■ ΔSJC28 ■ ΔPain ■ Unexplained

Figure 1. Graph 1 – Explicative model to variations on PhGA

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- Disclosure of Interests:** LILIANA SARAIVA: None declared, Luisa Brites: None declared, Ana Rita Cunha: None declared, Helena Assunção: None declared, Ana Rita Prata: None declared, Mariana Luis: None declared, Flavio Costa: None declared, Pedro Freitas: None declared, Marlene Sousa: None declared, José Antonio P. da Silva Grant/research support from: Pfizer, Abbvie, Consultant of: Pfizer, Abbvie, Roche, Lilly, Novartis, Catia Duarte: None declared

DOI: 10.1136/annrheumdis-2020-eular.2606

AB0224

ASSOCIATIONS BETWEEN JOINT REPLACEMENT HISTORY AND CYCLIC CITRULLINATED PEPTIDE ANTIBODY TITERS IN RHEUMATOID ARTHRITIS PATIENTS

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Background: High titers of cyclic citrullinated peptide antibodies (anti-CCP) are predictive of poor prognosis in the treatment of rheumatoid arthritis (RA). The 2010 ACR/EULAR classification criteria for early RA assign a high point value to cases having highly positive anti-CCP titers. Previous reports have claimed that osteoarthritic damage is more severe and advanced in RA patients who test positive for anti-CCP than in their negative counterparts.

Objectives: To retrospectively investigate whether anti-CCP titers were associated with the extent of osteoarthritic damage in RA patients treated at our institution.

Methods: Data were analyzed for 422 RA patients who received biologic agents due to resistance to methotrexate or other conventional antirheumatic drugs. Associations were explored between joint replacement history-i.e. total knee replacement (TKR), total hip replacement (THR), or lack thereof—and anti-CCP positivity rates and titers.

Results: The sample consisted of 90 men and 332 women. On average, patients were put on biologics at 58.6 years of age (range: 22–85), and had a disease duration of 9.3 years. The first biologic agent chosen was infliximab (IFX) in 154 cases, etanercept (ETN) in 76, adalimumab (ADA) in 61, tocilizumab (TCZ) in 70, abatacept (ABT) in 41, golimumab (GLM) in 18, and certolizumab pegol (CZP) in 2. In total, 331/422 patients (78.4%) tested positive for anti-CCP. TKR was performed in 46 cases (M:F ratio: 7:39, mean age: 64.7 y, mean disease duration: 15.1 y), of which 46 were positive for anti-CCP (100%). THR was performed in 18 cases (M:F ratio: 2:16, mean age: 62.3 y, mean disease duration: 18.5 y), of which 17 were positive for anti-CCP (94.4%). The mean anti-CCP titer among all positive patients (n=331) was 152.9 IU/ml. This value was significantly higher in patients who underwent either joint replacement procedure than those who did not (215.4 v. 142.8 IU/ml, p<0.0005).

Conclusion: With one exception, all RA patients who underwent joint replacement were positive for anti-CCP, and their titers were higher than non-surgical cases. Practitioners should be aware of this trend, and pay attention to the progression of damage in the knee and hip joints when treating RA patients with high anti-CCP titers.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.3981

AB0225

THE NATURAL COURSE OF EARLY RA WITH LATE ONSET IN EVERYDAY CLINICAL PRACTICE ACCORDING TO THE RUSSIAN RA PATIENT REGISTER OREL

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Background: The opinion about the severity and prognosis of rheumatoid arthritis (RA) with late onset balanced between more favorable and more severe over various periods of rheumatology development. We studied this group of patients according to the Russian RA Patient Register OREL.

Objectives: To study clinical, laboratory and radiological characteristics in patients with early RA with late onset of the disease (50 years and older) who are DMARD (disease modifying antirheumatic drugs), biological DMARD and glucocorticoid (GC) (systemic administration) – naive.

Methods: All patients were included in the OREL register in the period from 01.01.2014 to 12.31.2018. There were 151 patients in the study (M:41, W:110; average age 60 ± 7.0 years). There were 73 patients (48%) with the duration of RA up to 3 months, 45 (30%) - 4-6 months, 33 (22%) - 7-12 months. The ratio of men and women was only 1: 2.8 (50 -64 years = 1:3.8; 64 years and older = 1: 1.8).

Results: 99/151 (66%) patients had high disease activity (according to DAS-28), 52/151 (34%) – medium activity.

22/151 (15%) patients had II functional class (FC), 103 (68%) – III FC, 26 (17%) – IV FC.

Table 1 illustrates that with an increase in the duration of the disease, a gradual increase in the frequency of detection of radiological erosion in the hands and distal parts of the feet is noted: 1.5 - 3 months - 33/73 (45%) patients; 4-6 months - 22/45 (49%) patients and in the period 7-12 months - 23/33 (70%) patients.

