other symptoms including fatigue, sleep quality, cognitive symptoms, somatic symptoms and decreased functional status. The impaired somatosensory temporal discrimination ability indicates an alteration in higher cognitive sensory processing in fibromyalgia.

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THU0516

EFFICACY AND SAFETY OF VITAMIN D3 IN PATIENTS WITH FIBROMYALGIA. RANDOMISED, DOUBLE BLIND, PLACEBO-CONTROLLED TRIAL

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Background: fibromyalgia (FM) is a disease characterised by widespread pain, sometimes fatigue, memory problems and sleep disturbances. It has been suggested that low blood levels of vitamin D correlate with increased pain scores in patients with FM. A recent meta-analysis indicated that vitamin D may decrease pain scores in patients with FM, but with a low quality trials.

Objectives: to assess the efficacy and safety of vitamin D3 in Fibromyalgia patients.

Methods: a 12 week randomised, double blind, placebo-controlled trial in eighty FM patients according to the criteria of the American College of Rheumatology (ACR) 2010 who were randomised into two groups, the treatment group (n=40) received 50,000 IU of oral vitamin D3 weekly, the second group (n=40) received placebo for 12 weeks. The primary outcome was to assess the change in the Spanish version of Fibromyalgia Impact Questionnaire (S-FIQ) and Visual Analogue Scale (VAS 0–10) from baseline to week 12. Baseline serum calcium levels were measured in all subjects. Vitamin D levels were measured by chemiluminescence considering normal ranges between 30 and 100 ng/ml, insufficiency between 10 and 30 ng/ml and deficiency less than 10 ng/ml, baseline and after 12 weeks.

Results: of the total, 61/80 (76%) had vitamin D insufficiency, 8/80 (10%) deficiency and 11/80 (14%) normal levels, the mean overall level of vitamin D was 21.2±9.0. There was no statistically significant reduction in S-FIQ scores in patients in the treatment group compared with placebo (47.0±23.3 vs 43.9±25.0, p=0.56) after 12 weeks; there was also no statistically significant decrease in VAS scores (6±5 vs 4±4.5, p=0.57). There was no improvement in the perception of pain when normalising vitamin D levels. No serious adverse events were reported in both groups.

Table 1 Baseline characteristics:

	Treatment (n=40)	Placebo (n=40)	p
Age, mean (SD), years	50.3 (11.9)	51.4 (9.5)	0.6
BMI median (IQR)	26.8 (7.3)	27.2 (5.29)	0.7
Primary FM n (%)	18 (48.6)	19 (51.4)	0.8
Secondary FM n (%)	22 (51.2)	21 (48.8)	0.8
Tender Points median (IQR)	12.5 (4.4)	14 (7)	0.2
Basal Vitamin D median (IQR)	20.1 (14.5)	12.6 (13.4)	0.2
Vitamin D (%)			0.24
Normal	7 (17.5)	4 (10)	
Insufficiency	31 (77.5)	30 (75)	
Deficiency	2 (5)	6 (15)	
Baseline FIQ mean (SD)	64.51 (15.25)	61.88 (18.21)	0.48
Baseline VAS median (IQR)	6 (3)	6 (3.5)	0.36
Primary outcomes			
Final FIQ mean (SD)	47.09 (23.37)	43.9 (25.02)	0.56
Final VAS median (IQR)	6 (5)	4 (4.5)	0.57
Delta FIQ median (IQR)	–16.39 (35.28)	–18.94 (105.13)	0.59
Control Vitamin D median (IQR)	50.8 (24.9)	20.7 (5.84)	0.0001

Conclusions: at 12 weeks of treatment with vitamin D3 50,000 IU versus placebo in patients with fibromyalgia had no statistically significant differences in the FIQ and VAS. It may be possible to find greater benefit from vitamin D if this period is extended.

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THU0517

IDENTIFICATION OF CANDIDATE GENES ASSOCIATED WITH FIBROMYALGIA SUSCEPTIBILITY IN SOUTHERN SPANISH WOMEN: THE AL-ÁNDALUS PROJECT

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Background: Family aggregation suggests genetic susceptibility to fibromyalgia.¹ Candidate-gene studies on fibromyalgia susceptibility often include a small number of SNPs,^{2,3} which is a limitation.⁴ Additionally, there is a paucity of evidence in Europe.

