AB1033 THE EXPRESSION OF IMMUNOGLOBULIN G AND IMMUNOGLOBULIN G4 IN LYMPHOMA

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Background: Although IgG4-related disease has been gradually recognized, its relationship with malignant diseases, especially lymphoma has been an eternal topic.
Objectives: To explore the expression of IgG4 positive cells in lymphoma.
Methods: Surgical excision specimens with definite diagnosis of lymphoma from January to December, 2013 were collected. Hematoxylin-eosin staining and immunohistochemical staining of IgG and IgG4 were then evaluated on dense lymphoplasmacytic infiltration, storiform fibrosis and obliterative phlebitis. For the quantification of IgG and IgG4 positive cells, the areas with the highest density of positive cells were evaluated. Three high-powered fields (hpf) in each section were analyzed, and the average number of positive cells per hpf was calculated.
Results: 16 patients with lymphoma were selected in our study. There were 9 males and 7 females with an average age of 51 years old. The pathologic type included 13 cases of non-Hodgkin lymphoma and 3 cases of Hodgkin lymphoma. Sub types of Non-Hodgkin lymphoma contained 8 cases of diffuse large B cell lymphoma, 2 cases of small B cell lymphoma, 1 case of mucosa accociated lymphoid tissue marginal zone B cell lymphoma (MALToma), follicular lymphoma, peripheral T-cell lymphoma and hepatosplenic T-cell lymphoma. The 16 specimens all manifested as dense lymphocytic infiltration, accompanied by atypical lymphocytes. Proliferation of fibrous tissue was only seen in one specimen. 14 cases were IgG positive with the highest cell count from 20–350/hpf. IgG can be expressed in both cytoplasm and cytomembrane. 2 cases of IgG4 positive were Hodgkin lymphoma and the highest cell counts were 11 and 12/hpf respectively.
Conclusions: IgG4 positive cell, fibrosis and obliterative phlebitis seldom appear in lymphoma. Added specific tumor signature molecules, it may not be difficult to distinguish lymphoma from IgG4-related disease.

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AB1034 SCORING SYSTEMS OF MUSCLE MRI IN IDIOPATHIC INFLAMMATORY MYOPATHIES

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Background: MRI is a widely used radiological method for assessing muscle involvement in idiopathic inflammatory myopathies (IIM). There is still no universally accepted and validated scoring protocol for the quantification of pathological changes in muscles.
Objectives: To identify MRI scoring systems used in previous studies. To summarize the most frequently evaluated MRI features and to suggest parameters for a unified scoring system, that has to be validated in the future.
Methods: A detailed literature search was conducted in the standard medical databases. Information regarding individual MRI scoring systems were obtained from the methodological explanations and their parameters were compared.

Results: We identified different scoring systems with a large variability of assessed localizations and parameters (Table 1). Muscle oedema as a sign of active muscle inflammation was evaluated in all studies. There were some studies using modified Mercuri score for evaluation of the fatty infiltration as a marker of chronic muscle damage or the Goutallier grading (1, 2), developed originally for the assessment of inherited neuromuscular disorders or structural changes in orthopedics. Perifascicular oedema or soft-tissue oedema were also assessed in some cases. There was no concordance between evaluated muscle groups.
Conclusions: MRI plays a significant role in the evaluation of pathological changes in IIM. This search demonstrated, that there is no widely used, standardized method for assessment of a MRI finding. According to our results, a future concept of MRI scoring system should include evaluation of muscle oedema, fatty infiltration and possibly also the presence of perifascicular (-fascial) and subcutaneous tissue inflammation. Muscle groups most convenient for evaluation have to be determined as well.

