semarthrit.2017.11.009>
- [2] Gersing A, et al. Evaluation of chondrocalcinosis and associated knee joint degeneration using MRI imaging: data from osteoarthritis initiative. *Eur Radiol* 2017 Jun;27(6):2497–2506. doi:10.1007/s00330-016-4608-8
- [3] Filippou G, et al. Extend and distribution of CPP deposition in patients affected by calcium pyrophosphate dihydrate deposition disease: an ultrasonographic study. *Ann Rheum Dis* 2013;72(11):1836–9. <http://dx.doi.org/10.1136/annrheumdis-2012-202748>

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7130

FRI0591

WHOLE-BODY MRI DEMONSTRATES REDUCTION OF INFLAMMATION IN PERIPHERAL JOINTS AND ENTHESES DURING TNF-INHIBITOR TREATMENT IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS, BUT ALSO AGE-DEPENDENT PERSISTENT INFLAMMATION IN JOINTS PRONE TO OSTEOARTHRITIS

S. Krabbe^{1,2}, M. Østergaard^{1,2}, I. Eshed³, I.J. Sørensen^{1,2}, J. Møller⁴, B. Jensen¹, O.R. Madsen^{1,2}, M. Klarlund¹, S.J. Pedersen¹. ¹Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Rigshospitalet; ²Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark; ³Department of Diagnostic Imaging, Sheba Medical Center, affiliated to the Sackler School of Medicine, Tel Aviv University, Israel; ⁴Department of Radiology, Herlev Hospital, Herlev, Denmark

Background: Patients with predominantly axial spondyloarthritis (axSpA) may also have inflammation of peripheral joints and entheses. Using a whole-body MRI (WBMRI) approach, peripheral joints and entheses can be assessed objectively and followed during treatment.

Objectives: To describe the localization and extent of inflammation of peripheral joints and entheses by WBMRI in patients with axSpA initiating TNF-inhibitor therapy, and to assess treatment-induced changes.

Methods: Fifty-three patients that fulfilled the ASAS criteria for axSpA were included. MRI of SIJs and spine and WBMRI of peripheral joints and entheses were performed at baseline and 4/16/52 weeks after starting TNF inhibitor treatment. 75 peripheral joints and 30 peripheral entheses were scored in chronological order by an experienced musculoskeletal radiologist (IE). Osteitis, synovitis and enthesal soft tissue inflammation were scored separately [0(none)/1(mild)/2 (moderate/severe)]. A WBMRI peripheral joint and entheses index (WBMRI index) was derived by summing scores of all peripheral lesions.

Results: Median age (IQR/range) was 35 years. (28–44/22–73); median symptom duration was 5 years. (3–13/0–31); 53% were male. Baseline median WBMRI index ($n=53$) was 7.^{4–14}; 0–40 after 52 weeks ($n=46$) 4 (2–9; 0–26). WBMRI index decreased mean 0.6 at week 4 ($p=0.17$, paired t-test), 2.3 at week 16 ($p<0.001$) and 3.2 at week 52 ($p<0.001$). Thirty-seven patients (70%) had a relatively low baseline WBMRI index (≤ 10) with minor change over time, while patients with higher baseline scores tended to change more (figure 1A). The most frequently involved sites ($\geq 15\%$ of patients) were typical for SpA (sternoclavicular joint/plantar fascia) or osteoarthritis (carpometacarpal-1/metatarsophalangeal-1 synovitis). In univariate analysis, WBMRI index at week 52 was associated with age (2.5 higher per 10 years increase in age, $p<0.001$) and male sex (3.6 lower in men, $p=0.021$), but not with body-mass index, HLA-B27, C-reactive protein or ASDAS at week 52. In multivariate regression with age and sex as covariates, only age was significantly associated with WBMRI index (2.3 per 10 years increase in age, $p<0.001$) whereas sex was not ($p=0.24$).

In univariate analysis, higher age was not significantly associated with change in WBMRI index, but when adjusted for baseline WBMRI index, higher age was associated with a less prominent reduction in WBMRI index (+0.9 per 10 years increase in age).

