Background: Intestinal lung disease (ILD) is a severe extra-articular manifestation of rheumatoid arthritis (RA). However, the effect of RA treatment on the course of ILD is not yet known.

Objectives: To assess the effect of RA treatment on the course of lung physiology of RA-focusing on biologic DMARDs treatment.

Methods: The Korean Rheumatoid Arthritis Lrd (KORAIL) cohort is the prospective observational cohort and aims to investigate the natural course of RA patients. Based on either 1987 or 2010 ACR criteria, patients classified with RA and ILD based on CT scan were recruited from six tertiary medical hospitals in Korea since January 2015. RA disease activity was assessed using disease activity score (DAS28-ESR and CRP), annually. Pulmonary function tests (PFT), including FVC and DLCO were conducted annually. In the current study, we analyzed patients who completed a 2-years follow-up or had died during those terms till October 2020. They classified patients into three groups: patients treated with abatacept ≤24 weeks (Group 1), those with bDMARDs ≥24 weeks ever (Group 2), and those without any bDMARDs or with bDMARDs ≤24 weeks (Group 3).

Results: Of a total of 125 patients who completed 2-year follow-up, 21 patients were classified as Group 1, 26 for Group 2, and 78 for Group 3. The mean age or the number of patients with ≥ 65-year-old was comparable between groups (Table 1). The mean duration since RA diagnosis was shorter in Group 3, but that since ILD diagnosis was comparable. DAS28-ESR score was comparable between Group 1 and 2 at enrollment, so was 1-year-follow-up (p=0.75) and 2-year-follow-up (p=1.00). FVC and % of the predicted value in FVC, FEV1, and DLCO were also comparable among the three groups at enrollment. The number of patients with ≥10-point decline in % of FVC predicted was 2 (10.0%) for Group 1, 119 (95.2) 20 (95.2) 25 (96.2) 74 (94.9) at 1-year-follow-up, and 74.0 ± 23.7 %, 69.1 ± 18.9 %, 67.0 ± 18.5 % at 2-year-follow-up. (Figure 1A). The percent of DLco predicted was 81.6 ± 17.5 %, 87.4 ± 17.9 %, 85.2 ± 17.7 % for Group 1, 2 and 3, respectively, at 1-year-follow-up, and 79.5 ± 18.8 %, 89.0 ± 16.8 %, 83.5 ± 17.3 % at 2-year-follow-up. (Figure 1A). The percent of DLOc predicted was 75.5 ± 23.4 %, 66.7 ± 18.1 %, 67.5 ± 16.7 % for Group 1, 2 and 3, respectively, at 1-year-follow-up, and 74.0 ± 23.7 %, 69.1 ± 18.9 %, 67.0 ± 18.5 % at 1-year-follow-up (Figure 1B).

Conclusion: Treatment of bDMARDs did not exacerbate FVC than without bDMARDs treatment and mitigated the decline of DLCO compared to without bDMARDs treatment during 2-year-follow-up.

![Figure 1](https://example.com/figure1.png)

A. The mean of percent of FVC predicted
B. The mean of percent of DLco predicted

**Table 1. Clinical characteristics at enrollment (VI)**

<table>
<thead>
<tr>
<th>n (%), mm</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>125</td>
<td>21</td>
<td>26</td>
<td>78</td>
</tr>
<tr>
<td>Age at enrollment</td>
<td>65.9±8.2</td>
<td>66.0±8.8</td>
<td>63.9±8.0</td>
<td>66.8±8.1</td>
</tr>
<tr>
<td>DLco, % of pred.</td>
<td>71.5±19.7</td>
<td>72.3±26.7</td>
<td>69.1±16.4</td>
<td>72.0±18.7</td>
</tr>
<tr>
<td>DLco, % of pred.</td>
<td>84.6±16.9</td>
<td>80.9±17.7</td>
<td>86.12±17.82</td>
<td>85.08±16.5</td>
</tr>
<tr>
<td>FVC, % of pred.</td>
<td>84.6±16.9</td>
<td>80.9±17.7</td>
<td>86.12±17.82</td>
<td>85.08±16.5</td>
</tr>
<tr>
<td>FEV1, % of pred.</td>
<td>92.4±21.4</td>
<td>92.0±24.8</td>
<td>90.6±22.1</td>
<td>93.0±20.4</td>
</tr>
<tr>
<td>DLco, % of pred.</td>
<td>71.5±19.7</td>
<td>72.3±26.7</td>
<td>69.1±16.4</td>
<td>72.0±18.7</td>
</tr>
</tbody>
</table>

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**POS0565**

**IS ACTIVE SYNOVITIS OF METACARPOPHALANGEAL JOINTS A NEUROPATHIC CONDITION IN RHEUMATOID ARTHRITIS PATIENTS? RESULTS FROM A ULTRASOUND STUDY AT LEVEL OF THE PALMAR DIGITAL NERVES**

**M. Di Carlo**1, J. Di Battista1, R. Chiorni1, E. Cipolletta1, G. Smerilli1, A. Di Matteo1, T. Okano2, F. Salafi3, E. Filippucci1,1 Università Politecnica delle Marche, Dipartimento di Scienze Cliniche e Motorie - Rheumatology Clinic, Jesi, Italy; Osaka City University Graduate School of Medicine, Department of Orthopedic Surgery, Osaka, Japan

