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POS0545

DISCORDANCE BETWEEN PATIENT'S AND PHYSICIAN'S DISEASE ACTIVITY ASSESSMENT IN RHEUMATOID ARTHRITIS: WHICH DOMAINS CAN INFLUENCE THIS DISCREPANCY WHEN REMISSION IS ACHIEVED?

L. Moschetti^{1,2}, C. Bazzani¹, F. Villanova², R. Gorla¹, F. Franceschini^{1,2}. ¹ASST Spedali Civili, Rheumatology and Clinical Immunology Unit, Brescia, Italy; ²University of Brescia, Clinical and Experimental Sciences, Brescia, Italy

Background: In daily clinical practice, it is not rare to observe a relevant discordance between patient's global assessment (PGA) and physician's global assessment (PhGA), because of different illness perceptions.

Objectives: To evaluate the presence of PGA/PhGA discrepancy in patients with rheumatoid arthritis (RA) who achieved biological remission and to explore whether this discordance could be influenced by the presence of additional elements affecting patients' quality of life, such as comorbidities, sleep disturbances and psycho-emotional factors.

Methods: Our study included adult RA patients, followed in a single rheumatology centre, fulfilling three out of four Boolean remission criteria: tender joint count ≤ 1 , swollen joint count ≤ 1 and C reactive protein ≤ 1 mg/dl¹. Medical records including demographic data, clinical characteristics and outcomes measures were collected. To evaluate the impact of comorbidities we used the Rheumatic Disease Comorbidity Index (RDCI). Pain assessment, PGA and PhGA were rated on a visual analogue scale (0-100 mm) on the same day of the clinical evaluation. To analyse the discrepancy between PGA and PhGA, the [PGA-PhGA] variable was calculated, considering as discordant a difference ≥ 30 mm. All the subjects completed the following questionnaires: Health Assessment Questionnaire (HAQ), SF36 Health Survey, State-Trait Anxiety Inventory (STAI-Y1/Y2), Self-rating Depression Scale (SDS Zung) and Insomnia Severity Index (ISI). Statistical analysis was performed to compare concordant and discordant groups.

Results: The study included 90 patients (64 women, 26 men) with a median age of 60 [50-67] and a median RA duration of 10 [5-16] years; 80% of patients were RF and/or ACPA positive. According to DAS28 (median 1.7 [1.5-2.2]), 90% of patients achieved remission, 9% LDA and 1% MDA. Nevertheless, in 81% of cases PGA>PhGA and in 33% [PGA-PhGA] ≥ 30 . The discordant group showed higher median disease activity scores (DAS28: 2.2 [1.9-2.4] vs 1.5 [1.4-1.9],

$p < 0.001$; SDAI: 6.7 [3.9-8.1] vs 2.0 [0.7-3.2], $p < 0.001$). No differences were found in gender, age, comorbidities, RA duration, serology and treatment (cs-/b-DMARDs). Median prednisone dose was higher in the discordant group (0 [0-21] vs 0 [0-7.5] mg/week, $p = 0.024$). Data about patient-reported outcomes and differences between two groups are reported in the table 1.

Conclusion: In our study we found discordance between the global disease assessment reported by patients, although considered in biological remission, and their physicians in 33% of the cases. As previously described², our data seems to confirm that potential causes for this discordance could be pain due to non-inflammatory processes, functional disability and compromised physical health. In the present study also psychological stress, particularly state anxiety, seems to negatively affect PGA/PhGA concordance. These results confirm the importance, in clinical practice, of exploring and managing inflammatory and non-inflammatory parameters separately, also in patients achieving biological remission.

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Table 1. Data are expressed as median (1st-3rd quartile) and compared using Mann-Whitney test.