A Individual patient trajectories

B Most frequently involved sites ($\geq 15\%$ of patients) for 46 patients with available data at baseline and 52 weeks of follow-up

	Baseline	52 weeks
JOINTS:		
Wrist synovitis	23	20
CMC1 synovitis	17	7
Ankle synovitis	11	7
MTP1 synovitis	15	10
MTP2-5 synovitis	9	5
Sternoclavicular synovitis	13	10
Sternoclavicular osteitis	16	11
Manubriosternal osteitis	7	5
Acromioclavicular synovitis	14	13
Shoulder synovitis	8	5
Knee synovitis	7	3
ENTHESES:		
Plantar fascia osteitis	7	4
Plantar fascia soft tissue infl.	6	2
Tuberculum humeri osteitis	8	8
Pubic symphysis osteitis	8	2
Greater trochanter soft tissue infl.	17	12

Conclusions: Inflammation of peripheral joints and entheses decreased over time in a cohort of patients with predominantly axSpA. Most patients had WBMRI index above zero during follow-up, and this was related to age and involved sites prone to osteoarthritis. Thus, the WBMRI Index may capture both disease activity related to axSpA and age-related degenerative changes.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2845

FRI0592

SCORING MRI INFLAMMATION AND STRUCTURAL LESIONS IN SACROILIAC JOINTS OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS: IS INTER-READER RELIABILITY DEPENDENT ON THE NUMBER OF MRI SLICES?

S. Krabbe^{1,2}, G. Kröber³, M. Østergaard^{1,2}, S.J. Pedersen¹, J. Møller⁴, I. J. Sørensen^{1,2}, B. Jensen¹, O.R. Madsen^{1,2}, M. Klarlund¹, U. Weber^{3,5}. ¹Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Rigshospitalet; ²Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen; ³King Christian X's Hospital for Rheumatic Diseases, Gråsten; ⁴Department of Radiology, Herlev Hospital, Herlev; ⁵University of Southern Denmark, Odense, Denmark

Background: The SPARCC sacroiliac joint (SIJ) scoring system assesses 6 semicoronal MRI slices for inflammation and 5 slices for structural lesions in patients with axial spondyloarthritis (axSpA).^{1,2} However, the cartilaginous SIJ compartment may show 1–2 additional slices anteriorly or posteriorly, depending on body size and scan orientation/tilt.

Objectives: To investigate inter-reader reliability of an “all slices” approach versus the standard SPARCC scoring of 6/5 slices.

Methods: Fifty-three patients with axSpA were treated with TNF inhibitor and had MRIs obtained at weeks 0/4/16/52. An experienced (UW) and two newly trained (GK, SK) blinded readers independently scored 199 SIJ MRI scans in chronological order. The cartilaginous SIJ compartment was scored slice by slice by the SPARCC 6/5 slices approach and by all available cartilaginous slices. Initially, the most anterior and posterior slices covering the cartilaginous compartment and the transitional slice were identified. The transitional slice was defined as the most anterior cartilaginous slice with the first portion of the ligamentous compartment, clearly visible on the left and/or right side. We scored SIJ inflammation, fat metaplasia, erosion and backfill, and a combined erosion and backfill score was created. Inter-reader reliability for reader pairs SK-UW/GK-UW/SK-GK was assessed using percent agreement (for individual scores) and intra-class correlation coefficients for sum scores.

Results: Pairwise percent agreement was 67%/63%/79% for identification of anterior slice, 47%/56%/44% for posterior slice and 69%/68%/72% for transitional slice. Using the “all slices” approach, readers UW/SK/GK scored mean 7.2/7.7/7.0 slices per MRI scan.

“6/5 slices” and “all slices” correlated closely with each other for status scores at baseline/status scores at week 52, and change scores at week 52; BME 0.983/0.985/0.983; fat metaplasia 0.994/0.982/0.953; erosion 0.981/0.974/0.957; backfill 0.993/0.983/0.978; combined erosion and backfill 0.983/0.971/0.919.