Objectives: To compare genotype frequencies of candidate single nucleotide polymorphisms (SNPs) in a well-characterised sample of Spanish women with fibromyalgia and healthy non-fibromyalgia women.

Methods: Three hundred and fourteen women with a diagnosis of fibromyalgia (cases) and 112 non-fibromyalgia healthy (controls) women participated in the present candidate-gene study. Buccal swabs were collected for DNA extraction. Using TaqMan OpenArray, we analysed 63 single nucleotide polymorphisms (SNPs) of 33 genes related to fibromyalgia susceptibility, symptoms, or potential mechanisms.

Results: The rs841 and rs1799971 GG genotype was more frequently observed in fibromyalgia than in controls (p=0.04 and p=0.02, respectively). The rs2097903 AT/TT genotypes were also more often present in the fibromyalgia participants than in their control peers (p=0.04).

Conclusions: We identified, for the first time, associations of the rs841 (guanosine triphosphate cyclohydrolase 1 gene) and rs2097903 (catechol-O-methyltransferase gene) SNPs with higher risk of fibromyalgia susceptibility. We also confirmed that the rs1799971 SNP (opioid receptor μ1 gene) might confer genetic risk of fibromyalgia. Further studies are needed to confirm or refute the present findings.

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THU0518

THE DIAGNOSTIC VALUE OF SELECTED MICRORNAS IN PATIENTS WITH FIBROMYALGIA ASSOCIATED WITH RHEUMATOID ARTHRITIS: A PILOT STUDY

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Background: Fibromyalgia (FM) is present in a significant proportion of patients with rheumatoid arthritis (RA)¹. Diagnosis and management of patients with rheumatoid arthritis and associated fibromyalgia (FRA) is challenging¹. MicroRNAs (miRNA) are small noncoding RNAs that target mRNA and repress protein production. Recent studies have identified specific patterns of microRNA (miRNA) expression in FM patients³.

Objectives: Our objectives were to determine if there are differences in expression levels of miR let-7a, miR-21–5 p, miR –143 and miR-103a-3p in the blood of

FRA, RA and FM patients and to determine if any of the aforementioned miR could differentiate between FRA and RA.

Methods: We performed a case control study on 10 FRA patients compared to 10 FM, 10 RA patients with pain of at least 50 mm on VAS, and 10 healthy controls. All patients underwent clinical and laboratory examinations. Cell lysate from peripheral blood was used for the extraction of total RNA with TriReagent; miRNA reverse transcription was performed with the miScriptII Reverse Transcription kit (Qiagen) according to manufacturer's instructions. cDNAs obtained were further amplified by quantitative PCR (qPCR) with the miScript SYBR Green PCR kit. miRNA relative expression was quantified using the $2^{-\Delta\Delta Ct}$ method. Relative miRNA levels are expressed as fold change (Fc). Data are expressed as median (interquartile range).

Results: There were no significant differences in terms of baseline characteristics between the groups. Clinical characteristics of included patients are listed in table 1. Patients with RA had higher SJC values and higher ESR and CRP levels as compared to FRA and FM patients. However, the mean DAS28 scores of RA and FRA patients were not significantly different, due to higher TJC values and higher pain levels in the FRA group.

Expression levels for miR let-7a, miR-21-5 p3 and miR-103a-3p were similar between the groups. miR-143 was downregulated in FRA, with a median Fc of 0.6 (IQR 0.3) and FM patients with a median Fc=0.5 (IQR 1.6) and upregulated in RA patients with a median Fc of 1.4 (IQR 0.5). miR-143 expression levels correlated negatively with TJC ($r=-0.7$; $p<0.05$) and with the Fibromyalgia Impact Questionnaire score (-0.8 , $p<0.01$) in patients with FRA. ROC analysis showed that the AUC to identify FRA from RA patients was 0.89 (95%CI 0.7–1), $p=0.03$ (Fig 1). A cut-off value for miR-143 Fc of >1.04 had a sensitivity of 90% and specificity of 70% in differentiating FRA from RA.

