Conclusion: The presence of active RA, both in terms of clinical and ultrasonographic indices, correlates with an increased CSA of the palmar digital nerves. This alteration is probably due to inflammatory mechanisms of the perineural tissues at the level of the MCPj. Active synovitis during RA can somehow be framed as a condition capable of causing neuropathic damage to the palmar digital nerves.

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POS0566

CATASTROPHIZING IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Catastrophizing is conceptualized as a negative cognitive-affective response to an anxiety-provoking stimulus, especially anticipated or actual pain. Catastrophizing can be assessed quickly using a validated questionnaire: the Pain Catastrophizing Scale (PCS)¹. Catastrophizing plays a role in maintaining chronic pain and is associated with several pain-related outcomes in osteoarthritis and low back pain.

Objectives: To assess the prevalence of catastrophizing and associated factors in rheumatoid arthritis (RA).

Methods: We performed an observational, prospective, bi-centric study. All patients aged 18 or over with RA and fulfilling the ACR-EULAR 2010 criteria were consecutively included. Sociodemographic data, information on the disease and its treatments were collected as well as questionnaires for disease activity (DAS28), function (HAQ), quality of life (SF12, EQ5D), anxiety and depression (HADS, GAD7), fibromyalgia (FIRST), insomnia (ISI) and catastrophizing scores (PCS). Statistical analysis included the samples t-test, one-way variance analysis, the Spearman's correlation test, the Chi² test, Fisher's exact test, the Wilcoxon test, multivariate linear regression (considering catastrophizing as a continuous variable) and multivariate logistics regression (considering catastrophizing as a categorical variable: PCS ≥ 20 = high level catastrophizing).

Results: From September 2019 to March 2020, 201 patients with RA were included: 78.1% were women and the median age was 63.0 years. In all, 64.1% of patients were RF+, 65.7% ACPA+, and 46% had erosive disease. Median DAS28 CRP was 2.9 [2.1-4.0], with 45% of patients in remission, 14.8% with low, 31.2% moderate and 9% high activity. The majority of patients (92%) had a disease lasting for more than 2 years.

The prevalence of a PCS score ≥ 20 was 48.0% [41.0;54.9]. The median PCS score was 18 [7-28]. In multivariate logistics regression, high-level catastrophizing was significantly associated with DAS28-CRP (OR= 1.61 [1.18-2.20]), HADS anxiety score (OR=1.25 [1.11-1.40]) and the HADS depression score (OR=1.19 [1.07-1.33]). In multivariate linear regression, catastrophizing was significantly associated with the HADS anxiety score (p< 0.0001), HADS depression score (p=0.0055), HAQ (p=0.0015) and the ISI insomnia score (p=0.005).

Conclusion: Almost half the patients with RA were high catastrophizers. Catastrophizing is linked to anxiety, depression, disease activity, function impairment and insomnia. It may be interesting to detect catastrophizing in order to improve the management of our patients.

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POS0567

HEPCIDIN IS POTENTIAL BIOMARKER TO DISTINGUISH BETWEEN IRON DEFICIENCY ANEMIA AND ANEMIA OF INFLAMMATION IN RHEUMATOID ARTHRITIS

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Background: Anemia of inflammation (AI) and iron deficiency anemia (IDA) are the two most prevalent forms of anemia in patients with rheumatoid arthritis (RA). Diagnosis becomes challenging if AI is associated with true ID (AI/ID), as there is still a lack of a gold standard for differentiation between AI and AI/ID. However, as therapies to overcome anemia differ, proper diagnosis and understanding of underlying pathophysiological regulations are necessary.

Objectives: The aim of the study was to evaluate the clinical efficiency of hepcidin, a key regulator of iron metabolism, in the diagnosis of IDA, as well as the differential diagnosis of AI/ID and AI in patients with RA.

Methods: The study was undertaken 96 patients with RA, 67 of them were diagnosed anemia according to WHO criteria (104.3±21.4 g/l). Anemic patients and anemia-free patients with RA (n=29) were comparable (p>0.05) in age (44.4±14.8 and 49.8±9.3 years), disease duration (73.5±65.4 and 59.8±48.3 months) and DAS28 (6.3±1.6 and 5.9±1.9). All cases were subjected to following tests: complete blood count with peripheral smear, serum C-reactive protein, serum interleukin-6, iron studies, serum soluble transferrin receptor (sTfR), and serum hepcidin. Patients with RA and anemia were divided two groups: 25 patients with IDA and 42 - with AI. The AI cases were subdivided into pure AI and AI with coexistent ID (n=15).

Results: The mean serum hepcidin concentration was significantly increased in pure AI patients (123.85±25.8 ng/mL) as compared to those in IDA patients (63.9±22.8 ng/mL, P < 0.05) and anemia-free patients with RA (88.1±39.09 ng/mL). Also, compared to pure AI patients [normal sTfR levels (<3 µg/mL)], the serum hepcidin concentration was reduced significantly in AI patients with ID [high sTfR levels (≥3 µg/mL)] with a mean of 79.0±23.97 ng/mL.

