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AB0218 HIGH LEVEL OF CARTILAGINOUS OLIGOMERIC MATRIX PROTEIN IS ASSOCIATED WITH THE RADIOGRAPHIC PROGRESSION IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS

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Background: Recent achievements have established that the very first years since the development of the RA are decisive in terms of the progression of the pathological process and the prediction of its remote consequences. This substantiated the need to reflect the heterogeneity and stage of the RA. First of all it concerns the early RA – a time point when the pathological process is in the primary exudative phase and its reversibility is significantly higher, because of not completely formed autoimmune mechanisms and the absence of pannus.

Objectives: Our aim was to establish the relationship between the levels of Anti-Citrullinated Peptide Antibody (ACPA), cartilaginous oligomeric matrix protein (COMP) and radiographic progression in patients with early RA

Methods: 75 patients with a diagnosis of early RA were examined, the duration of symptoms was less than 1 year (on average – 4.91 ± 2.90 month) that were observed repeatedly on average after 12 months (11.8 ± 1.2 months). The average age of patients was 46.4 years (from 34 to 62 years), 69.33% of the examined ones were women, the average duration of the disease at the time of the initial study was 107 days (57–194 days). Immune dysregulation in early RA was confirmed with the evaluation of the key proinflammatory cytokines – ACPA and COMP by the enzyme-linked immunosorbent assay (ELISA) according to the instructions for diagnostic kits. For the testing of articular cartilage lesions and injury of flexor's and extensor's tendons, MRI (1.5 T) and ultrasound diagnostics (US) were performed

Results: Immunological analysis of serum samples of ACPA, COMP was shown the role of these cytokines as prognostic factors of development and prognosis of early RA. The serological features of the obtained data revealed a correlation between the increased concentration of COMP and the progression of joint lesions without ACPA level increase. According to the baseline US data, the tendons of general flexor muscles and extensor brushes were most commonly observed in the examined patients: in general, 52 patients (69.3%) and 23 (30.7%), respectively. The injury of the tendons of individual fingers (I-V) in the mode of longitudinal and transverse scanning had its own patterns (table 1).

Conclusions:

- In patients with seronegative (normal ACPA ranges) early RA and high levels of COMP – the highest frequency of erosive and destructive changes can be observed.
- Injury of the tendons of flexors and extensors determined in major part of the patients with early RA.

Abstract AB0218 – Table 1. Injury of the flexor's and extensor's tendons

Fingers	Injury of flexor tendons			Injury of extensor tendons		
	Totally, n (%)	Exudative tenosinovite, n (%)	Exudative – proliferative tenosinovitis, n (%)	Totally, n (%)	Exudative tenosinovite, n (%)	Exudative – proliferative tenosinovitis, n (%)
I	1 (1,3)	1 (1,3)	0 (0,0)	4 (5,2)	3 (3,9)	1 (1,3)
II	58 (77,3)	52 (69,3)	6 (8,0)	26 (34,7)	24 (32,0)	2 (2,6)
III	36 (48,0)	35 (46,7)	1 (1,3)	18 (24,0)	18 (24,0)	0 (0,0)
IV	22 (29,3)	20 (26,7)	2 (2,7)	12 (16,0)	9 (12,0)	3 (3,9)
V	13 (17,3)	13 (17,3)	0 (0,0)	6 (8,0)	6 (8,0)	0 (0,0)

Abstract AB0218 – Table 2. Dynamics of radiographic progression after a 12-month follow-up

Value	Group 1	Group 2	Group 3
	1	2	3
ACPA positive, %	31±2,59	18±1,88 $P_{1-2}<0,01$	12±1,17 $P_{1-3}<0,01$ $P_{2-3}<0,01$
COMP, U/l	11,8±0,73	15,3±0,62 $P_{1-2}<0,01$	8,4±0,94 $P_{1-3}<0,01$ $P_{2-3}<0,01$
Frequency of erosions detection at baseline / after 12 months, %	48/90 $\chi^2=10,93$, $p<0,01$	10/65 $\chi^2=10,67$, $p<0,01$	10/32 $\chi^2=0,76$, $p=0,383$
Number of erosions at baseline / after 12 months, p.	8,04±0,28/ 18,11±0,71 $P_{1-2}<0,01$	2,21±0,23/ 15,42±0,68 $P_{1-2}<0,001$	3,14±0,42/ 7,08±0,55 $p.m.a.$
Frequency of synovitis and tendinitis detection at baseline / after 12 months, %	51/81 $\chi^2=4,61$, $p<0,05$	32/71 $\chi^2=4,9$, $p<0,05$	21/36 $\chi^2=0,18$, $p=0,676$

Note: P_{1-2} – the level of significance of differences in the pairwise comparison of the corresponding groups.

