PROs are important to consider as markers of future development of RA. It is necessary to expand the number of patients recruited to obtain more robust conclusions.

Disclosure of Interests: Laura Nuño: None declared, Diana Peiteado: None declared, Irene Monjo: None declared, Alejandro Villalva: None declared, Marta Novella-Navarro: None declared, Maria-Eugenia Miranda-Carus Grant/research support from: BMS, Roche, Paula Fortea-Gordo Grant/research support from: BMS, Maria-Jose Santos-Bornez Grant/research support from: BMS, Eugenio de Miguel Grant/research support from: Yes (AbbVie, Novartis, Pfizer), Consultant of: Yes (AbbVie, Novartis, Pfizer), Paid instructor for: yes (AbbVie, Novartis, Pfizer, MSD, BMS, UCB, Roche, Grunental, Janssen, Sanofi), Speakers bureau: yes (AbbVie, Novartis, Pfizer, MSD, BMS, UCB, Roche, Grunental, Janssen, Sanofi), Alejandro Balsa Grant/research support from: BMS, Roche, Consultant of: AbbVie, Gilead, Lilly, Pfizer, UCB, Sanofi, Sandoz, Speakers bureau: AbbVie, Lilly, Sanofi, Novartis, Pfizer, UCB, Roche, Nordic, Sandoz

DOI: 10.1136/annrheumdis-2020-eular.3977

AB0215

EARLY IMPROVEMENT OF THE POWER DOPPLER SIGNAL CAN PREDICT TO CONTINUE THE BIOLOGICAL DMARDS AFTER 1 YEAR.

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Background: In rheumatoid arthritis (RA), biologics treatment is one of the effective treatment options. On the other hand, the effects of biologics cannot be obtained satisfactorily in all patients, and there are some cases in which treatment is interrupted due to ineffective or adverse events. However, the useful predictive markers of the biologics have not been found in the early phase of treatment in RA. Recently, ultrasound (US) has played a role of sensitive imaging modality in the diagnosis and follow-up of patients with RA.

Objectives: In this study, we investigated whether continuation of biologics treatment can be predicted by ultrasonographic findings in the early phase.

Methods: Fifty-four RA patients who started the first biologics from September 2016 to December 2018 were included. All the patients were performed clinical examination, blood tests and US examination of hand and foot at baseline, 4, 12, 24, 36 and 52 weeks. US examination was performed on MCP joints, PIP joints, wrist and MTP joints.

Results: Among 54 cases, 42 cases were able to continue treatment until one year later, and the continuation rate was 80.8%. Of the 12 patients who discontinued first biologics treatment, 5 were changes to other biologics due to inadequate response, 4 were their wishes, and 3 were adverse events. Multiple regression analysis was performed with treatment continuation as the dependent variable and improvement of CRP, MMP-3, DAS28-CRP, grayscale score and power Doppler score in 4 weeks as explanatory variables. Only improvement of power Doppler score was extracted as a significant predictor ($p = 0.045$). In the continuation group, the improvement of the power Doppler signal at week 4 was 36% compared with the baseline, compared with 10% in the discontinuation group.

Conclusion: The early improvement of power Doppler signal in 4 weeks could be a predictive factor for the continuation of 1-year biological treatment.

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Table 1. Multivariate regression analysis of predictive factors for continuation of biologics treatment in 1-year.

Improvement ratio of 0 to 4 weeks	beta	P value
CRP	-0.122	0.465
MMP-3	0.228	0.103
DAS28 CRP	0.280	0.103
Ultrasound grey scale score	-0.342	0.119
Ultrasound power Doppler score	0.442	0.045

Acknowledgments: We thank Emi Yamashita, Yuko Yoshida, Asami Fujii and Shingo Washida who performed ultrasound examination.