Table 1. X-ray Stage and RA duration

X-ray Stage		Duration of disease (months)					
		<3	4	5	6	7-12	Total
Non Erosive RA	I	11(1*)	6(1*)	3(1*)	1	5	26(3*)
	II	29(1*)	5	5	3	5	47(1*)
Erosive RA	III	31	8	7	4	20	70
	IV	2	1	1	1	3	8
Total		73(2*)	20(1*)	16(1*)	9	33	151(4*)

* - Erosion according to MRI of the hands

Table 2. illustrates higher incidence of joint erosions in the presence of RF and / or anti-CPA antibodies (ACPA) compared to patients who are seronegative for RF and ACPA. Таблица 2. X-ray-Stage and RF and ACPA Detection Frequency

X-ray-Stage	The frequency of RF and ACPA detection			
	RF (+) ACPA (+)	RF (+) ACPA (-)	RF (-) ACPA (+)	RF (-) ACPA (-)
Non-erosive RA: Stages I and II	30%	20%	22%	58%
Erosive RA: II, III and IV stages	70%	80%	78%	42%

The frequency of RF and ACPA detection in non-erosive patients, in all patients with radiological erosion and in patients with advanced stages only (III and IV) was 67% (RF) -78% (ACPA), 75% -90% and 100% -100%, respectively.

Conclusion: Everyday clinical practice (OREL register) shows that in patients aged 50 years and older with early clinical stage of RA who are naive about the treatment of DMARD, biological DMARD and GC, the detection of RF, ACPA and erosive changes in the joints are often observed in the onset of the disease. RF and ACPA are markers of early joint destruction.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.1001

AB0226

USING 3 TESLA MRI WITH A HIGH-RESOLUTION 16-CHANNEL HAND COIL TO DIFFERENTIATE BETWEEN RHEUMATOID AND PSORIATIC ARTHRITIS: A PILOT STUDY

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Background: The differentiation between rheumatoid arthritis (RA) and psoriatic arthritis (PsA) is sometimes a challenge for rheumatologists in daily clinical practice. Imaging techniques such as MRI could be a helpful tool for this purpose.

Objectives: To examine the value of 3 Tesla (T) magnetic resonance imaging (MRI) with a high-resolution 16-channel hand coil for the differentiation between RA and PsA.

Methods: A total of 17 patients with active PsA and 27 patients with active RA were evaluated by 3T MRI. Images were analyzed by three readers according

to the outcome measures for RA clinical trials (OMERACT) and RA and PsA MRI scores for the presence and intensity of the following MRI features: synovitis, flexor tenosynovitis, bone edema, bone erosion, periarticular inflammation, bone proliferation, and joint space narrowing. A receiver operating characteristics (ROC) curve was established for a calculated prediction model comprising age, gender, and the imaging features 'periarticular inflammation' and 'erosion' of the metacarpophalangeal (MCP) joint of the 5th finger.

Results: PsA could be differentiated from RA by extracapsular inflammatory changes (PsAMRIS sub-score 'periarticular inflammation'), with a minimal odds ratio (OR) for the outcome 'not RA' of 0.06 ($p < 0.01$) at all MCP joints. The calculated ROC curve had an area under the curve (AUC) of 98.1%.

Conclusion: 3T MRI showed a strong association of extracapsular inflammatory changes with PsA at the MCP joint level, and consequently allowed differentiation between PsA and RA.

Figure 1. Receiver operating characteristics (ROC) curve with different thresholds for the calculated prediction model for the outcome RA. Area under the curve (AUC) = 98.1%.

Figure 2. 51-year-old female patient with PsA. MR images show flexor tenosynovitis (FS), synovitis (Syn), and periarticular inflammation (PI). A. Sagittal PD fat-saturation of D5. PI at the volar and dorsal aspects at the MCP, PIP, and DIP levels. FS at the PIP and DIP joint levels. Black asterisks indicate PI. Black arrow points to FS. B. Coronal STIR with bone edema (BE) at the proximal portion of PIP3 and 5 accompanied by PI at PIP3 and MCP, PIP and DIP5. Asterisks indicate BE. Arrowheads point to PI. C. Transversal T2 fat-saturation with FS and PI at MCP5. Arrowhead indicates FS, arrow points to volar PI. D. Transversal T1 fat-saturation following iv contrast, with FS and PI at MCP5. Arrowhead indicates FS, arrows points to volar PI.

