REFERENCES:

- [1] Nikiphorou E et al. *Arthritis Res Ther* 2016;18:251
 [2] Ferreira RJO et al. *Ann Rheum Dis* 2019;78:e109.

Table 1. Associations of PGA in early RA at different time points

	0 months		6 months		12 months		24 months	
	r (95% CI)	p	r (95% CI)	p	r (95% CI)	p	r (95% CI)	p
VAS	0.74	<0.001	0.83	<0.001	0.84	<0.001	0.83	<0.001
pain	(0.70-0.77)		(0.80-0.86)		(0.80-0.86)		(0.79-0.87)	
HAQ	0.47	<0.001	0.54	<0.001	0.57	<0.001	0.50	<0.001
	(0.41-0.54)		(0.46-0.62)		(0.50-0.63)		(0.41-0.59)	
SJC28	0.27	<0.001	0.27	<0.001	0.21	<0.001	0.23	<0.001
	(0.19-0.35)		(0.18-0.35)		(0.12-0.30)		(0.13-0.33)	
TJC28	0.34	<0.001	0.39	<0.001	0.39	<0.001	0.30	<0.001
	(0.27-0.41)		(0.31-0.47)		(0.30-0.46)		(0.20-0.40)	
CRP	0.08	0.05	0.09	0.07	0.19	<0.001	0.03	0.63
	(0.00-0.17)		(0.00-0.19)		(0.10-0.28)		(0.09-0.14)	
VAS	β stand	p	β stand	p	β stand	p	β stand	p
pain	0.66	<0.001	0.76	<0.001	0.74	<0.001	0.80	<0.001
HAQ	0.20	<0.001	0.18	0.01	0.20	0.03	0.22	0.003
SJC28	0.17	0.03	0.15	0.04	0.11	0.04	--	--
TJC28	--	--	--	--	--	--	--	--
CRP	--	--	--	--	--	--	--	--

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POS0576 EFFECTS OF ACUTE EXERCISE ON SERUM BDNF LEVEL IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Brain derived neurotrophic factor (BDNF) is a neurotrophic factor that may show healing, survival-promoting and protective effects on neurons in central and peripheral nervous system. The effect of physical exercise on serum BDNF is unclear. Also, BDNF level was found significantly lower in rheumatoid Arthritis (RA) patients with depression.

Objectives: Aim of this study is to investigate the variation of BDNF levels following acute exercise and potential correlation between BDNF levels and depression.

Methods: This study included 44 RA patients and 44 age and sex matched healthy controls (HC). Aerobic exercise was performed to all participants for a single session. The intervention was performed on a treadmill and included 5 minutes of warm-up, 20 minutes of walking exercise reaching at 60- 80% of Maximal heart rate and 5 minutes of cool-down. Depression and anxiety levels were evaluated with Beck Depression Inventory (BDI) and Hospital Anxiety and Depression Scale (HADS). Blood samples from all subjects were taken and centrifuged before and immediately after the exercise intervention.

Results: Serum BDNF levels (both baseline and post-exercise) were similar in the RA and HC group (Table 1). Although after aerobic exercise serum BDNF levels were significantly decreased in both RA and HC groups (Wilcoxon Rank P < 0.05) Δ BDNF levels was significantly higher in the RA group than HC group. Serum BDNF level was increased in 30.2% of healthy subjects and 4.5% of RA patients (P = 0.002). On the other hand, BDI, HADS depression and HADS anxiety indices were correlated significantly with Δ BDNF levels in the RA group (p<0.05) but not in HC group.

Conclusion: A single bout of exercise may be effective on serum BDNF levels in patients with RA and healthy subjects. However, psychological comorbidities affect the amelioration of BDNF level, in RA. The long-term effect of alterations on BDNF level is candidate to evaluate by prospective studies.