PATIENT-REPORTED OUTCOMES	PATIENT NUMBER =90	CONCORDANT GROUP (PGA-PhGA) <30 =60 (67%)	DISCORDANT GROUP (PGA-PhGA) ≥ 30 =30 (33%)	$p < 0.05$
PGA, [0-100]	20 (10-40)	10 (0-20)	50 (37-60)	-
PhGA, [0-100]	0 (0-10)	0 (0-10)	10 (0-10)	-
PGA-PhGA, [0-100]	10 (0-30)	10 (0-10)	40 (30-52)	-
VAS pain, [0-100]	20 (10-40)	10 (0-20)	50 (30-60)	<0,001
HAQ, [0-3]	0,13 (0-0,50)	0 (0-0,25)	0,31 (0,09-0,87)	<0,001
STAI Y1, [20-80]	36 (31-47)	35 (30-42)	40 (35-51)	0,014
STAI Y2, [20-80]	37 (33-45)	37 (33-45)	38 (33-47)	ns
SDS ZUNG, [25-100]	45 (40-51)	44 (39-49)	48 (40-53)	ns
ISI, [0-28]	2 (2-11)	5 (2-11)	8 (3-14)	ns
SF36 Physical, [0-100]	44 (36-52)	48 (40-54)	36 (28-46)	<0,001
SF36 Mental, [0-100]	50 (38-56)	51 (41-57)	47 (33-54)	ns

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POS0546

RENAL DYSFUNCTION AND METABOLIC CHANGES IN PATIENTS WITH RHEUMATOID ARTHRITIS ARE ASSOCIATED WITH ANGIOPOIETIN-LIKE PROTEIN TYPE 4

V. Aleksandrov^{1,2}, A. Aleksandrov^{1,2}. ¹Volgograd State Medical University, Department of Hospital Therapy, Volgograd, Russian Federation; ²Federal State Budgetary Institution «Research Institute of Clinical and Experimental Rheumatology named after A.B. Zborovskiy», Department of clinical and laboratory diagnostics, Volgograd, Russian Federation

Background: Along with chronic inflammation, the development of renal damage in rheumatoid arthritis (RA) is promoted by the presence of metabolic syndrome (MS), which may be an independent risk factor for the progression of chronic kidney disease.

Objectives: To establish a correlation between serum angiotensin-like protein type 4 (ANGPTL4) and the presence of renal dysfunction and metabolic disorders in RA patients.

Methods: We examined 158 patients with RA (91.8% - women and 8.2% - men) aged 21 to 80 years old with an average duration of the disease - 9 [4; 15] years. The majority of patients were seropositive for RF-IgM (57.6%) and for anti-citrullinated protein antibody (ACPA) (60.1%), with an advanced clinical stage (45.6%) and moderate activity (3.2 < DAS28 $\leq$ 5.1) of the pathological process (58.2%). The laboratory examination included the determination of serum concentrations of angiotensin-like protein type 3 (Human Angiotensin-like Protein 3 ELISA, Bio Vendor, Czech Republic) and type 4 (RayBio Human ANGPTL4 ELISA Kit; RayBiotech, USA).

To assess renal function in RA patients, the estimated glomerular filtration rate (GFR) was used according to the 2009 CKD-EPI formula. On the basis of GFR measurements, the patients were divided into three groups: I - optimal renal function (> 90 ml / min); II - a slight decrease in renal function (89-60 ml / min); III - reduced renal function (<59 ml / min).

A combination of the increased blood pressure ($\geq 140 / 90$ mmHg), the increased triglyceride levels (≥ 1.7 mmol / L), and the impaired carbohydrate metabolism (increased fasting plasma glucose ≥ 6.1 mmol / L) with a background of central obesity (waist circumference ≥ 94 cm in men and ≥ 80 cm in women) served as the basis for inclusion into the group of RA patients with signs of MS.

Results: A multivariate analysis of variance was performed comparing ANGPTL indices depending on GFR in the groups of RA patients without signs of MS and

RA patients with MS. It was revealed that there are significant differences in the level of both ANGPTL3 ($F = 8.86$, $p = 0.0034$) and ANGPTL4 ($F = 29.6$, $p < 0.001$) between RA patients with varying severity of metabolic disorders.