P_{1-2} – the level of significance of differences when comparing baseline values (frequencies) and after a 12-month observation period.

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AB0219 IMPACT OF EARLY DIAGNOSIS ON LONG-TERM EFFECTIVENESS OF FIRST-LINE ANTI-TNF-ALPHA TREATMENT IN RHEUMATOID ARTHRITIS PATIENTS

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Objectives: Aim of this work was to evaluate effectiveness and drug persistence of anti-tumour necrosis factor (TNF)-alpha therapies in early and late diagnosed rheumatoid arthritis (RA) patients naive for biological disease-modifying antirheumatic drug (bDMARD) use.

Methods: Baseline and follow-up (FU) charts RA patients with disease onset later than 2002 and access to rheumatology care between January 2007 and December 2016 were reviewed until December 2017. All patients fulfilled 2010 ACR/EULAR classification criteria. At baseline, demographic, anamnestic and serological characteristics were collected. Based on lag time between onset of symptoms and definite diagnosis, RA patients were categorised into two groups: early diagnosed (less than 12 months) and late diagnosed (more than 12 months). Disease activity and treatment response were assessed every three months by Simplified Disease Activity Index (SDAI). Anti-TNF-alpha survival was defined as the length of time from initiation to discontinuation of therapy due to loss of effectiveness over time. It was examined using Kaplan-Meier survival analysis.

Results: One hundred and fifteen RA patients (86.1% females, mean age 59.4) were included. The median disease duration between onset of symptoms and diagnosis was 25 months.^{20–43} 68 patients (59.1%) were labelled as early diagnosed and 47 (40.9%) as late diagnosed. At baseline, no differences were found in age, gender, smoking habits, body mass index, and rheumatoid factor positivity. The most frequently used first-line anti-TNF drug was etanercept (30.4%), followed by adalimumab (20%), golimumab (18.3%), infliximab (16.5%), and certolizumab (14.8%). All patients received anti-TNF-alpha therapy in combination with csDMARD (methotrexate or leflunomide). Average steroid dosage was 5 mg/day of prednisone (or its equivalent) over time. The median time to initiation of any anti-TNF-alpha treatment after definite diagnosis was 18 months.^{6–30} Kaplan-Meier analysis showed a lower anti-TNF-alpha discontinuation rate for early diagnosed RA patients than late diagnosed (9 year retention rate of 29.5% and 12.7%, respectively; $p=0.0049$) (figure 1).

Abstract AB0219 – Figure 1

Conclusions: This small real-world retrospective, observational, cohort study demonstrates that early diagnosis of RA provides higher retention rate of anti-TNF-alpha treatment as first-line bDMARD.

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AB0220 SERONEGATIVE RA GROUP HAD Milder SYNOVITIS AND DELAYED PROGRESS OF BONE EROSION THAN SEROPOSITIVE RA ON WRISTS AND HANDS IN DMARDS-NAÏVE CHINESE COHORT

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Background: Contrast to sp-RA, sn-RA was less studied. The report by Nordberg et al mentioned ultrasonic presentations for the first time. They declared early RA patients (with the duration <2 years) without the treatment of DMARDs had more severe synovitis than sp-RA. However, according to the criteria, for the diagnosis of sn-RA, more than 10 swollen joints is necessary. The huge gap of swollen joints counts (SJC) between two groups may influence the sum ultrasound scores and thus cause a prominent selective bias, which was questioned to affect the fact that sn-RA had more synovitis due to more joints involved relative to grouping rules.

Objectives: To investigate and compare the disease progress of seronegative Rheumatoid arthritis (sn-RA) and seropositive Rheumatoid arthritis (sp-RA) on typical sites including wrists and hands by means of ultrasound and x-ray in Chinese patients.