Disclosure of Interests: Tadashi Okano Grant/research support from: AbbVie, Eisai, Mitsubishi Tanabe Pharma Corporation and Nipponkayaku, Speakers bureau: AbbVie, Asahikasei, Astellas Pharma Inc, Ayumi Pharmaceutical, Bristol-Myers Squibb, Chugai Pharmaceutical, Daiichi Sankyo, Eisai, Janssen, Lilly, Mitsubishi Tanabe Pharma Corporation, Novartis Pharma, Ono Pharmaceutical, Pfizer, Sanofi, Takeda Pharmaceutical, Teijin Pharma and UCB, Kenji Mamoto: None declared, Yutaro Yamada: None declared, Koji Mandai: None declared, Shohei Anno: None declared, Kentaro Inui Grant/research support from: Janssen Pharmaceutical K.K., Astellas Pharma

Inc., Sanofi K.K., AbbVie GK, Takeda Pharmaceutical Co. Ltd., QOL RD Co. Ltd., Mitsubishi Tanabe Pharma, Ono Pharmaceutical Co. Ltd., Eisai Co., Ltd., Speakers bureau: Daiichi Sankyo Co. Ltd., Mitsubishi Tanabe Pharma, Janssen Pharmaceutical K.K., Astellas Pharma Inc., Takeda Pharmaceutical Co. Ltd., Ono Pharmaceutical Co. Ltd., AbbVie GK, Pfizer Inc., Eisai Co., Ltd., Chugai Pharmaceutical Co., Ltd., Tatsuya Koike Grant/research support from: AbbVie, Astellas Pharma Inc, Bristol-Myers Squibb, Chugai Pharmaceutical, Eisai, Janssen, Lilly, Mitsubishi Tanabe Pharma Corporation, MSD, Ono Pharmaceutical, Pfizer, Roche, Takeda Pharmaceutical, Teijin Pharma, and UCB, Speakers bureau: AbbVie, Astellas Pharma Inc, Bristol-Myers Squibb, Chugai Pharmaceutical, Eisai, Janssen, Lilly, Mitsubishi Tanabe Pharma Corporation, MSD, Ono Pharmaceutical, Pfizer, Roche, Takeda Pharmaceutical, Teijin Pharma, and UCB, Hiroaki Nakamura Grant/research support from: Astellas Pharma Inc. and Asahi Kasei Pharma Co.

DOI: 10.1136/annrheumdis-2020-eular.2794

AB0216

POWER DOPPLER SCORE IS USEFUL TO PREDICT JOINT DESTRUCTION OF HAND AND WRIST JOINT IN RHEUMATOID ARTHRITIS PATIENTS.

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Background: Several studies demonstrated that total power Doppler (PD) signal can predict radiographic progression as a change in total van der Heijde-modified total Sharp score (mTSS) in rheumatoid arthritis (RA) patients. However, in some studies, radiographic progression was observed in a different joint compared with the site of a positive PD signal at baseline in many cases.

Objectives: The aim of this study was to identify the clinical factor of RA patients in association with radiographic progression of hands and wrists and to investigate which joint showed radiographic progression in RA patients. We focused on the correlation of the site of a positive PD signal and the site of radiographic progression.

Methods: We examined retrospectively of 70 RA patients (67 women, three men) who underwent ultrasonography (US) examination at 32 regions on bilateral hands and wrists from 2014 to 2016. Radiographs of the hands were taken at baseline and at least one year after US (mean, 19.9 months), and radiographic progression was assessed using mTSS system. We performed multivariate logistic regression analysis to investigate the association between baseline factors and radiographic progression. The relationships between radiographic progression of the individual joint and total/each joint PD score were assessed by ROC analysis and Fisher's exact test.

Results: Nineteen patients (37.3%) experienced progression of mTSS of hands and wrists. DAS28-CRP ($P=0.02$) and total PD score ($P=0.01$) were associated with radiographic progression, and total PD score was significantly associated with radiographic progression (OR 1.22; 95% CI 1.04-1.36; $P=0.006$) by multivariate logistic regression analysis (Table 1).

Table 1. Association between the demographic and clinical findings at baseline and radiographic progression over 12 months

a.univariate analysis	No radiographic progression (n = 51)	Radiographic progression (n = 19)	P-value
Age, years	63.4 ± 12.7	58.1 ± 10.6	0.61
Duration of RA, years	24.4 ± 13.6	20.0 ± 5.0	0.28
Usage of Bio, %	42.2	40.4	0.57
Amount of MTX, mg/week	4.8 ± 3.3	4.5 ± 4.3	0.77
Amount of PSL, mg	1.5 ± 2.1	1.8 ± 2.2	0.73
DAS28-CRP	2.5 ± 0.7	2.9 ± 0.6	0.02*
CRP, mg/dl	0.4 ± 0.5	0.7 ± 0.7	0.10
Total PD score	2.4 ± 3.3	6.6 ± 6.1	0.01*
b.multivariate analysis	odds ratio	95% CI	P-value
DAS28-CRP	1.63	0.72 - 3.71	0.238
Total PD score	1.19	1.04 - 1.36	0.010*

Predictive performance of total PD score was good for radiographic progression of MCP joint (AUC-ROC 0.91) and wrist joint (AUC-ROC 0.85), although poor for PIP joint (AUC-ROC 0.57).

