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Disclosure of Interests: Ljiljana Smiljanic Tomicevic Speakers bureau: Novartis, Sandoz, Abbvie, Pfizer, Alvogen, Darja Cubelic Speakers bureau: Merck Sharp & Dohme, Abbot, Krka, Astrazeneca, Pliva, Boehringer Ingelheim, Berlin-Chemie Menarini, Goran Sukara Speakers bureau: Novartis, Sandoz, Abbvie, Pfizer, Alvogen, Roche, Branimir Anic Speakers bureau: Novartis, Sandoz, Abbvie, Pfizer, Alvogen, Roche, MSD, Octapharma, Miroslav Mayer Speakers bureau: Novartis, Sandoz, Abbvie, Pfizer, Alvogen, Roche, MSD, Octapharma

DOI: 10.1136/annrheumdis-2019-eular.7729

AB1161 ULTRASOUND IMAGING IN EVALUATION OF ENTHESITIS: STATUS AND PERSPECTIVES

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Background: The high-frequency ultrasound is a reliable method to identify enthesitis, including subclinical and early diagnosis, in patients with psoriasis (Pso) and psoriatic arthritis (PsA)¹.

Objectives: To establish an epidemiological profile of patients with Pso and/or subclinical and clinical PsA; to establish the ultrasound (US) profile with gray scale and Doppler in entheses in these groups.

Methods: A case control study conducted in the period from December 2015 to December 2016, at Hospital das Clínicas/UFG. It was performed in 144 patients with Pso and/or PsA and 24 healthy controls. Patients with and without arthritis/enthesitis were submitted to the US. The US findings were according to the MASEI (the Madrid sonography enthesitis index). The entheses were studied bilaterally: plantar fascia, distal calcaneal tendon, distal and proximal ligament of the patella, distal quadriceps and tendons of the brachial triceps. In addition to the US in the 2nd and 3rd distal interphalanges. The interobserver reliability was calculated in 24 patients - kappa index (κ).

Results: In the case group the mean age was 50.13 years, BMI of 28.14; duration of illness of 16 years; **Mean±SD PASI: 5.34±6.03; PEST:2.21±1.66 and DLQI:4.39±5.16.** Of the total 90.3% of the patients presented Pso; 39.8% APs already diagnosed and 77.8% with signs of US enthesopathy. Of the total of the 1728 entheses evaluated in the case group and the control group of 288 structures evaluated. The most common sign in both groups was the thickening, being more seen in the calcaneus tendon (table). The MASEI score was significantly higher in patients with Pso and PsA than in the control group and had correlation with **PEST: r= 0,397, p<0,001 and IMC: r=0,208, p= 0,012.** Of the 288 nail insertion of the 2nd and 3rd distal interphalangeal, presented some type of enthesopathy to the US, like thickening (**34,7%, p=0,036 to 0,003**) or loss of the trilaminar pattern (**31,6%, p= 0,027 to 0,004**) and the most common change was positive PD (**61,1%, p<0,001**). Of the total nails evaluated only 17.5% had clinic injury. And the κ values weighted for the US findings showed excellent agreement (**0.930 and 1**) for PD and erosions, respectively. The epidemiological profile of patients with Pso and/or subclinical and clinical PsA were overweight. As for the US profile, the majority presented signs of enthesopathy, where the most frequent occurrence was the calcaneal tendon, and the Doppler was the most affected topography of the triceps tendon.

Conclusion: The ultrasonography shows an important perspective in assessing entheses these patients.

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Table: MASEI score:

Ultrasound Findings	Case (n=144)	Control (n=24)	p
Number of entheses changed	1728	288	
Structure (n (%))	472 (27,3)	16 (5,6)	< 0,001
Thickening (n (%))	503 (29,1)	37 (12,8)	< 0,001
Bursitis (n (%))*	95 (16,5)	05 (1,73)	0,004
Erosion n (%))	48 (2,8)	02 (0,7)	0,035
Calcification (n (%))	373 (21,6)	34 (11,8)	< 0,001
PD(n (%))	124 (7,2)	08 (2,8)	0,005

Test: Chi-Square; (PD: power Doppler).

