Conclusions: Psoriasis which is genetically and mechanistically linked to IFN-I signatures shows responses to Ustekinumab therapy that correlate with improvement in IFN-I signatures in blood and tissues. Given that whole blood ISG signatures were complex and weakly correlating with disease activity. We provide a convenient, validated method to analyse IFN pathway in routine clinical practice using tetherin which could be a future research tool for the cell-specific IFN-I response. These studies support the idea that p40 efficacy in psoriasis is associated with IFN-I pathway modulation and relevant for exploring how p40 blockers may exert potential benefit in SLE.

REFERENCES:

1. Krueger, et al. N Engl J Med. 2007 Feb 8;356(6):580–92.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7267

FRI0681 FOUR COMORBIDITY INDEXES AMONG PATIENTS WITH RHEUMATOID ARTHRITIS

Y. J. Huang¹, C. F. Kuo¹, J. S. Chen¹, S. F. Luo¹. ¹Division of Rheumatology, Allergy and Immunology, Chang Gung Memorial Hospital and Chang Gung University, Taoyuan, Taiwan, Province of China

Background: Previous studies have reported an increased risk of multiple comorbidities in people with RA therefore it is necessary to systematically quantify the comorbidity burden of these patients.[1] The comorbidity index is a tool developed under this concept and has multiple clinical and research uses.

Objectives: We compared four comorbidity indexes in patients with rheumatoid arthritis in Taiwan (Charlson Comorbidity Index (CCI), Elixhauser Comorbidity Index (ECI), Mutimorbidity index (MMI), Rheumatic Disease Comorbidity Index (RDCI))

Methods: All patients with rheumatoid arthritis diagnosed during 1998–2008 in Taiwan were identified using the Taiwan National Health Insurance Database and followed up to 31 Dec 2013. Score accumulation between periods during diagnosis (4 months before and after initial diagnosis) and before/after the diagnostic period was compared. Poisson regression was used to calculate incidence rate ratio.

Results: Among 24767 patients with rheumatoid arthritis, median age at diagnosis is 51 years old and female is 79.2%. The mean score at diagnosis is 0.8 in CCI, 2.8 in ECI, 0.7 in MMI and 1.3 in RDCI. The annual percentage changes are 11.0%, 11.3%, 9.7% and 6.8%, respectively. The score of four comorbidity indexes increased with time after rheumatoid arthritis was diagnosed. The incidence rate ratios (IRR) for any increase in comorbidity score during versus before diagnostic period are higher than after versus before diagnostic period. (IRR 1.8 [CI 1.68 to 1.92] vs. 1.57 [CI 1.47 to 1.69] in CCI, IRR 2.77 [CI 2.67 to 2.87] vs. 2.44 [CI 2.36 to 2.53] in ECI, IRR 1.33 [CI 1.26 to 1.40] vs. 1.26 [CI 1.19 to 1.33] in MMI, IRR 1.47 [CI 1.41 to 1.54] vs. 1.31 [CI 1.26 to 1.37] in RDCI) Table 1 Incidence rates (IR) per 1000 patient months and incidence rate ratios (IRR) for occurrence of any disease in comorbidity index before, during, and after diagnosis* in patients with incident rheumatoid arthritis, 2001–2008, Taiwan.

Comorbidity indexes	Before diagnosis		During diagnosis		After diagnosis		IRR (95% CI)	
	No of events	Crude IR	No of events	Crude IR	No of events	Crude IR	During versus before diagnosis	After versus before diagnosis
CCI	1,311	0.007	2,353	0.013	2,062	0.012	1.80 (1.68 to 1.92)	1.57 (1.47 to 1.69)
ECI	4,099	0.023	11,333	0.064	10,011	0.057	2.77 (2.67 to 2.87)	2.44 (2.36 to 2.53)
MMI	2,249	0.013	2,985	0.017	2,828	0.016	1.33 (1.26 to 1.40)	1.26 (1.19 to 1.33)
RDCI	3,601	0.020	5,309	0.030	4,728	0.027	1.47 (1.41 to 1.54)	1.31 (1.26 to 1.37)

