Objectives: The aim of this study was to investigate hand functions in individuals with idiopathic scoliosis.

Methods: Ninety-four individuals with mild or moderate idiopathic scoliosis (Cobb angle range: 10° – 45°) were included. Curves were classified as single thoracic (n= 18), single thoracolumbar (n= 33), single lumbar (n= 22) and double curves (n= 21). Assessments included hand dexterity with Minnesota test, hand reaction time with Nelson test, hand-eye coordination with finger-to-nose test, throwing accuracy with Functional Throwing Performance Test, and upper extremity stability with the Closed Kinetic Chain Upper Extremity Stability Test. One-way ANOVA was used to compare continuous variables between different curve pattern groups and a Tukey's hsd means comparison was used to examine the nature of the significant difference found by ANOVA. In addition, Student's t test was used to compare the parameters between the convex and concave side of the curve for each group.

Results: Hand-eye coordination and throwing accuracy was significantly worse in thoracic curve pattern group than lumbar ones for both convex and concave sides of the curve. There was no difference between curve patterns in terms of hand dexterity, hand reaction time and upper extremity stability. When compared with concave side, hand dexterity was greater in the convex side for thoracic curves ($p<.05$). For double curves, convex side had better hand dexterity and reaction time than concave side ($p<.05$). But there was no difference between convex and concave side for thoracolumbar and lumbar curve patterns ($p>.05$).

Conclusions: This study showed that hand function is affected, depending on the curve pattern in idiopathic scoliosis. There is no knowledge about how hand function is affected in patients with scoliosis in the literature. Further research following these findings may lead to an understanding of the change in hand functions and its relation with scoliosis-related characteristics, such as age, curve magnitude and trunk deformity.

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Acknowledgements: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2156

FRI0686

THE EFFECT OF FOOT ORTHOSES ON BALANCE IN RHEUMATOID ARTHRITIS PATIENTS: A RANDOMIZED CLINICAL TRIAL

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Background: Rheumatoid patients(RA)have increased rate of falls and an impaired balance. Foot orthoses are commonly used in RA. Despite the evidence of pain relief with foot orthoses, it is not clear if their use can improve or even impair balance in RA.

Objectives: The aim of this study was to evaluate the effect of foot orthoses on balance of RA patients.

Methods: 94 RA patients in the outpatient clinic of the Rheumatology Division of Unicamp were randomly assigned to intervention group/IG(n=48)with foot orthoses or control group/CG(n=46)without orthoses. At initial visit, subjects were assessed regarding:sociodemographic and clinical data(number of falls in last year, fear of falling, disease duration, rheumatoid factor, Imedication, visual impairment, vertigo, physical activity, body mass index, comorbidity index, foot tactile sensitivity, number of lower limbs swollen and tender joints count, disease activity-CDAI and disability-HAQ). Subjects answered The Foot Function Index-FFI and were submitted to Berg Balance Scale-BBS, the Timed Up and Go-TUG and the 5-Time Sit Down-to-Stand up-SST5 tests.IG subjects received custom made insoles according to each foot needs. After four weeks, subjects were reassessed for FFI, BBS and TUG. To compare baseline values of groups, the chi-squared test, Fisher's exact test and Mann-Whitney test were applied.ANOVA for repeated measures was used to compare differences between groups and times for BBSTUG and FFI. Effect size was analyzed using the Cohen's d test. All data were analyzed with a 5%level of significance.

Results: 81 subjects completed the research protocol,40 in the IG and 41 in the CG. Groups were similar at baseline for most variables with exception of

comorbidity index(worst index in IG) and race($p<0.05$). After four weeks, FFI-total, FFI-Pain, FFI-activity limitation disclosed a significant improvement only in IG. Significant differences between times were noted for TUG and BBS only in IG. Interaction group versus time was significant for FFI and BBS. Subjects from IG reported a mean wearing time of 7.32hs/day. Adverse effects were noted in ten subjects(foot pain, hot foot).

Comparison between IG and CG at baseline (t1) and after 4 weeks (t2)

Variables	IG vs CG, p [*]	t1 vs t2, p [*]	Interaction groups vs time, p-value	Effect Size ^{**}
FFI-pain	0.0001	<0.0001	0.001 ^a	-0.60
FFI- disability	0.050	0.001	0.036 ^b	-0.28
FFI-activity limitation	0.007	0.004	0.011 ^a	-0.61
FFI-Total	0.002	<0.0001	0.001 ^a	-0.57
TUG	0.454	<0.0001	0.079 ^c	No interaction
BBS	0.358	0.0001	0.011 ^b	0.35
NCS	0.422	0.102	0.022	0.44

*ANOVA for repeated measures (variables converted into ranks) ** d de Cohen

Conclusions: Foot orthoses were well accepted and worn during long periods with FFI and balance tests (BBS, TUG)improvement. Prospective placebo controlled studies are recommended to assure the possibility to use insoles as adjunct interventions to improve balance in RA.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3770

FRI0687

EFFECT OF PERINEURAL INJECTION THERAPY IN MODERATE AND SEVERE KNEE OSTEOARTHRITIS; A COMPARATIVE STUDY

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Background: Osteoarthritis (OA) is the most common rheumatologic disease. Knee OA is the most common form of symptomatic OA. It is the fourth most important global cause of disability in women and the eighth most important cause in men¹.

Studies found that subcutaneous prolotherapy is an effective treatment for several painful conditions. Some author hypothesizes that subcutaneous prolotherapy injections induce apoptosis of proliferating peptidergic nociceptors and neovessels by reducing vascular endothelial growth factor levels and restoring effective repair processes, with reduction of pain².

Objectives: To assess the effectiveness of perineural injection therapy as a new modality in management of pain, physical function, ambulation activity, disability and psychological status in moderate and severe knee osteoarthritis.

Methods: In this study; we selected 100 patients with moderate and severe knee osteoarthritis diagnosed clinically and radiologically by plain x-ray. Patients were classified into four equal groups (25 patients in each group). Group I received 6 weekly subcutaneous injections of 0.5–1 ml of buffered dextrose 5% in each chronic constriction injury points and tender points around knee. Group II received therapeutic continuous US three times weekly for 6 weeks using 1-MHz US head, set to an intensity of 1 W/cm2 for 10 min. Group III received combined perineural and US therapy. Group IV received sham US. All patients received 15 min of quadriceps isometric exercise of both knees.

Assessments were performed at baseline, at the end of the treatment and after three and sixth months. using the following measurements: Primary outcome was pain on movement assessed by visual analog scale (VAS). Secondary outcomes consisted of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scores, 50 meters walking time, Lequesne index, Hospital Anxiety and Depression Scale (HADS).

Results: No baseline differences existed between all groups. The improvement in group IV was non-significant ($p>0.05$), while there was significant improvement in all other groups ($p<0.05$) in all primary and secondary outcomes after treatment, 3 and 6 months later. In comparing groups I, II, III the best improvement was in