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Fibromyalgia

THU0520

ASSESSMENT OF CARDIOVASCULAR RISK IN PATIENTS WITH FIBROMYALGIA BY CAROTID-FEMORAL PULSE WAVE VELOCITY – RESULTS OF A PROSPECTIVE STUDY

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Background: Autonomic dysfunction, a basic element of fibromyalgia (FM), has been in some cases related to increased risk of cardiovascular (CV) disease. CV risk associates with aortic stiffness, which can be reliably assessed by carotid-femoral pulse wave velocity (cfPWV).

Objectives: Aims of this study were to test the hypothesis of increased cfPWV in a group of patients with FM and to examine its association with FM associated parameters and selected traditional CV risk factors.

Methods: We performed measurements of cfPWV in 99 FM patients and 102 healthy controls. The difference between cfPWV values in the two groups after controlling for possible confounding factors was evaluated through multiple regression analysis. The associations of cfPWV with FM related parameters such as pain severity on the EuroQol visual analogue scale (EQ-VAS) and FM tender points were also analysed. Finally, we explored the relationship of cfPWV with various laboratory parameters (patients' group) and traditional CV risk factors (both groups).

Results: Adjusted statistical analyses for confounding factors showed significantly higher cfPWV values in FM patients in comparison to controls ($p_{adj}=0.044$). cfPWV associated significantly with age in both the patients and the control group ($\rho=0.614$, $p<0.001$ and $\rho=0.678$, $p<0.001$ accordingly). Moreover, cfPWV correlated in the control group with systolic, diastolic and mean arterial pressure ($p<0.001$, $p=0.013$ and $p<0.001$ accordingly) as well as with Body Mass Index ($p=0.003$).

Abstract THU0520 – Table 1. Descriptive characteristics by group.

	Controls (n=102)	Patients (n=99)	Significance (p)
cfPWV (m/s)	7.50 (6.78–8.40)	8.00 (7.20–9.30)	0.004*
Age (years)	50 (38.25–56.25)	53 (46.00–59.00)	0.025*
Gender (female)	92 (90.2%)	93 (93.9%)	0.436
Nicotin (smokers)	21 (20.6%)	28 (28.6%)	0.250
Antihypertensive drugs	16 (15.2%)	35 (36.1%)	0.001*
BMI	23.74 (21.08–27.05)	26.50 (23.80–30.81)	<0.001*
MAP (mmHg)	92.33 ^{85–100}	93 (83.33–96.67)	0.586
Heart rate (/min)	66.00 (59.00–73.0)	72.00 (66.00–90.0)	0.001*
Cholesteroline (mg/dl)	-	222.8±44.4	-
HDL (mg/dl)	-	65 (54–77.5)	-
LDL (mg/dl)	-	140 (108.50–173.50)	-
Triglycerides (mg/dl)	-	105 (74.50–156.00)	-
Tender points (18/18 positive)	-	52 (52.5%)	-
CRP (mg/l)	-	1.67 (1.00–4.62)	-
ESR (mm/h)	-	13.50 ^{8–18}	-
RF (positive)	-	11 (11.1%)	-
ANA (>1:80)	-	5 (5.1%)	-
EQ-VAS (%)	-	45 (35–60)	-

*p<0.05

Conclusions: Our data reveal that patients with FM have higher aortic stiffness than healthy controls, even after adjusting for confounding factors of cfPWV. Therefore, FM may be associated with an increased CV risk. To our knowledge, this is the largest study to examine the gold standard assessment method of aortic stiffness in patients with FM and the first one to find increased cfPWV-values in comparison to healthy subjects.