Table 1. Clinical and laboratory characteristics in the study groups

	RA (n=44)	HC (n=44)	P
Mean age, years	46.8±10.3	43.4±6.4	0.071*
Females, n (%)	32 (72.7)	31 (70.5)	0.813**
Active smokers, n (%)	12 (27.3)	10 (22.7)	0.622**
BMI, kg/m ²	26.8±4.6	25.6±2.4	0.127*
HADS Depression	10.2±3.9	2.2±2.1	<0.001*
HADS Anxiety	10.4±4.1	2.4±2.1	<0.001*
BDI	17.9±8.1	3.7±4.1	<0.001*
BDNF (baseline), pg/ml	798.9±381.1	688.7±469.9	0.069***
BDNF (post-exercise), pg/ml	469.5±193.5	509.9±380.4	0.593***
Δ BDNF, pg/ml	329.5±258.4	211.1±302.6	0.047***
BDNF increased, n (%)	2 (4.5)	13 (30.2)	0.002**

RA; rheumatoid arthritis, HC; healthy control, BMI; body mass index, HADS; Hospital Anxiety and Depression Scale, BDI; Beck Depression Inventory, BDNF; brain derived neurotrophic factor*Student's t test, **Chi square test and ***Mann Whitney U test

Disclosure of Interests: None declared

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POS0577 EVALUATION OF COPING STRATEGIES IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Studies have shown that the association of pain, stiffness, disability, and social restrictions in rheumatoid arthritis (RA) patients induce a significantly increased level of depressed mood and stress. The use of favorable coping strategies could lead to improve physical and psychological well-being.

Objectives: To evaluate coping strategies of RA patients and their associations with health-related quality of life (HRQoL) outcomes.

Methods: A cross-sectional sample of patients with established RA was evaluated using measures of coping: the Brief-COPE (scores presented for the two overarching coping styles: Approach coping including active coping, emotional support, use of informational support, positive reframing, planning and acceptance, and Avoidant coping including self-distraction, denial, substance use, behavioral disengagement, venting and self-blame), the HRQoL (Mental and Physical Components [MCS/PCS] of the Short Form 12), and the Rheumatoid Arthritis Impact of Disease score (RAID). Multiple linear regression analyses were performed to evaluate the associations between coping strategies and HRQoL outcomes.

Results: The study sample comprised 45 patients with a female predominance (91.9 %), and a mean age of 55.7± 9.9 years [38-77]. The median disease duration was 10 years [38-77]. The majority of patients (82.8 %) were positive for either rheumatoid factor or anti-CCP. Half of the patients were on biological disease-modifying antirheumatic drugs. Two active coping strategies were identified: Approach coping (E = 4.29) and Avoidant Coping (E=3.86), which explained 40% of the total variance. Mean RAID was 4.8± 1.6, while the mean PCS and MCS were 31.9 ± 9.4 and 39.7 ± 9.4, respectively. Approach coping and avoidant coping were associated with PCS (r= 0.4, p = 0.03), (r=0.3, p=0.008) respectively. However, no association was found between coping strategies and MCS or RAID (p>0.05). In the multivariate model, approach coping and avoidant coping were significant to explain lower disease-specific HRQoL (PCS) (Beta= 0.4, p= 0.008), (Beta=0.3, p=0.02) respectively. **Conclusion:** Approach and avoidance are associated with lower disease-specific HRQoL (PCS) but not with lower disease-specific HRQoL (MCS). Doctors should not forget to help their patients developing adaptive coping strategies.

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POS0578 CORRELATION BETWEEN EXPRESSION LEVELS OF MIR-155 AND MIR-223 IN SYNOVIAL FLUID AND ULTRASOUND SCORES FOR ACTIVE SYNOVITIS IN RHEUMATOID ARTHRITIS PATIENTS

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Background: MicroRNAs (miRNAs) are a class of small, non-coding RNAs that negatively regulate gene expression at posttranscriptional level. In rheumatoid arthritis studies have shown that miRNA are differentially expressed systemically as well as locally in the inflamed joints [1,2]. The correlation between their systemic or local expression levels and scores for disease activity and progression in RA make them possible candidate for biomarkers in the clinical practice.

Objectives: To analyze the expression levels of miR-155 and miR-223 in synovial fluid (SF) from RA patients in regard to the ultrasound scores for disease activity.

Methods: A total number of 48 RA patients according to the 1987 ACR criteria were included in the study. Expression levels of miR-155 and miR-223 SF were determined by qPCR (SybrGreen technology) and compared to healthy controls (HCs). Relative changes of gene expression levels of the studied miRNAs were calculated by 2^{- $\Delta\Delta$ CT} method. Musculoskeletal ultrasound (MSUS) examination was performed by two

independent examiners on ESAOTE, MyLab60 using both grey scale and power Doppler technic. A semi-quantitative assessment of the peripheral joints was performed for detecting joint inflammation and determining the grade of synovial thickening and the degree of vascularization. Ultrasound features for active disease were correlated to the local expression of the studied miRNAs. SPSS was used for statistical analysis.