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AB1035 EXAMINATION OF ULTRASOUND FINDINGS IN UNDIFFERENTIATED SPONDYLOARTHRITIS PATIENTS WITH DACTYLITIS

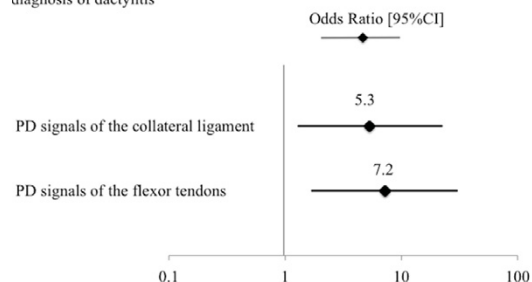K. Fujikawa [1], Y. Endo [1], A. Mizokami [1], M. Mine [2], A. Kawakami [3]. [1] Rheumatology, Japan Community Healthcare Organization, Isahaya General Hospital; [2] Rheumatology, Suga Orthopedic Hospital, Isahaya; [3] Immunology and Rheumatology, Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki, Japan

Objectives: To evaluate the ultrasound findings in undifferentiated spondyloarthritis (uSpA) patients with or without dactylitis.
Methods: Between April 2014 and December 2016, sixty-six patients with uSpA diagnosed at our center were consecutively enrolled. The diagnosis of uSpA was made by the Japan College of Rheumatology (JCR)-certified rheumatologists and dactylitis was defined as sausage-digit appearance. Ultrasound, clinical and laboratory findings at diagnosis in patients with dactylitis (dactylitis group; n=30) were compared to those without dactylitis (non-dactylitis group; n=36). Grey scale (GS) and power Doppler (PD) signals of the wrist and finger joints, PD signal of extensor and flexor tendon sheaths, and PD signals of the collateral ligament of the fingers in both hands were assessed by ultrasound. Ultrasound assessment was made by JCR-registered sonographers.
Results: There were no significant differences in clinical and laboratory findings, including inflammatory back pain, arthritis of the lower limbs, tenderness of the entheses, radiographic/MRI changes of sacroiliac joint and HLA-B27 allele frequency, between two groups. In ultrasound findings, the dactylitis group had significantly more PD signals of the flexor tendon sheaths (83% vs. 22%, p<0.0001), the collateral ligament (83% vs. 25%, p<0.0001), and the MCP joint (30% vs. 3%, p<0.01) as compared with the non-dactylitis group. In logistic

Figure 1. Logistic regression analysis of ultrasound findings for the contribution of diagnosis of dactylitis

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Abstract AB1034 – Table 1. Muscle MRI scoring systems

Author	Muscle oedema	Fatty infiltration	Sequences	Muscle groups	Other aspects
Pipitone 2016	1 = present, 0 = absent	–	STIR	17 bilat.	–
Andersson 2015	1 = present, 0 = absent	0 - 4 Goutallier gr.	T1W, STIR	thigh, NS	–
Malattia 2014	0 = no abnormalities, 1 = mild-moderate <50%, 2 = high degree >50%	–	STIR	42 (whole body MRI)	perifascicular + subcutaneous tissue inflammation
Zheng 2014	0–5 scale from normal to moderate intrafascicular global oedema	0–5 modif. Mercuri score	T1W, STIR	12, thigh muscles bilat.	–
Davis 2011	0 = absent, 1 = mild, 2 = moderate, 3 = severe	–	STIR	4, thigh bilat.	soft-tissue + perifascicular oedema
Studynkova 2007	VAS 0–10	–	STIR	thigh muscles, NS	muscle oedema extent + total MRI affection

STIR = short-tau inversion recovery, NS = not specified, T1W = T1 weighted sequences, VAS = visual analogue scale.

regression analysis, the PD signals of the flexor tendons and collateral ligament were independent contributors to a diagnosis of dactylitis (Figure 1).

Conclusions: Development of active inflammation of enthesis organ determined by ultrasound is supposed to associate importantly with the judgment as dactylitis in patients with uSpA.

AB1036 **PREDICTIVE VALUE OF BASAL REACTANTS IN AN EARLY ARTHRITIS CLINIC. DOES ESR ELEVATION CRITERIA MAKE A DIFFERENCE?**

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Background: The presence of high acute phase reactants may help the diagnosis and classification of patients with rheumatoid arthritis, specially in seronegative patients.

