infection or neurovascular damage. Two patients reported transient limitation of the 5th and 1st digit extension following a biopsy of the wrist and 1st extensor compartment tendon sheath, respectively, with no detectable tendinous ruptures on US; 1 patient had a muscular hematoma of the extensor muscles of the forearm following an elbow biopsy.

	Patient & Biopsy characteristics (N=53)		
Age / Female	56 ± 18 years / 34 (64%)		
Diagnosis	21 RA, 13 UA, 8 septic, 5 crystal, 3 PsA, 1SpA, 2 other		
Disease duration	5.3 ± 7.1 years		
DAS28	4.3±1.2		
Clinical indication	42 diagnostic (79%), 11 research (21%)		
Joint size	16 large, 30 medium, 4 small, 2 bursa, 1 tendon sheath		
Infection confirmed	3/42 (7%)		
Immediate tolerance	29% very easy, 38% easy, 24% tolerable, 9% difficult		
Discomfort during procedure	36% no disc., 42% mild disc., 11% moderate disc., 5.5% mild pain, 5.5% intense pain		
Increase pain medication	13 (30%) in days following procedure		
Likelihood to repeat biopsy	41% very likely, 36% likely, 9% maybe, 14% unlikely		
Immediate AE	5 minor local bleeding, 1 transitory forearm extensor paralysis due to anesthesia		
Other AE	2 transient digit extension limitation (D5, D1), 1 muscular hematoma forearm		
	Pre-biopsy	**Post-biopsy**	**p-value**
VAS pain biopsied joint (mm)	62±25	46±29	0.001*
VAS stiffness biopsied joint (mm)	59±30	37±31	0.004*
VAS swelling biopsied joint (mm)	61±26	44±28	0.007*
US synovial thickness score	2.5±0.6	2.2±0.8	0.092
US Power Doppler score	1.0±1.2	1.0±1.1	0.414

*p-value significant at <0.05. AE, adverse events; D1, digit 1; D5, digit 5; DAS28, disease activity score 28 joints; disc., discomfort; PsA, psoriatic arthritis; RA, rheumatoid arthritis; SpA, spondyloarthritis; UA, undifferentiated arthritis; US, ultrasound; VAS, visual analogue scale.

Conclusions: In our center, USNB has proved to be an effective technique for collection of synovial membrane that can be used for diagnostic and research purposes. The vast majority of the procedures were well tolerated, without significant worsening of local joint symptoms or synovitis, and safe, without major adverse events. Importantly, patients' concordance to repeat a USNB was mostly high.

Disclosure of Interest: None declared

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FRI0679 WHOLE SPINE AND SIJ MRI OF PSORIATIC ARTHRITIS PATIENTS: DESCRIPTIVE STUDY OF THE SPINE, AND SACROILIAC JOINTS INVOLVEMENT IN A CROSS SECTIONAL LARGE COHORT

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Background: Detection of axial disease has important implications. Data on the structural changes of the spine and SIJ in PsA is mainly based on plain XR and MRI of SIJ. The prevalence and distribution of spinal changes in PsA as detected by MRI is largely unknown.

Objectives: To evaluate acute and structural changes in spine and SIJ by whole spine MRI performed in a consecutive clinical cohort of PsA.

Methods: Adult PsA (CASPAR criteria) patients were enrolled in the study. All underwent clinical exam, CRP, HLA-B27 tests, and MRI of the entire spine and SIJ. Spinal sagittal T1-W, STIR and semi-coronal T1-W and T2-W with fat saturation sequences of the SIJ were performed. The spine was scored for the presence of syndesmophytes, bone marrow edema (BME)/fatty corners and enthesitis. SIJS were scored (Berlin score) for the presence of BME, fatty replacement, erosions, sclerosis, and ankylosis. Findings were further categorized into active sacroiliitis (ASAS[1]), structural sacroiliitis, and spinal findings compatible with SpA (≥3 BME or ≥4 fatty corners[2]). All MRIs were evaluated by an experienced musculoskeletal radiologist, blinded to clinical data. Data were analyzed by SPSS Version 20.0.

Results: Ninety six patients completed the study.(Table1) Active/structural/total sacroiliitis was detected in 26%/11.5%/37.5% of patients, respectively. Spinal SpA was demonstrated in 15.6%.(Table 2) Isolated spinal changes were detected in 2.1% of the cohort. Presence of inflammatory back pain (IBP) by ASAS correlated with the prevalence of active sacroiliitis (p 0.024) and SpA (axial/SIJ) (p 0.003). The extent of psoriasis severity (PASI) correlated with both SIJ and whole spine SpA changes. (*p 0.02 for both*) Gender differences or biologic therapy did not affect the prevalence of SIJ or spine involvement.

