Categorical variables were presented as numbers (%) and continuous variables as mean (SD) and associates explored using univariate and multivariate analysis. **Results:** A total of 302 Finnish and 363 Norwegian PsA patients were examined. Pain catastrophizing was reported significantly less commonly among the Finnish as compared to the Norwegian PsA clinic patients, both expressed as mean (SD) values (1.48 (1.42) vs 2.05 (1.42), $p < 0.001$) and proportions of patients having a score ≥ 4 (7.6% ($n=23$) vs 12.5% ($n=45$), $p=0.043$, respectively). As shown in the table the Finnish patients had significantly more years of education, shorter disease duration and less pain and fatigue than the Norwegian patients. For the other features, no significant differences between the two cohorts were found.

	Finland (n=302)	Norway (n=363)	P
Age, years	54.0 (13.3)	54.7 (12.5)	0.49
Females	153 (50.7%)	181 (49.9%)	0.84
BMI, Kg/m ²	28.8 (5.6)	28.1 (5.1)	0.06
Current smoking	44 (14.6%)	51 (14.1%)	0.86
Education, years	13.6 (3.5)	12.7 (3.8)	0.001
Disease duration, years	4.7 (4.3)	9.9 (8.9)	<0.001
CRP, mg/L	4.3 (6.8)	4.0 (8.8)	0.69
MDglobal assessment, VAS 0-100 mm	6.84 (1.29)	5.71 (8.50)	0.19
28 swollen joint count	0.48 (1.35)	0.31 (1.16)	0.14
28 tender joint count	1.01 (2.83)	1.37 (2.80)	0.14
DAPSA	9.66 (8.95)	11.33 (9.60)	0.06
Pain, VAS 0-100 mm	30.73 (25.92)	35.55 (25.76)	0.023
Fatigue, VAS 0-100 mm	29.96 (29.24)	42.56 (31.94)	<0.001
MHAQ, 0-3	0.39 (0.44)	0.43 (0.41)	0.24
Body surface area for psoriasis	2.45 (8.15)	2.66 (6.15)	0.17
Current b-tsDMARDs	121 (40.1%)	139 (38.3%)	0.64

In univariate analyses female gender, higher BMI, less years of education, Dr. global, tender joint count, DAPSA, pain, fatigue, MHAQ and psoriasis body surface area were found to be associated with more pain catastrophizing.

In multivariate analysis (mandatory adjusting for age, gender, BMI, years of education and disease duration) fewer years of education, higher scores for pain, fatigue and MHAQ and being patient at the Norwegian center were independently associated with more pain catastrophizing.

Conclusion: Our data indicate that cultural differences across countries may have a significant impact on outcomes that reflecting patients' perceptions of disease. This may have an implication when merging heterogeneous databases across countries.

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THURSDAY, 04 JUNE 2020

Back pain, mechanical musculoskeletal problems, local soft tissue disorders

THU0483

ASSOCIATION OF CENTRAL SENSITIZATION AND ATTENTION DEFICIT IN MEDICAL STUDENTS WITH CHRONIC BACK PAIN

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Background: Back pain is one of the most common health complaints among university students. A subset of people suffering from chronic back pain exhibit features of increased pain sensitivity and altered pain processing, suggesting central sensitization (CS) to pain¹. The mechanisms behind these processes are, to date, not fully understood². Evidence shows that in chronic pain, cognitive factors could contribute to the occurrence of central pain sensitization^{3,4}.

Objectives: To assess the association between CS and features of adult Attention Deficit Hyperactivity Disorder (ADHD) in medical students suffering from chronic back pain.

Methods: Data was collected from medical students during the academic year 2018-2019 at Suez Canal University using an online survey. The survey included a section on self-reported musculoskeletal pain including back pain lasting more

than 3 months in the neck, upper back and lower back, part (A) of the central sensitization inventory (CSI) and the Adult Attention Deficit Hyperactivity Disorder Self-Report Scale (ASRS-v 1.1). Associations between CSI and ASRS-v 1.1 in students with back pain was assessed using Spearman's correlation. Linear regression was used to estimate cross-sectional associations adjusted for age and gender.