Conclusion: Hepcidin measurement can provide a useful tool for differentiating AI from IDA and also help to identify an iron deficiency in AI patients. This might aid in the appropriate selection of therapy for these patients.

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POS0568

OBSESITY RATES AND BMI ARE SIMILAR IN AGE AND SEX MATCHED RHEUMATOID ARTHRITIS, PSORIATIC ARTHRITIS AND SPONDYLOARTHRITIS PATIENTS

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Background: Obesity has been suggested to be a chronic inflammatory condition and therefore, obesity may be considered as a risk factor for developing immune-mediated diseases, including inflammatory arthritis. In larger biologic registries, obesity was found frequently in psoriatic arthritis than other inflammatory diseases such as rheumatoid arthritis and spondyloarthritis. [1-4]. However, obesity may be a reason of aging, moreover, there are strong sex differences between those diseases.

Objectives: The aim of this study was to evaluate the obesity rates in sex and aged matched patients with inflammatory arthritis before the initiation of biological therapy.

Methods: HUR-BIO (Hacettepe University Biologic Registry) is a prospective, single center database of biological treatments since 2005 and to date 5635 patients have been recorded. Demographic, clinical and laboratory data before bDMARD of SpA, RA and PsA patients were noted. The patients were divided into two groups: non-obese patients (<30 kg/m²) and obese (≥30 kg/m²) patients. When investigating the changes in BMI by diagnosis, the effects of gender and age were adjusted using two-way ANOVA and ANCOVA tests. The selection was made for the gender and age indifferences of the relevant groups by using propensity score.

Results: 5059 patients' (1834 RA, 2741 SpA and 484 PsA) BMI data before the bDMARD treatments were available and analysed. Baseline characteristics of RA, SpA and PsA patients were given in Table 1. 72.3% of the RA patients were seropositive. HLAB27 was positive in 64.7% and 22.9% of the SpA and PsA patients. Anti-TNF therapy was started as first bDMARD in 57.2% of the RA patients, others were started with non-Anti-TNF bDMARDs. In SpA (99.2%) and PsA (100%) patients anti-TNFs were the first biologics. Overall, the proportion of obese patients was significantly higher in RA and PsA than in SpA patients (Table 1) and age and sex affected BMI significantly (p<0.001) (Figure 1). After adjusting age and sex indifferences between groups, the difference between the BMI of the patients disappeared (Table 1).

Table 1. Baseline characteristics and BMI of the patients

		RA	SpA	PsA	p
All bDMARD patients	N	1834	2741	484	
	Female, n (%)	1470 (80.2)	1257 (45.9)	334 (69.0)	0.000*
	Age, years*	52.9±13.4	43.1±11.4	47.4±12.2	0.000*
	Disease duration, years*	11 (7-17)	8 (5-13)	7 (3-12)	0.000*
	Body mass index*	29.6 ± 6.5	27.7 ± 5.4	29.2 ± 5.8	0.000*
Age and sex matched group	Obesity, n (%)	811 (44.2)	815 (29.7)	199 (41.1)	0.000*
	N	481	483	484	
	Female, n (%)	315 (65.7)	324 (67.1)	334 (69.0)	0.545
	Age, years*	47 (36-59)	48 (39-57)	47 (38-56)	0.691
	Disease duration, years*	10 (6-15)	5 (5-13)	7 (3-12)	0.000*
	Body mass index*	28.5 ± 6.1	28.5 ± 5.8	29.2 ± 5.8	0.150
	Obesity, n (%)	183 (38.0)	176 (36.4)	199 (41.1)	0.316

* Mean ±S.D. *Median (IQR)

Conclusion: Although obesity was more frequently reported in RA and PsA patients, age and gender seemed to be the major factors in the occurrence of this difference rather than inflammatory arthritis subgroups. Therefore, when considering obesity as a factor in the registries, for instance biological registries, sex and age should be kept in mind.

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Figure 1. BMI regarding to sex and diseases subtypes

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POS0569 LONG-TERM OUTCOMES OF CHILDREN BORN TO WOMEN WITH RHEUMATOID ARTHRITIS

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Background: Children born to women with rheumatoid arthritis (RA) have increased incidences of adverse neonatal outcomes and a potential excess risk of specific diseases during childhood and adolescence [1]. Further studies aimed at confirming long-term consequences in the offspring are needed.

Objectives: To evaluate whether maternal RA has an impact on the health and developmental outcomes of the offspring.

Methods: A retrospective descriptive study was conducted on data regarding 43 children born to mothers diagnosed with either RA or juvenile idiopathic arthritis (JIA) prior to conception. Participants were recruited from several Clinics of Rheumatology located across Romania. Data on neonatal outcomes, lactation, developmental milestones, childhood illnesses, and hospitalizations was collected using a patient-reported questionnaire completed by maternal participants in 2020.