Objectives: Our objective was to establish if the presence of high basal reactants in early arthritis may help to establish the diagnosis of rheumatoid arthritis following criteria of ACR 1987 (which does not include positive reactants in diagnostic criteria). at 12 months of follow-up.

Methods: The presence of acute phase reactants at the baseline visit (elevated CRP and elevated ESR according to two different criteria) was studied in a population of 70 patients referred to the arthritis clinic with criteria for suspicion of early arthritis to meet at least one of the Following criteria: a) Swelling in 2 or more joints b) Pain in MCFs, MTFs and/or wrists c) Morning stiffness greater than 30 minutes (* SERAP study criteria), with <12 months of evolution of symptoms. None of the patients had previous diagnosis of rheumatoid arthritis or other inflammatory joint disease nor had previous treatment with steroids or DMARDs. The presence of high VSG (mm/h) was considered according to two criteria: a) ESR 1: VSG>20 or b) ESR 2 (criterion according to age and sex) (1): Age ≥50 years ESR>20 in men and ESR>30 in women; Age <50 years of age, ESR>15 mm/h in men and>20 in women.Statistics: Chi-square or Fisher test (for any value <5), Odds ratio (OR) calculation.

Results: 70 patientes, 45 women (64,3%), x age 51,57±16,08 y (18–85) were included, x disease duration 3,47 meses ± 2,59 (0,53–11.73), 48/70 (68,5%) RF and ACPA negative. 49 patients meet ACR 1987 criteria, but 5 were finally classified in non-RA group because they meet criteria of other inflammatory chronic articular conditions (eg. psoriatic arthritis RA-like). 45/70 patients had high baseline CRP (64.3%), ESR 1 38/70 (54.3%) and ESR 2 35/70 (50%). Basal CRP>5 showed statistically significant differences for RA diagnosis (ACR 1987 criteria) p=0.003, OR =4,64 (1.62–13,24) but basal positive ESR 1 criteria did not (p=0.122). Basal positive ESR2 showed significant differences for diagnosis of RA, with p=0.036, OR =2,78 (0,99–7,47). In the subgroup of seronegative patients, basal CRP could predict ACR 1987 RA diagnosis at 12 months follow-up p=0,019, OR 4,2 (1,23–14,36), but ESR (both ESR1 and ESR2) not (p=1,000). If the 5 patients ACR 1987 meeting criteria RA-like but diagnosed of other inflammatory conditions were included, the results are similar but ESR2 reached a better confidence interval p=0.036, OR 3,63 (1,20–10,94).

RA ACR 1987 CRITERIA 44 P.T		RA YES	P univariate	OR	IC 95 %
CRP	YES	34/45 (75,5%)	0,003	4,64	(1,62-13,24)
	NO	10/25 (40%)			
ESR1	YES	30/38 (78,9%)	0,122 NS	-	-
	NO	19/32 (59,4%)			
ESR2	YES	26/35 (74,3%)	0,048	2,78	(0,99-7,47)
	NO	18/35 (51,4%)			
CRP seronegative	YES	18/28 (64,3%)	0,019	4,2	(1,23-14,36)
	NO	6/20(30%)			

ACR 1987 CRITERIA (AR+AR-LIKE) 49 P.T		RA YES	P univariate	OR	IC 95 %
CRP	YES	37/45 (82,2%)	0,006	5,01	(1,67-14,98)
	NO	12/25 (48%)			
ESR1	YES	30/38 (78,9%)	0,116 NS	-	-
	NO	19/32 (59,4%)			
ESR2	YES	29/35 (82,8%)	0,036	3,63	(1,20-10,94)
	NO	20/35 (57,1%)			

Conclusions: The presence of elevated basal CRP>5 may be used as a factor that helps to predict the diagnosis of rheumatoid arthritis according to ACR 1987 criteria for RA. The baseline elevated ESR according to the sex and age criterion could be useful as a predictor factor for the diagnosis of rheumatoid arthritis, while the VSG criterion>20 in all patients does not demonstrate differences in the study between the two groups with final diagnosis AR and non-RA. In seronegative patientes, only CRP demostrated predictive value but ESR not.