Results: RA SF showed overexpression of miR-155 (in 79.17%, $p=1.63 \times 10^{-4}$) and of miR-223 (in 79.17%, $p=1.64 \times 10^{-3}$) when compared to HCs (both miRNAs could be used to differentiate RA patients from HCs ($p=8.0 \times 10^{-5}$ and $p=2.8 \times 10^{-4}$, respectively). When we analyzed the correlation between the diagnosis, the expression of miRNAs and the changes on the musculoskeletal ultrasound examination we found a statistically significant correlation between the presence of synovitis and the degree of the power Doppler signal on MSUS and the local expression of miR-223 ($p=6.19 \times 10^{-4}$ and $p=0.003$, respectively). SF levels of miR-223 correlated also with the degree of synovial hypertrophy on MSUS ($p=0.013$). The results for miRNA-155 were not statistically significant.

Conclusion: The correlation between the local expression of miR-223 and the ultrasound features of active joint inflammation shows that this miRNA might be a better candidate for local disease biomarker than miR-155. Further analysis with larger sets is needed to confirm if altered local miRNA expression could be used in the clinical practice as biomarker for disease activity especially in cases with subclinical synovitis.

REFERENCES:

[1] Filková M, Aradi B, Šenolt L, et al. Association of circulating miR-223 and miR-16 with disease activity in patients with early rheumatoid arthritis. *ARD*, 2014; 73: 1898-1904.

[2] Kriegsmann M, Randau T.M., Gravius S, et al. Expression of miR-146a, miR-155, and miR-223 in formalin-fixed paraffin-embedded synovial tissues of patients with rheumatoid arthritis and osteoarthritis. *Virchows Arch*, 2016; 469: 93-100.

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POS0579

LOCAL ADAPTATION OF RECOMMENDATION-BASED MATERIALS FOR SHARED DECISION-MAKING AND MANAGEMENT OF COMORBIDITY IN RHEUMATOID ARTHRITIS

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Background: Evolving the management of rheumatoid arthritis (eRA) is a European-wide educational initiative aiming to support improved patient care through practical and educational tools addressing specific unmet needs. The aims of the eRA program were: (1) To identify priority unmet needs with the greatest impact on disease outcomes; (2) To develop practical, educational and guidance tools in line with EULAR recommendations to address identified unmet needs; and (3) To improve RA management and patient care.

Objectives: To describe the process by which local adaptations were made of materials derived from evidence-based recommendations in a training programme in rheumatoid arthritis (RA).

Methods: A multidisciplinary Steering Committee (17 members, 12 countries) identified unmet needs within the management of RA and prioritised those with the greatest impact on patient outcomes. Practical educational tools addressing priority needs were then developed for dissemination and implementation by the rheumatology community across Europe, including shared decision making practises and a checklist for managing comorbidity in RA, among others. These materials were evaluated in detailed and discussed in small regional groups by practicing rheumatologists. Voting, open discussions and recommendations were extracted from the meetings.

Results: Thirty-five Spanish rheumatologists from diverse geographic regions discussed a comorbidity checklist and a shared decision making tool. The results of the local meetings were synthesised as (1) a judicious commitment to check agreed comorbidities, and (2) a list of barriers and facilitators for the implementation of shared decision making at the local settings. With regards to ways to implement the agreed list and periodicity, two issues stood-out: (1) patient education and (2) the need of easy access to information and the use of local organisational

systems in place. With respect to shared decision-making, issues raised included messages for self-awareness, challenges, and practical facilitators.

Conclusion: Discussion, adaptation, and planning are needed before implementing any evidence-based recommendation and materials if we want to achieve a successful implementation. Further studies should demonstrate whether this initiative was successful in achieving the goals of improved patient care. Our experience could be used as a guidance or example for implementation elsewhere.