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.3836

AB1162 ARE SONOGRAPHIC FINDINGS CORRELATED WITH DISEASE ACTIVITY SCORE IN RHEUMATOID ARTHRITIS REMITTED PATIENTS?

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Background: Obtaining remission is the ultimate and now attainable goal of treatment in rheumatoid arthritis (RA). However, the definition of remission kept changing over the last decade. Several composite scores and indices are now validated to assess remitting RA such as the Disease Activity Index 28 joints (DAS28), and more recently, the Simplified Disease Index (SDAI) and the Clinical Disease Index (CDAI). Despite more stringent definition criteria, progressive radiographic damages still occur in RA patients who reached remission. Defining other criteria for remission including ultrasound (US) might help preventing such evolution.

Objectives: The aim of this study was to compare US findings and composite score results in RA patients that achieved a status of remission according to DAS28.

Methods: Thirty Tunisian patients followed up for RA with DAS28 ≤2,6 for at least three months were enrolled. Among them, we identified patients in remission according to the SDAI (≤3,3) and the CDAI (≤2,8). US (Esaote MyLab 60 machine and a 13-18 MHz linear array transducer) was performed by an experienced rheumatologist blinded to clinical and laboratory data. For each patient, 22 joints were scanned (wrists, metacarpophalangeal, and proximal interphalangeal joints) using a semi-quantitative score.

Results: Over the 26 patients in CDAI remission, ultrasonographic synovitis in B-mode were noted in 81% of patients. The average ultrasound score per patient was 4.58. In PD mode, US abnormalities were noted in 58% of patients. The average PD score per patient was 2.6. Neither correlation between CDAI and B-mode US score (r = 0.104; p = 0.319) nor between CDAI and DP US score (r = 0.251; p = 0.217) was noted.

	US findings	Grade 0	Grade 1	Grade 2	Grade 3
Patients in CDAI remission	Synovial hypertrophy	491	48	28	5
	PD positive	535	14	15	8
Patients in SDAI remission	Synovial hypertrophy	365	34	16	3
	PD positive	396	6	9	7

B-mode examination of the 19 patients in SDAI remission detected synovitis in 79% of patients. The average ultrasound score per patient was 3.95. PD signal was positive in 53% of patients. The average PD-US score per patient was 2.3. Likewise, no correlation with SDAI was found neither with B-mode US score (r = 0.99; p = 0.687) nor with DP US score (r=0,036; p=0,884).

Conclusion: Thanks to the therapeutic armory we dispose of and the treat-to-target approach, remission is now a reachable goal. However, defining this goal is no easy task. Including US parameters in definition criteria of remission might help to detect subclinical evolving RA and adjust treatment in such cases.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8284

AB1163

CAN A MUSCULOSKELETAL ULTRASOUND REPORT CHANGE A RHEUMATOLOGIST'S OPINION?

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Background: The era of musculoskeletal ultrasound (MSUS) is becoming enormous, but the extent to which MSUS has influenced management plans for patients with different musculoskeletal symptoms remains questionable.

Objectives: To assess the changes in the provisional diagnosis and treatment decisions made by rheumatologists after receiving MSUS reports for their patients.

Methods: This study has been carried out at Rheumatology & Rehabilitation outpatient clinics in Zagazig University Hospitals in Egypt. This is an observational study on 101 patients with musculoskeletal complaints who have been referred by rheumatologists for a MSUS scan at Zagazig University MSUS Unit in the same department. The patients' mean age was 41.5 ± 15.67 , including 70 females (69.3%) and 31 males (30.7%). Patients included 29 patients with hand/wrist complaints (28.7%), 2 patients with elbow pain (2%), 36 patients with shoulder pain (35.6%), 7 patients with ankle/foot pain (6.9%), 10 patients with knee pain (9.9%), and 17 patients with polyarticular pain (16.8%). The rheumatologists were asked to set a provisional diagnosis and treatment plan before the MSUS scan and to reconsider their own plan for any adjustments afterwards.