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AB1037 **INTEROBSERVER RELIABILITY OF KNEE OSTEOARTHRITIS LESIONS USING MUSCULOSKELETAL ULTRASOUND: DIFFERENCES BETWEEN STATIC VERSUS REAL TIME READING**

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Background: Musculoskeletal ultrasound (MSU) is an imaging technique proved to be valid in several musculoskeletal conditions. In osteoarthritis (OA) it allows the identification of inflammation and structural damage. However, MSU is an operator dependent method and its widespread use has been hampered by questions related to the reliability of both, image acquisition and image interpretation.

Objectives: The objective of this study was 1) to evaluate the interobserver reliability of knee OA according to the definitions used by the OMERACT reliability exercise of inflammatory and structural abnormalities in patients with knee osteoarthritis using ultrasound and 2) to compare the interobserver reliability on previous collected images (static reading, thereafter) versus after the acquisition and interpretation of images in real time (real time reading, thereafter).

Methods: A reliability exercise based on the reading of US images was conducted by two experienced rheumatologists in MSU. A set of 59 images of both, normal and OA knee lesions were collected for the static reading. A set of 20 knees were scanned by each rheumatologist for the real time reading. Dichotomous and semi-quantitative scoring (0–3) was performed for the presence of damage on the condrosynovial margin, osteochondral margin and matrix of the throchlear cartilage, osteophytes at the lateral and medial femoral condyle and proximal tibia, medial and lateral meniscal extrusion and Baker's cyst. Interobserver reliability was calculated by the Cohen's kappa coefficient.

Results: Interobserver reliability scores for the static reading were good for cartilage damage, meniscal extrusion and Baker's cyst, while they were excellent for the presence of osteophytes. The scores for the real time reading were poor to moderate for cartilage damage, osteophytes and Baker's cyst and good for meniscal extrusion. These results are shown in Table 1.

Table 1. Interobserver κ values for agreement of the static and real time reading of US abnormalities in knee osteoarthritis

Lesion	Static reading κ (SE)	Real time reading κ (SE)
Condrosynovial margin	0,588 (0,180)	0,588 (0,180)
Cartilage matrix	0,732 (0,118)	0,317 (0,143)
Osteochondral margin	0,658 (0,148)	0,251 (0,163)
Medial condyle osteophyte	0,538 (0,176)	0,412 (0,213)
Lateral condyle osteophyte	0,792 (0,194)	0,385 (0,228)
Medial tibial osteophyte	0,865 (0,129)	0,490 (0,96)
Lateral tibial osteophyte	0,744 (0,236)	0,432 (0,213)
Medial meniscal extrusion	0,673 (0,204)	0,704 (0,159)
Lateral meniscal extrusion	0,633 (0,234)	0,573 (0,185)
Baker's cyst	0,714 (0,256)	0,490 (0,960)

Conclusions: This exercise shows that the interobserver reliability of MSU for the detection of knee OA lesions is widely different depending on the type of reading (static versus real time). Although MSU seems to be reliable for the detection of knee OA lesions, caution needs to be taken in the interpretation of published data regarding the type of reading exercise performed.

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AB1038 **INFLUENCE OF AGE ON ENTHESIS IN TUNISIAN PEOPLE: AN ULTRASOUND STUDY**

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Background: By aging, many changes occur in the different components of the locomotor system, leading to a pathological situation such as osteoarthritis or remaining totally asymptomatic.

Objectives: The aim of the current study was to compare,via ultrasound, the entheseal changes in two groups of people having different ages by calculating a modified Madrid sonography enthesitis index.

Methods: The study was conducted in the rheumatology department of Mongi Slim hospital in Tunisia, between June 2015 and December 2016, including 17 healthy subjects. We indentified two groups: (G1) 9 persons aged >50 years [51–68] and (G2) 8 persons aged ≤50 years-old [37–50].

All the included persons underwent an enthesis ultrasound exploration (Esaote-MyLab 60 machine and a 13–18 MHz linear array transducer) by a rheumatologist