Figure 1 Mean scores of comorbidity indexes from diagnosis year by Rheumatoid arthritis

Conclusions: Our study showed that comorbidities continue to accumulate after the initial diagnosis. The comorbidity tends to occur during diagnostic period in patients with rheumatoid arthritis. Different comorbidity indexes are all good at assessing comorbidity burden. Clinicians should screen different comorbidities, determine primary prevention and control disease activity to improve the functional status, quality of life and mortality of rheumatoid arthritis.

REFERENCE:

1. Baillet A, et al. Points to consider for reporting, screening for and preventing selected comorbidities in chronic inflammatory rheumatic diseases in daily practice: a EULAR initiative. Ann Rheum Dis, 2016;75(6):965–73.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2940

FRIDAY, 15 JUNE 2018

Rehabilitation

FRI0682 EXERCISE MAY DECREASE SYNCOPES SECONDARY TO POSTURAL CHANGE IN FEMALES WITH RHEUMATOID ARTHRITIS: PILOT STUDY

D. C. Janse Van Rensburg¹, J. A. Ker², C. C. Grant¹, L. Fletcher³. ¹Section Sports Medicine, ²Dept of Internal Medicine, ³Dept of Statistics, University of Pretoria, Pretoria, South Africa

Background: The autonomic nervous system (ANS) regulates the heart rate via sympathetic and parasympathetic influences. Literature has shown that rheumatoid arthritis (RA) patients suffer from autonomic dysfunction. This may consequently lead to syncope with possible falls after posture change i.e. rising from supine to the standing position. Previous research has shown general improvement of the ANS after exercise, but not in specific relation with posture change.

Objectives: To determine the effect of exercise on posture change (supine to standing position) in females with RA as measured by short-term heart rate variability (ANS function).

Methods: Patients with confirmed RA were randomly selected to a control group (RAC) or an exercise group (RAE). The RAE group (n=19) trained two to three times per week under supervision. The RAC group (n=18) continued with their current sedentary lifestyle. The medium intensity exercise programme lasted for

12 weeks. No change in medication was allowed during this time. ANS function and balance were determined by quantification of the variability of the inter-beat interval detected with the Polar 810i heart rate monitor system. Frequency domain analyses were used for quantification, including LF (ms²) – indicating mainly sympathetic influence, HF (ms²) – indicating parasympathetic influence, and LF/HF – indicator of autonomic balance.

Results: The two groups matched regarding baseline demographic data (age, sex, disease activity, disease duration). Due to small sample sizes and variables not following a normal distribution, non-parametric Mann Whitney U analyses were performed on the heart rate variability parameters. Comparing posture change (i.e. standing value minus supine value) from pre- to post intervention, all frequency domain parameters changed as anticipated (i.e. vagal withdrawal and increased sympathetic influence) for the RAE group. For the RAC group the measurements deteriorated.

LF (ms²): RAE -1.03 to 22.03 (stronger sympathetic influence); RAC 43.45 to -31.21 (weaker sympathetic influence)

HF (ms²): RAE -24.03 to -33.34 (better vagal withdrawal); RAC -191.7 to -114.1 (less vagal withdrawal)

LF/HF: RAE 10.57 to 15.04; RAC 2.9 to 7.6

Conclusions: From these preliminary results it appear that exercise may indeed improve autonomic function in RA patients, in such a way that posture change will not be an added burden for falls in an already otherwise compromised population.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6261