Results: Favorable neonatal outcomes were found in 81% of the participants; however, children of mothers with RA had a higher occurrence of favorable outcomes than those with JIA ($p = 0.009$). Adverse neonatal outcomes reported

include the following: small for gestational age (11.6%), intrauterine growth restriction (4.65%), and preterm births (2.75%). There were no incidences of congenital malformations. The mean birth weights of offspring born to mothers with RA are higher than those with JIA ($p = 0.00829$).

While the majority of the children were breastfed (88.4%), those who were not breastfed were hospitalized more often than those who were breastfed for any period of time ($p = 0.03$). Mothers who experienced a postpartum flare up within the first 4 months breastfed their children significantly less than those who did not have a flare up (14.62 versus 48 weeks, $p = 0.00011$).

The mean age of the children at inclusion was 7.6 ± 5.5 years.

Developmental milestones were considered to be within the expected average limits, except for an increased incidence of delayed speech (12%).

51.2% of the children were hospitalized at some point during their childhood, with viral enterocolitis, tonsillitis, bronchiolitis, and pneumonia being the most frequently encountered reasons for admission. Surprisingly, children with favorable neonatal outcomes were hospitalized more often than those with unfavorable outcomes ($p = 0.0000436$). Additionally, children born to mothers under the age of 35 were hospitalized more often than those over 35 ($p = 0.02$).

77.3% of offspring experienced recurrent ear/nose/throat (ENT) infections, 55.8% had allergies, and 39.5% were diagnosed with atopic dermatitis. Childhood allergies were strongly associated with an increased incidence of atopic dermatitis ($p = 0.0000585$), as was a concurrent maternal thrombophilia diagnosis ($p = 0.03$). Of the remaining childhood afflictions that were assessed asthma/chronic respiratory diseases (4.65%), juvenile idiopathic arthritis (2.33%), ulcerative colitis (2.33%), diabetes, anxiety/personality disorders, thyroid diseases, febrile seizures, and epilepsy did not yield statistically significant results.

Conclusion: Maternal RA was found to be associated with increased incidences of adverse neonatal outcomes, childhood hospitalizations, recurrent ENT infections, allergies, and atopic dermatitis. However, overall health outcomes of offspring did not show alarmingly significant excess morbidities.

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POS0570 ASSOCIATION OF BODY FAT MASS AND ITS DISTRIBUTION WITH DISEASE ACTIVITY, PAIN AND DISABILITY IN RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) and body composition are closely related. Recent studies have found a significant association between fat mass and disease activity and disability in RA [1].

Objectives: We aimed to study the association between body fat mass and its distribution with disease activity, disability, and pain in RA patients.

Methods: This is a cross-sectional study of patients with RA diagnosis according to ACR-EULAR 2010 classification recruited from first January 2021. Those with prior cancer, hyperparathyroidism, hyperthyroidism, diabetes, chronic kidney disease, and cirrhosis were excluded. Body fat mass (BFM) and its distribution (gynoid (GFM), android (AFM), visceral (VFM), limbs (LFM), trunk (TFM)) were measured with dual-energy X-ray absorptiometry (Hologic, Horizon QDR®). Clinical data and laboratory tests of the same day of the DXA scan were analyzed. The associations between BFM and its distribution with disease activity score (DAS28CRP), pain visual analogue scale (VAS), and disability measured by health assessment questionnaire (HAQ) were explored. Obesity was defined as a body mass index (BMI) $\geq 25 \text{ kg/m}^2$. Our statistical analysis was based on descriptive study, comparisons and linear regressions using SPSS 20.

Results: It is about 69 RA patients. Their mean age was 49.86 ± 14.33 years, mean DAS28CRP was 2.56 ± 1.27 , and mean disease duration was 14.84 ± 10.99 years. Sixty-two (89.9%) were women. The mean BMI was $26.46 \pm 5.26 \text{ kg/m}^2$, and 41 patients were obese (59.4%). Compared with non-obese patients, obese patients had a higher C-reactive protein ($p = 0.03$). DAS-28CRP was higher in obese patients (2.77 ± 1.41 vs 2.25 ± 0.97) but did not reach significance ($p = 0.07$). We did not find any difference between the two groups regarding pain and disability. In univariate regression analysis, the LFM was positively associated with disease activity ($p = 0.001$; $\beta = 0.38$), pain ($p = 0.001$; $\beta = 0.38$) and disability ($p = 0.007$; $\beta = 0.32$). Adjusted on BMI, LDL cholesterol, triglyceride, cumulative dose of corticosteroid, disease and corticosteroid duration, menopause duration, dose and duration of methotrexate, we found a significant association between LFM, disability ($p = 0.02$; $\beta = 0.51$), disease activity ($p = 0.02$; $\beta = 0.54$) and pain ($p = 0.009$; $\beta = 0.57$). However, we had no association between disease activity, pain, and disability with BFM and the other components.

Conclusion: Limbs fat mass was significantly associated with the activity, disability, and pain in RA patients.