Methods: All cases were DMARDs-naïve (DMARDs) and conformed to 2010 classification criteria with the characteristics of abnormal swollen or pain in wrists, Proximal Interphalangeal (PIP), Metatarsophalangeal (MCP) joints. 5-joints ultrasound scoring system was improved from Backhaus's US7 scoring system. Erythrocyte sedimentation rate (ESR, mm/h), C reactive protein (CRP, mg/L), Visual analogue scale (VAS) scores (VASs), patient global assessment of disease activity on VASs (PGA), the physician's assessment of disease activity on VASs (PhGA), DAS28 (Disease Activity Score-28, DAS28), van der Heijde-modified Sharp scores (vdHSS) were also used to evaluate the disease activity among 1 Group A: sp-RA (positive rheumatoid factor (RF) and/or anticitrullinated peptide antibody (ACPA)) combined with swollen joint counts (SJC) > 10; 2 Group B: sp-RA combined with SJC ≤ 10 and 3 Group C: sn-RA (negative RF and negative ACPA), according to the 2010 criteria with SJC > 10.

Results: 29 (11.6%) of 249 patients were seronegative. The score of DAS28, CRP, ESR, the sum ultrasound scores, vdHSS, physician global VAS, Patient global VAS and pain VAS were significantly lower ($p < 0.05$) in Group C than Group A, but no difference between Group B and Group A. The sum ultrasound scores were prominently lower in Group C with the duration over 2 years ($p < 0.05$), and vdHSS were remarkably higher in all groups with the duration over 5 years, but more specifically, for the duration over 2 years ($p < 0.05$), the vdHSS was shown to go up much more earlier in Sp-RA than Sn-RA patients.

Conclusions: Seronegative RA group had milder synovitis and delayed progress of bone erosion than seropositive RA on hands and wrists at the same level with SJC > 10.

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AB0221 THE USE OF ULTRASOUND TO IDENTIFY DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS IN CLINICAL REMISSION OR LOW DISEASE ACTIVITY IN A REAL-LIFE SETTING

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Background: The goal of treatment in rheumatoid arthritis (RA) is to achieve remission or low disease activity for as long as possible, in order to prevent joint damage and loss of function. The evaluation and follow-up of disease activity relies on composite indexes with clinical outcomes. However, many studies have shown that a high proportion of patients categorised on remission or low disease activity by clinical methods could have disease activity by ultrasound (US).¹

Objectives: The aim of this study was to evaluate disease activity by US in patients classified as to be in remission or in low disease activity disease activity by clinimetric evaluation.

Methods: We performed a cross-sectional study including patients with RA; Clinical follow-up was designed by the authors according to DAS28 as follows: every 3–5 weeks (DAS28 > 5.1), every 7–9 weeks (DAS28 ≥ 3.1 and ≤ 5.1), and every 11–13 weeks (DAS28 < 3.1). Additionally the patient was evaluated by a rheumatologist expert in ultrasound; US studies were carried out with a Esaote MyLab Seven US equipment (Biomedica, Genoa, Italy) equipped with a 10–18 MHz linear transducer; PD was adjusted according to the following parameters: frequency, 8.0, PRF, 0.500, wall filter 3, gain between 50 and 70. The rheumatologist reported erosions, synovitis, osteophytes and power Doppler, we defined as active disease when patients had synovitis or positive power Doppler. We calculated means, and standard deviations for continuous variables and categorical variables were presented as rates. We performed a bivariate analysis using Pearson's Chi²

Results: We included 243 patients 64% were in remission and 36% in low disease activity, 85% were woman, mean age was 60 years ± 10. Mean DAS28 was 2.53 ± 0.53. 81% of patients received conventional DMARDs and 19% received biological DMARDs. The most frequent finding was erosions 70% in hands and 7% in feet followed by synovitis in hands 58%. See table 1. We found disease activity in 60% of our patients were 51% had positive Doppler and synovitis, 1% had only positive Doppler and 8% patients only had synovitis. We did not find statistical association between disease activity according to ultrasound and age, sex and type of pharmacological therapy in patients classified as to be in remission or LDA.

Conclusions: The evidence found in this real-life setting data, showed that two thirds of RA patients classified according to DAS28 to be in remission or LDA have subclinical disease activity; thus the ultrasound is a very useful tool to evaluate patients with RA in clinical practice. Further research is needed in order to identify the reasons of disease activity in patients were clinical findings point towards remission or LDA.