FRI0683 INVESTIGATION OF THE RELATIONSHIP BETWEEN PLANTAR PRESSURE DISTRIBUTION AND LUMBAR MULTIFIDUS MUSCLE THICKNESS

C. Karartı¹, S. Bilgin², Y. Dadalı³, E. Dülger², B. Büyükturan¹, Ö. Büyükturan¹. ¹Ahi Evran University, Department of Physiotherapy and Rehabilitation, Kırşehir, ²Department of Physiotherapy and Rehabilitation, Hacettepe University Institute of Health Sciences, Ankara, ³Ahi Evran University, Department of Radiology, Kırşehir, Turkey

Background: Lumbar multifidus is a muscle which is responsible for lumbopelvic stability primarily. Foot-ankle posture and function disorders affecting the lumbopelvic region muscles and biomechanics, cause increased stress in the lumbopelvic region and may cause low back pain in many studies (1,2,3). However, it is not known whether the lumbar multifidus muscle is affected by this condition (4,5).

Objectives: Plantar pressure distribution can change due to foot-ankle postural disorders. Our aim is to examine whether the plantar pressure distribution affects the lumbar multifidus muscle thickness.

Methods: 40 healthy young adults aged 18 to 25 years were included in the study. Static and dynamic pedobarographic assessments were performed to determine the plantar pressure distribution, on a 3x1 meter sensed walking platform with the DIASU Digital Analysis System®. Peak pressures (N/cm²) of 9 zones of the foot (medial of heel, lateral of foot, 5 metatarsal, thumb and 2.3.4 and 5. digits) were recorded. Ultrasonographic imaging was used to assess lumbar multifidus muscle thickness.

Results: There was statistically significant correlation between lumbar multifidus muscle thickness and peak pressure medial of heel and 1. metatarsal bone in static pedobarographic analysis (p<0.05). As the peak pressure on the medial part of foot increased, m. lumbar multifidus muscle thickness was reduced. There was statistically significant correlation between lumbar multifidus muscle thickness and pressure medial of heel and 2.3.4. and 5. digits in dynamic pedobarographic analysis (p<0.05). As the peak pressure on the medial part of foot increased, m. lumbar multifidus muscle thickness was reduced.

Conclusions: Our results show that plantar pressure distribution affected lumbar multifidus muscle thickness. Based on these results, the lumbopelvic region and foot posture should be considered together in therapeutic interventions.

REFERENCES:

1. Bird AR, Payne CB. Foot function and low back pain. *Foot* 1999;9(4):175–80.
2. Botte RR. An interpretation of the pronation syndrome and foot types of patients with low back pain. *J Am Podiatry Assoc* 1981;71(5):243–53.
3. Barwick A, Smith J, Chuter V. The relationship between foot motion and lumbopelvic-hip function: a review of the literature. *Foot* (Edinb) 2012;22(3):224–31.
4. Brantingham JW, Adams KJ, Cooley JR, Globe D, Globe G. A single-blind pilot study to determine risk and association between navicular drop, calcaneal eversion and low back pain. *J Manipulative Physiol Ther* 2007;30(5):380–5.
5. Fourchet F, Kelly L, Horobeanu C, Loepelt H, Taiar R, Millet G. High-intensity running and plantar-flexor fatigability and plantar-pressure distribution in adolescent runners. *J Athl Train* 2015;50(2):117–25.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6363

FRI0684 EFFICIENCY OF COMPLEX REHABILITATION PROGRAM IN PATIENTS WITH RHEUMATOID ARTHRITIS RECEIVING ABATACEPT

E. Orlova¹, D. Karateev², A. Kochetkov¹. ¹Department of Rehabilitation Medicine, Federal Medical Biological Agency, ²1st Department of internal medicine, Moscow Regional Research and Clinical Institute ("MONIKI"), Moscow, Russian Federation

Background: Rehabilitation techniques (physical exercises, physiotherapy, occupational therapy, patient education) help to manage rheumatoid arthritis (RA) in addition to drug treatment [1–4].

Objectives: To evaluate the efficiency of 12-month complex rehabilitation program in patients with RA receiving abatacept.