Results: Two hundred and thirty students completed the survey, 93 (40.4%) had back pain for more than 3 months. Students with back pain had significantly higher CS and attention deficit according to CSI ($P < 0.01$), and the ASRS-v 1.1 scores ($P = 0.09$). Correlation results showed a strong positive association between CS and ADHD in students with back pain (correlation coefficient = 0.41, $P < 0.001$). This association remained significant after adjusting for age and gender ($P < 0.001$).

Conclusion: Results of this study suggest that in students suffering from chronic back pain, features of attention deficit are associated with elevated CS. The direction of the association requires further study and may provide novel insights into the interaction between CS and cognitive factors.

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Pain in rheumatic diseases, including fibromyalgia

THU0484

FIBROMYALGIA AND MULTIPLE SWITCHING OF BIOLOGICS IN SPONDYLOARTHRITIS

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Background: Fibromyalgia (FM) is a condition characterized by chronic widespread pain, tender points, fatigue and disturbed sleep rhythm. Some of these symptoms such as fatigue, tender points and diffuse pain seen in patients with spondylarthritis (SpA). Moreover, FM and SpA can coexist creating a diagnostic challenge, particularly in early disease course and influence clinical disease activity assessment.

Objectives: With this cross-sectional study, we aim to estimate the prevalence of FM in SpA and to elaborate its effect on biological treatments.

Methods: FM was identified according to the ACR 2010 diagnostic criteria. SpA patients identified according to rheumatologist using various SpA subsets criteria. A review of the electronic medical files for SpA patients attending the rheumatology outpatient clinic and infusion unit at a major tertiary hospital during the period from June to December 2018 were included. Patients' demographics, socioeconomics, disease characteristics, activity, HLA status and abnormal MRI sacroiliac were explored. Regarding SpA medications, number, frequency and dose of DMARDs and biological agents were obtained.

Continuous variables were reported by their mean and standard deviation (SD) and qualitative variables by frequency and percentage. Statistical significance was set at $p < 0.05$. Statistical analysis was performed using SPSS version 23.

Results: Of the 305 enrolled SpA patients, 43 (14.1%) had FM. Females represents 57.4% of the patients, mean age was 44.07 ± 11.85 years. Arab ethnicity represents most of our cohort 84.9%, the majority were Emirati 64.6%. Smokers were 8.2% and ex-smokers were 3.3%. Axial SpA represents 38.4% while peripheral SpA 61.6% of our cohort according to ASAS classification.

HLA B27 tested in a sample of 180 patients; it was positive in only 17.8%. CRP found to be elevated in 20.3% of the patients at baseline. Abnormal MRI SIJ bone marrow edema changes were found in 10.8%, while other SIJ changes was seen in additional 20.6%. The prevalence of FM showed no statistically significant difference between axial and peripheral SpA. Patients SpA and FM have longer disease duration than SpA alone, $P = 0.034$. Table.1 show demographics, socioeconomics and clinical data of our cohort.

Regarding medication, the use of biologics among SpA patients with FM is more frequent than SpA patients without FM (74.4% vs 51.5 % respectively), $P = 0.005$.

Interestingly, the likelihood ratio testing showed that SpA patient with Fibromyalgia switch more frequently to another biologics than SpA without fibromyalgia, $P=0.015$.

Cramer's V test showed that there is a high statistically significant ($P=0.002$) and very strong association (>0.25) between presence of Fibromyalgia and multiple switching of biologics in SpA.

There was no difference in the exposure to prednisolone nor conventional DMARDs between SpA patients with or without FM, $P=0.64$ & 1 respectively.

Gender, Female, n (%)	175 (57.4)
Age, mean $\pm$ SD (min- max), years	44.07 $\pm$ 11.85 (18- 78)
Type of A, n (%)	117 (38.4)
Axial	188 (61.6)
Peripheral	
Fibromyalgia, n (%)	43 (14.1)
FM in axial SpA	18 (41.9)
FM in Peripheral SpA	25 (58.1)
SpA Disease duration (months)	107.7 $\pm$ 50.4
FM+, mean $\pm$ SD	86 $\pm$ 57.9
FM-, mean $\pm$ SD	
Elevated CRP, n (%)	62 (20.3)
HLA B27 in 180 patients, n (%)	32 (17.8)
Positive	148 (82.2)
Negative	
Abnormal MRI SIJ, n (%)	92 (30.2)
Bone marrow edema	33 (10.8)
Subchondral sclerosis	21 (6.9)
Fatty transformation of bone marrow	5 (1.6)
Erosion	2 (0.7)
Number of conventional DMARDs ever tired, n (%)	81 (26.6)
None	166 (54.4)
One	46 (15.1)
Two	12 (3.9)
Three	
Frequency of DMARDs usage, n, (%)	224 (73.4)
Conventional DMARDs	56 (18.4)
Prednisolone	164 (53.8)
Biologic DNARDs

