REFERENCES

- [1] Olmez MO, Gunal EK, Ureyen SB, Keskin H, Ozturk AB, Yeter G, Cobanoglu E, Aydin SZ. Comparison of composite indices with global synovitis score on ultrasound for detecting remission. *Clin Rheumatol*. 2018 Apr;37(4):1111-1114.
- [2] E Naredo, L Valor, I De la Torre, J Martínez Barrio, M Hinojosa F Aramburu et al. Ultrasound Joint Inflammation in Rheumatoid Arthritis in Clinical Remission: How Many and Which Joints Should Be Assessed? *Rheumatoid Arthritis* Vol65, Issue4 Apr 2013: 512-517

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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.

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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.

Abstract AB1164 Table 1. Main features of the 8 PedMSUS courses analysed.

n	PedMSUS course	Duration, days	n max Attendees	n Faculties	n Tutors	Theory, hours (%)	Practice, hours (%)	Fee, €
1	Paediatric musculoskeletal ultrasound course, Madrid – Spain, 2012	3	50	14	14	9 (56)	7 (44)	NS
2	4th musculoskeletal sonography course for rheumatologists - basic level pediatric course, Belgrade – Serbia, 2013	3	40	18	13	9 (56)	7 (44)	800*, 600#
3	5th musculoskeletal sonography course - basic level paediatric rheumatology, Belgrade – Serbia, 2015	3	40	12	9	9 (56)	7 (44)	800*, 600#
4	Musculoskeletal ultrasound course basic pediatric, Bucharest – Romania, 2016	3	36	10	13	9 (56)	7 (44)	850*
5	EULAR ultrasound course - PReS paediatric musculoskeletal course, Madrid – Spain, 2017	3	50	10	14	9 (56)	7 (44)	1600*
6	Musculoskeletal ultrasound in pediatric patients, Aarhus – Denmark, 2018	2	20	3	4	8 (57)	6 (43)	SS
7	Paediatric musculoskeletal ultrasound course, Antalya – Turkey, 2018	3	60	11	11	7 (50)	7 (50)	950*
8	Paediatric musculoskeletal basic ultrasound course, Lisbon – Portugal, 2018	3	50	11	17	9 (56)	7 (44)	1100*, 800#@

Figure 1. Flow chart of the systematic literature and events review.**Figure 1**

Legend: NS, not specified; EULAR, European League Against Rheumatism; PReS, Paediatric Rheumatology European Society. *, accommodation, meals and coffee breaks included; #, accommodation excluded; SS, supported by Sponsors; @, dinners excluded.

Conclusion: Almost all PedMSUS courses held were under EULAR endorsement. Slightly variable features were found among courses, apart being all at only one level of competency. An international initiative is deserved for identifying shared recommendations on the best suited content, conduct and format of future PedMSUS courses.

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AB1165 FLUORESCENCE OPTICAL IMAGING XIRALITE® IS HELPFUL IN THE DECISION FOR RITUXIMAB RE-THERAPY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rituximab (RTX) is an effective and well-tolerated therapeutic option in rheumatoid arthritis (RA) patients with insufficient response to TNF α inhibitors. However, the exact time point of RTX re-therapy often varies and objective parameters (e.g. imaging, such as MRI and/or musculoskeletal ultrasound [US]) are not yet included in the RA treatment strategy [1].

Objectives: The aim of this study was to evaluate the ability of the fluorescence optical imaging Xiralite® (FOI) to predict RTX re-therapy in RA patients - in comparison to clinical, laboratory and US.

Methods: In this study, n=31 patients with established RA were included and prospectively followed over one year by DAS28, patient's global VAS (0-100 mm), CRP/ESR, US7 score (for synovitis and tenosynovitis in greyscale and power Doppler of the clinically dominant hand/foot; [2]), and by FOI (phases 1-3 and PrimaVistaMode [PVM]) at baseline (before RTX), and after 3, 6, and 12 months. The need for RTX re-therapy was defined according to DAS28 response criteria by EULAR [3].

Results: Of the included 31 patients (female 77.4%, mean age 60.1 $\pm$ 11.4, mean disease duration 14.9 $\pm$ 7.1 years), n=14 (45.2%) received RTX re-therapy within 12 months: n=3 after 6 months (mths), n=4 after 7 mths, n=5 after 9 mths, and n=2 after 10 mths. In the group with RTX re-therapy, FOI in PVM mode was the only parameter that presented significant increase (beta 0.40, CI 0.08-0.71; p=0.013) – compared to the group without re-therapy. In the prediction model via receiver operating characteristic (ROC) analysis, FOI in PVM reached the highest values of all imaging parameters (phases 1-3, US) at baseline for the prediction of re-therapy over one year with an area under the curve (AUC) of 0.64 (OR 0.9, CI 0.79-1.03), however, without significance (p=0.117). Patient's VAS and CRP had similar predictive power with AUC of 0.66 each (each p=ns).

Conclusion: The FOI Xiralite® in PVM is able to discriminate between groups with and without need for RTX re-therapy better than other included imaging parameters. It is able to predict the need for RTX re-therapy with comparable predictive power to patient's VAS and CRP. At the same time, FOI is a more objective tool, while patient's VAS and CRP can also depend on other influence (i.e. psychological, infectious) factors.

Figure:

Left image above shows FOI in PVM of both hands at baseline (before RTX). Right image above shows FOI in PVM of the same patient at 3 months follow-up. Left image below shows FOI in PVM of the same patient at 6 months follow-up. Right image below shows FOI in PVM of the same patient at 12 months follow-up. This patient received re-therapy with RTX after 9 months

Legend: FOI: fluorescence optical imaging; PVM: PrimaVista Mode; RTX: rituximab

REFERENCES

- [1] Smolen JS, Landewé R, Bijlsma J, et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2016 update. *Ann Rheum Dis.* 2017 Jun;76 (6):960-977.
- [2] Backhaus M, Ohrndorf S, Kellner H, et al. Evaluation of a novel 7-joint ultrasound score in daily rheumatologic practice: a pilot project. *Arthritis Rheum.* 2009;61(9):1194-201.