The study of the influence of several factors (MS and renal dysfunction) on the content of ANGPTL in RA patients showed that the presence of metabolic disorders had an insignificant effect on the parameters of ANGPTL3 in the groups of patients with optimal and slightly reduced GFR, acquiring significance only with a more intense decrease in GFR ($< 59 \text{ ml / min / } 1.73 \text{ m}^2$). These factors and their interactions explain the insignificant share of the variability in ANGPTL3 ($R^2 = 0.11$), which indicates a low quality of the model.

There was a more pronounced difference in the level of ANGPTL4 in the presence of metabolic disorders in the groups of RA patients with varying degrees of renal dysfunction. The factors under consideration and their interactions do not make this model significant ($p = 0.1$), although they can explain a significant proportion of the variability in ANGPTL4 ($R^2 = 0.32$).

We differentiated RA patients into patients with high or optimal GFR ($\geq 89 \text{ ml / min}$) and patients with reduced GFR ($< 89 \text{ ml / min}$) when combining groups of RA patients with varying degrees of renal dysfunction (group II and group III). Multivariate analysis of variance using the new characteristics showed a significant increase in ANGPTL 4 in the blood serum of RA patients with reduced GFR ($F = 18.5$, $p < 0.001$) and severe metabolic changes ($F = 24.2$, $p < 0.001$).

Thus, the concentration of ANGPTL4 in RA patients is directly influenced by two factors (renal dysfunction and the presence of MS), which can describe the variability of this sign in more than 30% of cases. The squared multiple correlation coefficient (R^2) in this model is 0.33.

Conclusion: ANGPTL type 4 should be considered as a key factor linking the development of the renal dysfunction in RA patients and the metabolic changes caused by rheumatoid inflammation.

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POS0547

METEOROLOGICAL VARIABLES HAVE DIFFERENT INFLUENCE ON CORE MEASURES OF DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

P. Mandl¹, P. Studenic¹, F. Alasti¹, R. Kaltenberger², A. Kerschbaumer¹, T. Krennert³, J. S. Smolen¹, D. Aletaha¹. ¹Medical University of Vienna, Rheumatology, Vienna, Austria; ²Central Institute for Meteorology and Geodynamics, Climate Research, Vienna, Austria; ³Central Institute for Meteorology and Geodynamics, Weather Forecast, Vienna, Austria

Background: The notion that weather conditions may influence the symptoms and course of rheumatic and musculoskeletal diseases goes back to ancient times. However, despite the seemingly obvious relationship, previous studies assessing how meteorological variables affect pain and disease activity have yielded contradictory results.

Objectives: To evaluate whether meteorological variables influence disease activity in patients with rheumatoid arthritis (RA).

Methods: We assessed correlations between clinical measures of disease activity (pain, patient global assessment [PGA], tender- and swollen 28 joint counts [TJC and SJC]) and individual meteorological variables: temperature (temp.), effective (eff.) temperature, saturation vapor pressure (SVP), absolute humidity (AH), relative humidity (RH), dew point, vapor pressure (VP) and precipitation. Assessments documented in the Care for Rheumatoid Arthritis database of our institution were matched with these meteorological variables on a daily basis for a period of 12 years between 2005 and 2017 and analyzed utilizing generalized estimating equations. Patients with < 5 visits in the study period, those with < 1 visit/quarter or with no pain (VAS=0) in ≥ 3 consecutive visits and those living outside of the catchment area were excluded. Patients were grouped into remission or low (≤ 11) vs. moderate or high (> 11) disease activity based on the simplified disease activity index (SDAI).