Conclusion: FM coexistence with SpA might impact clinical evaluation of disease activity and possibly negatively affect self-measurement of treatment

response. In our study, SPA patients exposed to more biologics if they have coexisting FM; Moreover, they are more frequent switchers among biologics including TNFi and IL17i.

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Back pain, mechanical musculoskeletal problems, local soft tissue disorders

THU0485

THE EFFECT OF PERINEURAL INJECTION THERAPY IN PERIARTHRITIS SHOULDER

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Background: Primary adhesive capsulitis of the shoulder is a common pathology of the glenohumeral joint characterized by shoulder pain and progressive restriction of the range of motion, its treatment options either medication, local injection, physiotherapy, hydrodistension, manipulation under anesthesia, arthroscopic and open capsular release¹.

Subcutaneous prolotherapy injections can reduce vascular endothelial growth factor levels and restore effective repair processes so induce apoptosis of proliferating peptidergic nociceptors and neovessels and inhibit TRPV1 receptors resulting to reduction of pain^{2,3}.

Objectives: To assess the effectiveness of perineural injection therapy in management of pain and physical function in Primary adhesive capsulitis of the shoulder.

Methods: One hundred patients with primary adhesive capsulitis in the freezing stage were selected in this study according to the classification of Hannafin and Chiaia and had restriction of passive motion of greater than 30° in 2 or more planes of movement. Patients with previous corticosteroid injection or previous surgery in the affected shoulder, secondary adhesive capsulitis including inflammatory or infectious arthritis, previous fracture, rotator cuff lesions were excluded from this study.

Patients were randomly divided into two equal groups; 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 at shoulder and along course of suprascapular, supraclavicular, axillary, musculocutaneous and radial nerves. Group II received oral NSAIDs and muscle relaxants for 6 weeks. All patients in both groups received the same stretching and exercise therapy during the period of treatment. All procedures were done after informed consent. Assessments were performed at baseline, at the end of the treatment and after three and six months using visual analog scale (VAS) for pain, range of movement measurements by goniometer, Shoulder Pain and Disability Index (SPADI) & the Western Ontario Rotator Cuff (WORC) Index.

Results: Patients in Group I had more rapid relief of pain and better functional improvement compared with group II ($p<0.05$). There was significant improvement in both groups ($p<0.05$) after 3 and 6 months with significant difference between the 2 groups indicated that better results in perineural group. Results were summarized in table 1.

Table 1. Pre- and post-treatment clinical measurement of the patient groups

	Baseline GI	Baseline GII	After end of treatment GI	After end of treatment GII	After 3ms GI	After 3ms GII	After 6ms GI	After 6ms GII
VAS	8.7 $\pm$ 0.9	8.4 $\pm$ 1.0	5.0 $\pm$ 1.5*	5.7 $\pm$ 1.1*	4.4 $\pm$ 1.5*	5.1 $\pm$ 1.6*	3.8 $\pm$ 1.2*	4.9 $\pm$ 1.3*
SPADI	80.4 $\pm$ 9.8	78.9 $\pm$ 10.7	41.5 $\pm$ 10.2*	50.4 $\pm$ 8.8*	35.8 $\pm$ 7.5*	46.6 $\pm$ 7.9*	32.6 $\pm$ 10.2*	44.5 $\pm$ 8.7*
WORC	28.5 $\pm$ 10.6	26.5 $\pm$ 11.5	60.4 $\pm$ 9.8*	55.9 $\pm$ 10.5*	67.9 $\pm$ 9.7*	57.3 $\pm$ 10.3*	71.5 $\pm$ 12.3*	60.1 $\pm$ 9.6*

*significant improvement after treatment

* significant difference between the two studied groups

Conclusion: Perineural injection therapy is an effective modality in management of pain and physical function of Primary adhesive capsulitis of the shoulder.

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