PD score of wrist joint, MCP joint, and PIP joint were significantly associated with radiographic progression of each joint ($P<0.01$). The sensitivity, specificity, positive predictive value, and negative predictive value of wrist joint PD score were 100%, 57.0%, 8.0%, and 100%, MCP joint PD score were 85.7%, 90.5%, 8.0%, 99.8%, and 8.3%, and PIP joint PD score were 30.0%, 97.2%, 13.6%, and 99.0%, respectively.

Conclusion: Total PD score of hands and wrists was a strong predictor of radiographic progression, especially in MCP and wrist joint. Evaluation of PD signal in individual joint is a clinically useful method to predict radiographic progression of the same joint, however there are some differences in sensitivity and specificity.

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Disclosure of Interests: Shunji Okita: None declared, Ryuichi Nakahara: None declared, Minami Matsuhashi: None declared, Masahito Watanabe: None declared, Yoshihisa Nasu: None declared, Keiichiro Nishida Grant/research support from: K. Nishida has received scholarship donation from CHUGAI PHARMACEUTICAL Co., Eisai Co., Mitsubishi Tanabe Pharma and AbbVie GK., Speakers bureau: K. Nishida has received speaking fees from CHUGAI PHARMACEUTICAL Co., Eli Lilly, Janssen Pharmaceutical K.K., Eisai Co. and AYUMI Pharmaceutical Corporation., Toshifumi Ozaki: None declared
DOI: 10.1136/annrheumdis-2020-eular.2146

AB0217

IMPACT OF THE BODY-MASS-INDEX ON DISEASE ACTIVITY, FUNCTIONAL ABILITY AND QUALITY OF LIFE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Objectives: This study aims to assess differences in disease activity, functional ability and quality of life among underweight, normal weight, overweight and obese patients with rheumatoid arthritis (RA).

Methods: 715 patients with RA (609 women and 106 men) were included in this study. According to their Body-Mass-Index, all patients were divided into four subgroups: underweight (BMI <18,5), normal weight (BMI between 18,5 and 24,9), overweight (BMI between 25,0 and 29,9) and obesitas (BMI ≥ 30,0). Mean values of DAS₂₈, CDAI and SDAI (measures of disease activity), HAQ-disability index (measure of functional ability) and RAQoL index (measure of quality of life) were compared among four subgroups of patients.

Results: 28 (3,9%) RA patients were underweight, 310 (43,4%) had normal weight, 268 (37,5%) were overweight, whilst 109 (15,2%) patients were obese. Among these subgroups, no difference in mean age, disease duration, percentage of seropositive patients, and patients treated with glucocorticoids, csDMARDs or biologics, was noticed. There were no statistically significant differences in mean values of DAS₂₈, CDAI and SDAI in four subgroups of patients. However, mean value of the HAQ disability index was significantly higher ($p < 0.05$) in underweight (1.32) and obese patients (1.27), compared to normal (0.87) and overweight patients (1.08). The mean value of the RAQoL-Index was also somewhat higher in underweight and obese patients (8.8 and 8.1, respectively) than patients who are overweight or have normal weight (7.0 and 6.5, respectively), but the difference was not statistically significant.

Conclusion: Underweight and obese RA patients have worse physical function than normal and overweight patients. However, worse disability can not be explained by higher disease activity.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.4832

AB0218

FUNCTIONAL DISABILITY AND PAIN BUT NOT DISEASE ACTIVITY ARE ASSOCIATED WITH POOR HEALTH-RELATED QUALITY OF LIFE IN A COHORT OF RHEUMATOID ARTHRITIS PATIENTS

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Background: Rheumatoid Arthritis (RA) is a systemic autoimmune disease that presents with joint pain and inflammation leading to significant disability and poor health-related quality of life (HRQoL) (1,2). Optimizing long-term HRQoL is the primary goal of disease management in RA (3).

Objectives: To evaluate HRQoL and identify its influencing clinical and demographic factors in a Portuguese RA population.