Results: A total of 461 patients with an average disease duration at first visit of 5.7 ± 7.4 years, average age of 55.3 ± 14.5 years and a mean SDAI of 22.1 ± 12.7 were analyzed. Among patients with moderate or high disease activity, higher temp./eff. temp. and SVP were associated with lower pain, TJC and SJC (Figure 1); on the contrary, higher RH was associated with higher pain and higher SJC. In those in remission or low disease activity, higher RH, AH, VP or dew point were associated with lower PGA. Higher precipitation was associated with lower SJC.

Figure 1. Association of meteorological parameters and clinical measures of disease activity. PGA: patient's global assessment, SDAI: simplified disease activity index, SJC: swollen joint count, TJC: tender joint count. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Conclusion: In this large association study of meteorological parameters with RA, both temperature and humidity parameters were modestly inversely associated with pain, TJC and SJC.

Disclosure of Interests: None declared

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POS0548

OPTIMAL ASSESSMENT OF THE RHEUMATOID ARTHRITIS ANKLE AND HINDFOOT: A COMPARATIVE STUDY BETWEEN CLINICAL EXAMINATION AND ULTRASONOGRAPHY

K. Maatallah¹, H. Boussaa¹, H. Riahi², H. Ferjani¹, M. Habechi¹, W. Triki¹, D. Ben Nessib¹, M. Bouaziz², D. Kaffel¹, W. Hamdi¹. ¹Mohamed Kassab Institute of Orthopedics, Rheumatology, La Manouba, Tunisia; ²Mohamed Kassab Institute of Orthopedics, Radiology, La Manouba, Tunisia

Background: Foot disease is a common problem in rheumatoid arthritis (RA). Therapeutic decisions are often based on clinical examination (CE) alone, which can be adversely affected by factors such as deformity, obesity, and peripheral edema. Ultrasonography (US) has previously been shown to be more sensitive than CE for detecting synovitis and tenosynovitis in RA forefeet, but few data exist for the hindfoot and ankle.

Objectives: The aim of this study was to compare CE and US for the detection of hindfoot and ankle synovitis and tenosynovitis in patients with established RA.

Methods: We conducted a cross-sectional study including patients with RA (ACR/EULAR 2010). Demographic data and disease parameters were collected. CE was performed by a rheumatologist for the presence or absence of tenderness, swelling, and mobility restriction of both ankles. The following tendons were examined for tenosynovitis: tibialis anterior (TA) and posterior (TP), fibularis longus (FL), and brevis (FB) (assessed together). In a second time, US examination of the tibiotalar, talonavicular, and subtalar joints and the same tendons as CE was performed by a blinded radiologist experienced in musculoskeletal imaging using a Philips HD11 device with a high-frequency linear transducer. The presence or absence of synovitis and tenosynovitis was recorded, and the composite synovitis score (power doppler / grayscale ultrasound (PDUS)) was measured for each joint. The US score of each patient was defined by the sum of the composite scores of the joints studied (0-30). A p-value < 0.05 was considered significant.

Results: Sixty-two feet were examined in 31 RA patients (25 women and six men) with a mean age of 54.8 ± 10.8 years old [32-70]. The mean disease duration was 8.5 ± 7.2 years [1-37]. Rheumatoid Factor (RF) and Anti-Citrullinated Peptides Antibodies (ACPA) were positive in 61.3% and 83.8% of cases. The mean DAS28 ESR was 3.8 ± 1.5 [0.6-7].

Clinical examination of ankles revealed tenderness in 57.4% of cases, swelling in 38.8% of cases, and restriction in the range of motion in 11.1% of cases. TA tenosynovitis was noted in 14.8% of cases, TP tenosynovitis in 22.2% of cases, and FL and FB tenosynovitis in 31.5% of cases.

US showed tibiotalar synovitis in 59.3% of cases, talonavicular synovitis in 64.8% of cases, and subtalar synovitis in 46.3% of cases. TA tenosynovitis was noted in 5.6% of cases, TP tenosynovitis in 22.2% of cases, and FL and FB tenosynovitis in 25% and 11.1% of cases respectively.