Table 1. Demographic and clinical data

Age (mean, yr)	50±13
Gender M:F	50:46
Psoriasis/PsA duration (mean, yr)	19±13.6/9±8
PASI	3.9±8.9
ASDAS-CRP	2.2±1
Back pain (%)/Inflammatory back pain by ASAS (%)	70%/30%
HLA-B27 (%)	4.4%
Current DMARD Tx (%)/Current biologic Tx (%)	45%/35%

Table 2. Whole spine MRI findings

	N (%) patients
Active Inflammatory Lesions	
≥1 BME corner	22 (23%)
≥1 posterior elements enthesitis	4 (4%)
Structural Lesions	
≥1 corner erosion	10 (10.4%)
≥1 fatty corner	30 (31%)
≥1 syndesmophytes	30 (31%)
Distribution of inflammatory lesions:	
Cervical 2.1%, Thoracic 18.8%, Lumbar 14.6%	
Distribution of structural lesions:	
Cervical 10.4%, Thoracic 32.3%, Lumbar 25%	

Conclusions: In the present PsA cohort, active and structural sacroiliitis was more prevalent vs typical spinal SpA changes. In particular, there was a paucity of SpA changes in the cervical spine. The most prominent axial findings included fatty corners and syndesmophytes. IBP presence and extensive skin disease correlated with SpA axial and SIJ changes.

References:

[1] Lambert RG. Ann Rheum Dis. 2016,75.
[2] Hermann KG. Ann Rheum Dis 2012.71.

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FRI0680 SYNOVIAL INTENSITY MEASURED BY ULTRASONOGRAPHY AS AN INDICATOR FOR JOINT INFLAMMATION IN RHEUMATOID ARTHRITIS PATIENTS UNDER TREATMENT

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Background: Ultrasonography (US) is a useful modality that can directly visualize RA joint inflammation. Recently, brightness of thickened synovium is considered to associate with local synovitis. However the accuracy of US findings with the local pathophysiology remains uncertain since synovial biopsy could be heterogeneous depending on the biopsy site and can be influenced by various medications. On another front, synovial fluid (SF) is homogenous, easy to access and contains abundant inflammatory cytokines and growth factors, which play an important role in the local pathogenesis of RA. However, the association between SF proteins and joint US findings is not clear.

Objectives: To clarify whether synovitis detected by US including synovial hypertrophy, vascularity and brightness reflect local joint molecular pathophysiology.

Methods: Forty-four RA patients were recruited. All patients were performed standardized US examination of knee joint. US images were evaluated by semi-quantitative scoring (synovial hypertrophy; grey scale (GS) US, vascularity; power Doppler (PD) US) and quantitative analysis by using Image J (National Institutes of Health, MD, Maryland USA). The average of the pixels of synovial tissue area (GS quant), PD signal area (PD quant) and mean gray values of synovium (Brightness) in 3 areas of the knee joint were calculated. US guided SF aspiration was performed on the same day and concentrations of cytokines and growth factors were measured by Cytometric Beads Array. (BD Biosciences, NJ, USA)

Results: Median age, disease duration and DAS28-ESR were 64 years, 1.5 years and 5.2 respectively. Mean GSUS and PDUS were 2.3 and 2.0. Nineteen patients were untreated. US inflammatory findings especially PD quant were well correlated with corresponding SF IL-6, IL-8, IL-1β and IL-10.(range of rho;0.40–0.72, $p<0.05$) synovial brightness also inversely correlated with SF VEGF (rho=-0.41, $p<0.05$). When we analyzed untreated and treated RA patients separately, GS quant did not correlate with any SF cytokines in treated group although, PD quant and brightness both significantly correlated with SF IL-6 and VEGF ($p<0.05$). Next, we divided the treated patients into 4 groups according to median of brightness and GS quant to compare the SF IL-6 levels. This analysis showed that SF IL-6 levels were influenced by synovial brightness rather than its hypertrophy. ($p<0.05$)

Conclusions: Our results suggest that not only US PD signals but also synovial brightness is a useful indicator for joint inflammation rather than synovial hypertrophy itself in treated RA patients.

References:

[1] Naredo E et al. Arthritis Rheum 2008; 58: 2248–56.
[2] Kelly S et al. Arthritis Res Ther. 2015 Mar 13;17:58.

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