Methods: This is a cross-sectional study including consecutive patients fulfilling the ACR/EULAR 2010 and/or ACR 1987 RA classification criteria, followed at a tertiary Rheumatology Department. Sociodemographic and clinical variables were collected. HRQoL was assessed using the EuroQoL 5-Dimensional Descriptive System (EQ-5D) total score (normal range from -0.496 to 1.000, lower values indicating poorer HRQoL). Independent t-test and Pearson's correlation coefficient were performed to evaluate EQ-5D differences between groups and examine its relationships with continuous variables, respectively. Variables with $p < 0.1$ in univariate analysis were included in a stepwise multiple linear regression analysis to evaluate the independent association of variables with the EQ-5D score.

Results: 358 RA patients were included (80.20% female, mean age $\pm$ SD: 63.22 ± 0.66 years old). Mean EQ5D total score $\pm$ SD was 0.48 ± 0.01 . Based on EQ-5D domains, 0.60% reported extreme problems with mobility, 3.40% extreme problems with self-care, 2.50% extreme problems with usual activities, 12.0% extreme pain or discomfort, and 7.30% extreme anxiety or depression symptoms (Fig. 1). There was a significant difference in EQ-5D scores between male ($M=0.55$, $SD=0.24$) and female gender ($M=0.46$, $SD=0.27$); $t(356) = -2.41$, $p=0.016$. EQ-5D was weakly correlated with DAS-28-CRP ($r=-0.32$; $p<0.001$), moderately correlated with patient's global assessment of disease activity ($r=-0.54$; $p<0.001$) and pain-visual analogue scale (pain-VAS) scores ($r=-0.58$; $p<0.001$) and strongly with Health Assessment Questionnaire (HAQ) score ($r=-0.72$; $p<0.001$). After multivariate analysis, HAQ-score ($\beta=-0.57$ [95% CI -0.24 to -0.17]; $p<0.001$) and pain-VAS ($\beta=-0.25$ [95% CI -0.003 to -0.002]; $p<0.001$) remained as independent predictors of EQ-5D ($R^2=0.56$, $p<0.001$).

Conclusion: Greater functional impairment and pain are associated with poor HRQoL in RA patients, and thus special attention must be given to treatment strategies providing the best patient-centred outcomes.

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Fig. 1. Distribution of answers according to each EQ-5D domain.

Disclosure of Interests: Ana Rita Prata: None declared, Helena Assunção: None declared, Mariana Luis: None declared, Luisa Brites: None declared, Flavio Costa: None declared, João Dinis de Freitas: None declared, Stefanie Silva: 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.2524

AB0219

PREDICTIVE FACTORS FOR THE PROGRESSION OF EARLY INFLAMMATORY ARTHRITIS TO RHEUMATOID ARTHRITIS

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Objectives: To identify factors predicting the progression of early inflammatory arthritis (EIA) to rheumatoid arthritis (RA)

Methods: This was a prospective longitudinal study of inflammatory rheumatism that could not be classified according to defined rheumatism criteria. Demographic, biological, immunological and radiographic data were collected at the time of inclusion in the study. Disease activity as determined by the Disease Activity Score 28-CRP (DAS28-CRP: 4 variables), functional handicap as calculated by Health Assessment Score (HAQ), and bone and joint damage as evaluated by Sharp-Van der Heijde (SVDH) score. ultrasound joint imaging were evaluated at the beginning of the study and then 1 year later. Logistic regression was performed to identify predictive factors for progression to RA.

Results: One hundred seventy two patients were included (24 men, 148 women), with an mean age 43.13 ± 14.07 years and an mean time to diagnosis 10.24 ± 6.84 months. The mean ESR was 46.81 ± 31.16 mm/1st hour, and the mean CRP level was 22.84 ± 39.8 mg/l. Rheumatoid factors (RFs) and anti-citrullinated protein antibodies (ACPAs) were present in 48.8% and 53% of patients, respectively. The erosion, joint space narrowing, and total SVDH scores were 3.38 ± 3.48 , 5.08 ± 3.32 , and 5.95 ± 4.94 , respectively. One hundred sixty one patients were followed up for 12 months. Multivariate regression analysis showed that a DAS28-CRP level > 5.2 (OR=28.6; CI95% 8.7-94.5), an RF level > 60 IU/L (OR=11.2; CI95% 4.3-87.5), and an ACPA