Disclosure of Interests: Philipp Sewerin Grant/research support from: AbbVie Deutschland GmbH & Co. KG

Bristol-Myers Squibb Celgene GmbH

Lilly Deutschland GmbH

Novartis Pharma GmbH Pfizer Deutschland GmbH

Rheumazentrum Rhein-Ruhr, Consultant of: AMGEN GmbH AbbVie Rheumazentrum GmbH & Co. KG Biogen GmbH Bristol-Myers Squibb Celgene GmbH Chugai Pharma arketng Ltd. / Chugai Europe GmbH Hexal Pharma Janssen-Cilag GmbH Johnson & Johnson Deutschland GmbH Lilly Deutschland GmbH / Lilly Europe / Lilly Global Novartis Pharma GmbH Pfizer Deutschland GmbH Roche Pharma Rheumazentrum Rhein-Ruhr Sanofi-Genzyme Deutschland GmbH Swedish Orphan Biovitrum GmbH UCB Pharma GmbH, Speakers bureau: AMGEN GmbH AbbVie Deutschland GmbH & Co. KG Biogen GmbH Bristol-Myers Squibb Celgene GmbH Chugai Pharma arketng Ltd. / Chugai Europe GmbH Hexal Pharma Janssen-Cilag GmbH Johnson & Johnson Deutschland GmbH Lilly Deutschland GmbH / Lilly Europe / Lilly Global Novartis Pharma GmbH Pfizer Deutschland GmbH Roche Pharma Rheumazentrum Rhein-Ruhr Sanofi-Genzyme Deutschland GmbH Swedish Orphan Biovitrum GmbH UCB Pharma GmbH, Daniel Abrar: None declared, Alexander Lautwein: None declared, Stefan Vordenbäumen: None declared, Ralph Brinks: None declared, Christine Goertz: None declared, Miriam Frenken: None declared, Matthias Schneider Grant/research support from: GSK, UCB, AbbVie, Consultant of: AbbVie, Alexion, Astra Zeneca, BMS, Boehringer Ingelheim, Gilead, Lilly, Sanofi, UCB, Speakers bureau: AbbVie, Astra Zeneca, BMS, Chugai, GSK, Lilly, Pfizer, Sanofi, Benedikt Ostendorf: None declared, Christoph Schleich: None declared

DOI: 10.1136/annrheumdis-2020-eular.4502

AB0227

BASELINE SYNOVIAL LEVELS OF MATRIX METALLOPROTEINASES-9 IN EARLY RHEUMATOID ARTHRITIS-THE ASSOCIATION WITH INITIAL RADIOGRAPHIC CHANGES

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Background: Matrix metalloproteinases (MMPs) are the key enzymes responsible for the joint destruction in rheumatoid arthritis (RA).

Objectives: The aim of this study was to examine the association of baseline levels of metalloproteinases-9 (MMP-9) in serum and synovial fluid (SF) with structural damage of hand and feet joints in patients with early RA and also with immunoserological markers of the disease.

Methods: The study enrolled 134 subjects with knee synovitis: 72 patients with early DMARD-naïve RA (symptom duration ≤ 12 months) and 62 patients with osteoarthritis (OA), as control group. Synovial fluid was obtained by an arthrocentesis of the knee joint. Joint damage was estimated by hands, knee and feet radiography. With regard to the presence of destructive joint changes on initial x-ray, RA patients were classified as erosive and nonerosive form of disease. ELISA assay was used for the detection of MMP-9 activity in serum and SF as well for the immunoserology tests: rheumatoid factor RF (IgG) and anti-CCP antibody (ACPA).

Results: MMP-9 activity in serum and SF of RA patients was significantly higher compared to its activity in serum and SF of control group ($p < 0.01$ and $p < 0.001$ respectively) (table 1).

Table 1. MMP-9 activity (ng/ml) in serum and SF of RA and control group patients

Group	MMP-9 activity in BP (ng/ml); mean $\pm$ SD	MMP-9 activity in SF (ng/ml) mean $\pm$ SD
RA (n=72)	18.28 $\pm$ 7.54**	15.07 $\pm$ 13.24***
Controls -OA (n=62)	13.58 $\pm$ 3.07	0.65 $\pm$ 0.41

RA – rheumatoid arthritis; SD – standard deviation; n – number of subjects; ** – $p < 0.01$, *** $p < 0.001$

We did not establish a significant correlation between the activity of MMP 9 in serum and SF in the RA and control groups (Spearman's rank correlation coefficient in RA was 0,02 and 0,06 in control group).

Most of the subjects from RA group (52–72.22%) had verified radiographic erosive changes in joints. Nonerosive arthritis was present in remaining 20 (27.78%) of RA patients. No differences were obtained according to the sex, age or disease duration between erosive and nonerosive RA patients.

Table 2 represents MMP-9 activity in serum and SF of patients with erosive and nonerosive RA. The values of MMP-9 activity measured in serum were higher in nonerosive compared to erosive RA (20.35 $\pm$ 10.30 vs. 17.46 $\pm$ 6.25), but the difference was not statistically significant ($p > 0.05$). However, MMP-9 activity in SF