Abstract THU0518 – Table 1. Demographic and clinical data of patients

Variable	FRA n=10	RA n=10	FM n=10	Controls n=10	p
Age (years)	54 ⁽¹⁴⁾	55.5 (11)	55 ⁽¹⁴⁾	46.5 (9)	0.1
TJC	17 ⁽¹²⁾	9 (7)	7 (11)	0	0.006
SJC	4 (10)	7 (3.9)	0	0	<0.001
Pain on VAS(mm)	75 ⁽³²⁾	70 ⁽³⁰⁾	70 ⁽²⁵⁾	0	0.01
ESR(mm/h)	25 ⁽³³⁾	54 ⁽⁴⁶⁾	9 (7)	5 (9)	0.002
CRP(g/dl)	6 (21.4)	24.6 (41.1)	1.3 (1.2)	1.3 (4.3)	0.001
DAS28ESR	5.9 (1.9)	5.5 (2)	3.8 (1.4)	-	0.001
DAS28CRP	5.5 (2)	5.5 (2)	3.8 (0.8)	-	<0.001
HAQ	1.8 (0.9)	1.8 (0.7)	1.1 (1.4)	0	0.001
Tender point count	16 ⁽⁶⁾	6 (7)	15 ⁽⁵⁾	0 (1)	<0.001

Conclusions: miR-143 is downregulated in patients with FRA and may discriminate between patients with FRA and RA. Further studies are needed in order to validate these results.

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THURSDAY, 14 JUNE 2018

Epidemiology, risk factors for disease or disease progression

THU0519 PREDICTION OF PERSISTENT KNEE PAIN BY PRESSURE PAIN DETECTION THRESHOLDS: RESULTS FROM THE KNEE PAIN IN THE COMMUNITY COHORT (KPIC)

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Background: Knee pain results from a combination of nociceptive input from the joint, and processing of that input by the central nervous system. Pressure pain detection thresholds (PPTs) are lower and pain is more severe in people with greater central sensitisation.

Objectives: We hypothesised that lower PPTs predicted worse pain prognosis in people with knee pain.

Methods: KPIC participants were people aged >40 years recruited from Nottingham, UK. Participants were mailed questionnaires at baseline and 1 year. This study reports the sample of responders who attended baseline and 1 year clinical assessment, had self-reported knee pain (within the last 4 weeks) and underwent PPT. PPT was measured at the knee, anterior tibia and the sternum. Radiographic knee OA was classified using an atlas. Questionnaires measured ICOAP (constant and intermittent knee pain), painDETECT (neuropathic-like) and average knee pain severity over 4 weeks (0–10).

The presence of pain at baseline and 1 year (persistent pain), or pain severity were predicted from baseline anterior tibia PPT. Additional analyses adjusted for baseline pain score, age, sex, BMI, or for radiographic knee OA. Pain persistence (Yes/No) was analysed using t tests, odds ratios (OR) and logistic regression. Pain severity was analysed using linear regression.

Results: The sample for this study contained $n=419$ people at baseline, of whom $n=182$ people reported knee pain persistent over both time points. The mean (SD) values for those with persistent knee pain at 1 year, were age 61⁹ years, BMI 30.1 (5.8) kg m⁻², 59% female, and 36% fulfilled radiographic OA criteria at the index knee.

In univariate analysis, persistent knee pain was associated with a lower PPT at baseline (461 vs 424 kPa; OR (95% CI) 0.58 (0.34–0.97) $p=0.020$). Adjustments for age, sex and BMI removed the significance from the association (adjusted OR (95% CI) 0.64 (0.36–1.13) $p=0.120$).

In those with persistent pain, worse 1 year ICOAP-constant, ICOAP-intermittent, painDETECT and knee pain severity were correlated with lower baseline anterior tibia PPT ($r=-0.28$ to -0.24 ; $p<0.004$). After adjustment for baseline pain, 1 year ICOAP-constant pain scale was significantly predicted by baseline PPT (B (95% CI), -1.05 (-1.91 to -0.20) $p=0.016$). Linear regression with adjustments for age, sex and BMI also indicated that baseline PPT predicted worse ICOAP-constant pain (B (95% CI) -0.99 (-1.94 to -0.04) $p=0.041$).

The presence of radiographic OA at baseline predicted pain at 1 year, but was not significantly associated with PPT at baseline. Adjustment for baseline radiographic OA did not remove the association between baseline PPT and ICOAP-constant at 1 year (anterior tibia PPT -1.04 (-1.89 to -0.18) $p=0.018$). PPT at joint lines or sternum displayed similar patterns of association with 1 year pain as did PPT at the anterior tibia.

Conclusions: Pressure pain detection thresholds suggestive of central sensitisation at baseline were associated with knee pain prognosis at 1 year, in particular with constant knee pain. The presence of radiographic OA also predicts 1 year pain prognosis, but does not explain its prediction by PPT.

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