Results: Regarding all 101 patients, the diagnosis & treatment decisions were changed in 37% and 65% respectively after the MSUS scan as shown in figure (1). Fifty percent of the changes in treatment were classified as minor in the form of adding/changing the type of NSAIDs, adding/changing the dose of steroids, changing the dose of DMARDs and adding/modifying physiotherapy while the other 50% were major in the form of initiating/adding DMARDs, interventional treatment or referral to surgery. Ten patients out of 29 with hand/wrist complaints encountered change in diagnosis (34.5%), 1 patient out of 2 with elbow pain (50%) and 11 patients out of 36 with shoulder pain (30.6%). In patients with knee pain and ankle/foot pain, changes occurred with 4 patients for each representing 40% and 42.9% respectively. Regarding patients with polyarticular complaints 8 patients representing 47.1% were categorized to different disease entities. Treatment decisions were much more frequently changed as more pathological details were clarified by MSUS. Treatment decision changes occurred in 83.3% of patients with shoulder pain 70% of which were minor mainly due to better evaluation of rotator cuff syndromes grading tears and detecting bursitis. While for knee pain 50% of treatment decisions were changed of which 60% were major as in knee osteoarthritis detection of significant synovitis & Baker's cysts lead to interventional treatment. Regarding patients with hand/wrist & polyarticular complaints, 44.8% and 68.8% of treatment decisions were changed respectively of which 75% and 90.8% were major owing mainly to changes in diagnosis & detecting subclinical activity. Finally regarding ankle/foot pain, treatment changes happened in 71.4% of which 80% were minor.

Figure 1

Conclusion: MSUS scans have a great impact on rheumatologists' decisions in clinical practice. Remarkable changes in diagnosis with subsequent significant major changes in treatment plans were due to the ability of MSUS to differentiate between different disease entities. Changes in treatment decisions were very frequent even without changing the diagnosis owing to a more detailed look into the diseased joint and surrounding structures.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.2874

AB1164

EDUCATION ON PEDIATRIC MUSCULOSKELETAL ULTRASOUND: A SYSTEMATIC LITERATURE AND EVENTS REVIEW

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Background: Recently some Pediatric musculoskeletal ultrasound (PedMSUS) courses have been held on national and international ground. Nonetheless, content, conduct and format of PedMSUS courses have never been investigated and shared.

Objectives: To perform a systematic literature and events review on PedMSUS educational initiatives.

Methods: Educational material/events on PedMSUS were extensively searched on websites/networks (PubMed, Cochrane, Embase, ERIC, Medline, CINAHL complete, Google, Yahoo, Ask, Baidu, Bing, Lycos, Duckduckgo). The keywords were: "musculoskeletal", "ultrasound", "sonography", "course", "education", "training", "children", "paediatrics", "pediatrics". Only courses/events, articles and books in English were considered. Descriptive analysis was performed on the documentation retrieved.

Results: No articles neither books on educational recommendations for PedMSUS courses were found. A total of 13 PedMSUS courses were identified. Two online courses and three residential ones were not consistent with the purpose and were excluded. Eight courses were finally included for the analysis (Figure 1). Seven were endorsed by EULAR and followed the recommendations for the content and conduct of EULAR MSUS courses. No requirements/skills should be fulfilled for registration; only one level of competency was proposed. The courses were residential of 2-3 days and included theoretical and practical lessons. Lectures were on MSUS examination techniques, physiological musculoskeletal (MSK) anatomy and basic pathology in pediatric rheumatology. Hands-on scanning of healthy models/patients with pediatric rheumatic diseases was generally organized in groups supervised by tutors, and included optimization of the machine settings, identification of pediatric MSK sonography, correct acquisition of images, and identification of basic pathological findings in children. A competency assessment was performed at the end of only three courses.