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POS0580

COMORBIDITY BURDEN IS HIGH IN RHEUMATOID ARTHRITIS AND SPONDYLOARTHRITIS PATIENTS STARTING BIOLOGICS AND PREDICTS THE INCIDENCE OF SERIOUS ADVERSE EVENTS DURING THERAPY

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Background: There is limited information on the burden of comorbidities in patients with rheumatoid arthritis (RA) and spondyloarthritis (SpA) in real-world clinical practice and its impact on the incidence of serious adverse events (SAE) during biologic disease-modifying anti-rheumatic drug (bDMARD) therapy.

Objectives: To evaluate the number of comorbidities in patients with RA and SpA initiating a bDMARD in everyday clinical practice and to explore its association with the occurrence of a SAE during therapy.

Methods: Prospective study of all patients who start any bDMARD treatment in a tertiary centre University Hospital. All comorbidities and SAEs (AEs necessitating hospitalization or resulting in significant incapacity/death) are registered by treating physicians. Comorbidities' number was evaluated using two different indices: total comorbidities count (CC) and Rheumatic Disease Comorbidity Index (RDCI). Statistical analysis was performed using multinomial logistic and Cox regression models.

Results: A total of 799 patients were analysed, of which 428 (54%) had ≥ 3 comorbidities (Table 1). Comorbidity burden was higher in RA, however in multivariable analyses, comorbidities were not significantly associated with diagnosis, but mainly with increasing patient age. Patients received 1701 bDMARD treatments. During a follow-up of 4019 patient-years, 198 patients (RA:134, SpA:64) had a total of 295 SAE (RA: 217, SpA:78). Each one additional comorbidity in CC index was resulting in 16% increased adjusted risk for the first SAE [HR (95%CI) = 1.16 (1.12-1.20), $p<0.001$], and each additional comorbidity of the RDCI index was resulting in 28% increased risk [HR (95%CI) = 1.28 (1.20-1.37), $p<0.001$]. Other baseline independent predictors of the first SAE were greater age [HR=1.04, $p<0.001$] and use of corticosteroids [HR=1.42, $p=0.006$].

Table 1. Biologic treatments and clinical characteristics at baseline

Patients, N	Total	RA	SpA	p
	799	501	298	
Females, N (%)	535 (67)	404 (81)	131 (44)	<0.001
Age, median (IQR) $\bar{x}$ (IQR)	55 (45-65)	60 (51-68)	46 (36-54)	<0.001
Disease duration, median (IQR) $\bar{x}$ (IQR)	6.0 (2.5-13)	5.4 (3-11)	7.4 (2.0-15)	<0.001
Comorbidities count, median (IQR)	3 (1-5)	3 (2-6)	2 (1-4)	<0.001
Patients with no comorbidities, N (%)	103 (13)	43 (9)	60 (20)	<0.001
Patients with 1 comorbidity, N (%)	134 (17)	77 (15)	57 (19)	0.172
Patients with 2 comorbidities, N (%)	134 (17)	76 (15)	58 (19.5)	0.118
Patients with ≥ 3 comorbidities, N (%)	428 (54)	305 (61)	123 (41)	<0.001
RDCI, median (IQR)	1 (0-2)	2 (0-3)	1 (0-2)	<0.001
Patients with RDCI = 0, N (%)	267 (33)	128 (25.5)	139 (47)	<0.001
Patients with RDCI = 1, N (%)	185 (23)	119 (24)	66 (22)	0.665
Patients with RDCI = 2, N (%)	163 (20)	113 (23)	50 (17)	0.057
Patients with RDCI ≥ 3 , N (%)	184 (23)	141 (28)	43 (14)	<0.001
Total bDMARDs initiated by patients, N	1701	1098	603	
Co-administered methotrexate, N (%)	946 (56)	674 (61)	272 (45)	<0.001
Co-administered corticosteroids, N (%)	493 (29)	397 (36)	96 (16)	<0.001
DAS28, median (IQR) (in RA and perSpA)	5.8 (4.9-6.6)	5.8 (5.0-6.6)	5.4 (4.2-6.3)	<0.001
BASDAI, median (IQR) (in axSpA)	-	-	5.6 (4.5-7.0)	

Conclusion: Patients with RA and SpA initiating a bDMARD treatment in real-world clinical practice have a significant comorbidity burden which increases with age and is an independent predictor for an SAE during therapy.

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