Methods: 50 patients with RA (94% females, 72% with moderate disease activity by DAS28, age of 18 to 57 years, disease duration of 10 months to 12 years) were included and randomized into 2 groups. All patients received abatacept (intravenously 10 mg/kg (mean 750 mg) once every 4 weeks or subcutaneously 125 mg once a week) with methotrexate 20–25 mg per week. 28 study group patients underwent 12-months complex rehabilitation program: laser therapy of 12 to 16 min (infrared low intensity laser radiation, wavelength of 0,89 micrometers, pulse frequency of 1000 to 1500 Hz) for hand, knee, ankle, shoulder and elbow joints, 3 courses for 14 sessions with a mean interval of 3,2 months; 45-min dynamic exercises using gym apparatus Enraf-Nonius under the supervision of a trainer 3 times a week; 45-min exercises for hands 3 times a week; 45-min occupational therapy (joint protection strategies, use of assistive devices and adaptive equipment), 10 sessions; wrist, ankle and knee orthoses, orthopedic insoles; education program (4 daily 90-min studies). 22 patients received only drug therapy (control). Tender and swollen joint count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), joint pain on 100-mm VAS, DAS28, HAQ, RAPID3, hand grip strength, the average powers of knee extension and ankle flexion by EN-TreeM movement analysis were evaluated at baseline and at 12 months.

Results: After 12 month in the study group tender joint count decreased by 69,3% (p<0,01), swollen joint count – by 66,2% (p<0,01), ESR – by 63,7% (p<0,01), CRP – by 58,5% (p<0,01), pain on VAS – by 82,3% (p<0,01), DAS28 – by 39,6% (ΔDAS28=2,89±0,99, p<0,05), HAQ – by 72,2% (ΔHAQ=1,73±0,44, p<0,01), RAPID3 – by 78,3% (ΔRAPID3=8,45±0,85, p<0,01). The grip strength of a more affected hand enhanced by 57,1% (p<0,01), of a less affected – by 46,2% (p<0,05). The average extension power of a weaker knee increased by 72,1% (p<0,01), of a stronger – by 65,8% (p<0,01). The average flexion power of a more affected ankle joint elevated by 48,9% (p<0,05), of a less affected – by 69,4% (p<0,01). In the study group there were statistically significant differences from the control group in the most parameters (p<0,05), excluding CRP, ESR, DAS28 and the average flexion power of a more affected ankle joint (p>0,05). After 12-months in the study group there was significantly more frequently a good response to treatment according to the EULAR criteria (DAS28) (85,7% vs 63,6% in the control group, p<0,05).

Conclusions: 12-month complex rehabilitation program relieves pain, improves quality of life, functional status, motion activity and helps to control disease activity in patients with RA receiving abatacept.

REFERENCES:

- 1] Forestier R, et al. *Joint Bone Spine* 2009;76(6):691–8.
- 2] Hurkmans EJ, et al. *Acta Reumatol Port* 2011;36(2):146–58.
- 3] Vliet Vlieland TPM. *Best Pract Res Clin Rheumatol* 2009;23(1):103–16.
- 4] Vliet Vlieland TPM, van den Ende CH. *Curr Opin Rheumatol* 2011;23(3):259–64.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6278

FRI0685 HAND FUNCTIONS ARE AFFECTED DEPENDING ON THE CURVE PATTERN IN IDIOPATHIC SCOLIOSIS

G. Yagci¹, D. A. Ozcan¹, C. Ayhan¹, Y. Yakut². ¹Physiotherapy and Rehabilitation, Hacettepe University, Ankara, ²Physiotherapy and Rehabilitation, Hasan Kalyoncu University, Gaziantep, Turkey

Background: Idiopathic scoliosis (IS) is a three-dimensional deformity and causes postural distortions in head, trunk, scapular region and upper extremities. Hand functions have not been evaluated in relation to lateral curvature of the spine in IS previously. There is a need to evaluate possible changes in hand functions with scoliotic curve in idiopathic scoliosis.