**Background:** Rheumatoid arthritis (RA) is a chronic inflammatory arthritis that primarily affects the joints of hands, wrists, and feet. Anatomical damage (at bone, cartilage and tendon level) occurs as a consequence of a persistent synovial inflammation (1). In RA, periarthritis soft tissues, including nerves, may also be involved. In particular, there is a high prevalence of neuropathic conditions such as carpal tunnel syndrome (CTS) in RA patients. In fact, the presence of inflammatory changes can frequently be documented by ultrasound (US) at the level of median nerve (2). Currently available very-high frequency US transducers allow high spatial resolution of small anatomical structures, including the palmar digital nerves.

**Objectives:** The objectives of this study were to: document the presence of dimensional alterations of the palmar digital nerves, particularly in terms of increased cross-sectional area (CSA), and to determine the variables associated with increased CSA, in RA patients.

**Methods:** From September 2020 to December 2020, adult RA patients from a tertiary outpatient clinic were consecutively included regardless of disease activity status. Patients underwent a clinical assessment to determine disease activity using the Clinical Disease Activity Index (CDAI), functional capacity using the QuickDASH, and the presence of neuropathic pain features using the PainDetect Questionnaire (PDQ). In the same visit, patients underwent a US examination of the 2nd to 5th metacarpophalangeal joints (MCP) of the clinically more involved hand by an operator blinded to the clinical assessment. The presence/absence and US grading of synovitis was recorded for each joint. A third operator, blinded to the clinical and joint US assessment, measured the CSA of each pair of palmar digital nerves from 2nd to 5th finger scanned for assessment joint involvement. The CSA of the palmar digital nerves was measured at the MCP of the clinically more involved hand by an operator blinded to the clinical assessment. The presence/absence and US grading of synovitis was recorded for each joint. A third operator, blinded to the clinical and joint US assessment, measured the CSA of each pair of palmar digital nerves from 2nd to 5th finger scanned for assessment joint involvement.

**Results:** Sixty-three patients with RA were included, 48 women, 15 men, with a mean age of 62.2 (11.8, standard deviation [SD]) years, a mean disease duration of 10.9 (8.2) years, for a total of 252 MCP and 504 palmar digital nerves. The CSA of the palmar digital nerves taken individually was 2.3 (0.9 mm²), ranging from 1 mm² to 8 mm², and 4.2 (1.5 mm²) as a pair for finger. There was a statistically significant association with disease activity as assessed by the CDAI (p<0.001), and with the grading of US synovitis (p<0.001), while there were no significant associations with any of the other variables.

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**Disclosure of Interests:** Sung Hae Chang: None declared, Ji Sung Lee: None declared, Jeong Seok Lee: None declared, Chan Ho Park: None declared, Min Uk Kim: None declared, You-Jung Ha: None declared, Eun Ha Kang: None declared, Yeon Ah Lee: None declared, Yongbeom Park: None declared, Jung-Yoon Choe: None declared, Eun Young Lee Grant/research support from: Bristol Myers Squibb Inc.

**DOI:** 10.1136/annrheumdis-2021-eular.3094
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 and is associated with the HADS anxiety score (p<0.0001), HADS depression score (1.07 -1.33). In multivariate linear regression, catastrophizing was significantly associated with DAS28-CRP (OR= 1.61 [1.18-2.20]), HADS depression score (OR=1.19 [1.02-1.38]) and the HADS anxiety score (OR=1.25 [1.11-1.40]) and the HADS depression score (p<0.0001) (Figure 1).

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POS0567

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

E. Galushko1, A. Semashko1, A. Gordeev1, A. Lila1, V.A.Nasonova Research Institute of Rheumatology, Department of Early Arthritis, Moscow, Russian Federation

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.

Objective: 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 in 96 patients with RA, 67 of them were diagnosed anemia according to WHO criteria (104,3±21,4 g/dL). 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 (8.3±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 into 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 (123.8±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)] and serum hepcidin concentration was reduced significantly in AI patients with 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.

Disclosure of Interests: None declared

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POS0566

CATASTROPHIZING IN PATIENTS WITH RHEUMATOID ARTHRITIS

C. Traverso1, B. Coste1, E. Filhol12, C. Daëns1, S. Laurent-Chaballier2, S. Benamar2, B. Combe12, C. Lukas123, J. Morel12, C. Hua12, C. Gaujoux-Viala12, 1Nîmes University Hospital, Rheumatology, Nîmes, France; 2University of Montpellier, IDESP, UMR-INSERM, Montpellier, France; 3CHU Lapeyronie, Rheumatology, Montpellier, France; 4University of Montpellier, Montpellier, France; 5Nîmes University Hospital, BESPIM, Nîmes, France

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). 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), quality of life (SF12, EQ5D), anxiety and depression (HADS, GAD7), fibromyalgia (FiRST), insomnia (ISI) and catastrophizing as a categorical variable: PCS ≥ 20 = high level catastrophizing). In addition, catastrophizing was assessed 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. Sociodemographic data: 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 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 logistic 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 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.

References:

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