Disclosure of Interest: None declared

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THU0521

A SIMPLE INDEX BASED ON SCORES ON A MULTIDIMENSIONAL HEALTH ASSESSMENT QUESTIONNAIRE (MDHAQ) PROVIDES INFORMATION QUITE SIMILAR TO ACR CRITERIA FOR FIBROMYALGIA IN ROUTINE CARE

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Background: Fibromyalgia (FM) is common in the general population, easily identified in many patients, but subtle in some, particularly when patients meet criteria for rheumatic diseases such as rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), osteoarthritis (OA), and others. American College of Rheumatology (ACR) FM criteria were reported in 1990 (Arth Rheum 33:160, 1990) and 2010 (Arth Care Res 62:600, 2010) as "preliminary diagnostic criteria," modified for patient self-report in 2011 (Ann Med 43:495, 2011), and in 2016 as the "2016 revisions to the 2010/2011 fibromyalgia diagnostic criteria" (Sem Arth Rheum 46:319, 2016). These FM criteria are not used in most routine care settings. A multidimensional health assessment questionnaire (MDHAQ) is more widely used in the USA (Arth Care Res 64:640, 2012), and is informative in RA, OA, SLE, and most rheumatic diseases (J Clin Rheumatol 19:169, 2013). MDHAQ may provide clues to primary and secondary FM in routine care, EULAR 2016, 2017

Objectives: To compare 2 indices of MDHAQ scales to the 2011 and 2016 FM criteria to identify patients with possible primary or secondary FM in routine care.

Methods: All patients with all diagnoses seen at an academic rheumatology clinic complete an MDHAQ at each visit. The modified FM criteria questionnaire was added from April-July 2017. Two MDHAQ scales were studied: MDHAQ-FM3 includes a 0–10 pain visual analogue scale (VAS), 0–48 self-report rheumatoid arthritis disease activity index (RADAI) painful joint count, and 0–60 symptom checklist; one point each is scored for pain $\geq 6/10$, RADAI $\geq 16/48$, symptom checklist $\geq 16/60$ – total=0–3. MDHAQ-FM4 adds a MDHAQ fatigue VAS; 6/10 is scored 1 (Total 0–4). Both MDHAQ indices were compared to both modified 2011 and 2016 FM criteria using kappa statistics and the proportion correctly classified ("Correct").

Results: We studied 502 patients; primary diagnoses (ICD10 in the medical record) included FM in 49, OA in 74, RA in 78, SLE in 88, others in 213. Overall, 131 patients (26.1%) met 2011 modified FM criteria and 112 (22.3%) 2010 modified FM criteria. Agreement between physician diagnosis of FM and 2016 modified criteria was 80.9% (kappa 0.44, $p<0.001$), and with 2011 modified criteria was 80.3% (kappa 0.45, $p<0.001$). Agreement of MDHAQ-FM3 score ≥ 2 with 2011 modified FM criteria was 84.3% (kappa 0.63, $p\leq 0.001$), and with 2016 FM criteria 81.7% (kappa 0.56, $p\leq 0.0001$). MDHAQ-FM4 increased the level of agreement only slightly (table 1).

Abstract THU0521 – Table 1. Prevalence and agreement of criteria and FAST3 and FAST4 versions in 502 university rheumatology clinic attendees

FM criteria status	FM2011		FM2016	
	Criteria Positive	Criteria Negative	Criteria Positive	Criteria Negative
MDHAQ-FM3				
(n=502)				
Screening positive FM	112 (85.5%)	60 (16.2%)	96 (55.8%)	16 (4.8%)
Screening negative FM	19 (14.5%)	311 (83.8%)	76 (44.2%)	314 (95.1%)
	Correct 84.3% Kappa 0.63 (0.56–0.70)*		Correct 81.7% Kappa 0.56 (0.48–0.63)*	
MDHAQ-FM4				
(n=464)				
Screening positive FM	93 (73.8%)	32 (9.5%)	81 (64.3%)	27 (7.9%)
Screening negative FM	33 (26.2%)	306 (90.5%)	45 (35.7%)	311 (92.0%)
	Correct 85.9% Kappa 0.64 (0.57–0.72)*		Correct 84.5% Kappa 0.59 (0.50–0.67)*	

Conclusions: Two indices derived from MDHAQ variables for pain, painful joints, somatic symptoms, and fatigue, provide a useful clue to FM in routine rheumatology care.

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Back pain, mechanical musculoskeletal problems, local soft tissue disorders

THU0522 EXPERIMENTAL TENDINOPATHY TREATMENT WITH SM04755, A TOPICAL SMALL MOLECULE INHIBITOR OF THE WNT PATHWAY

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Background: Tendinopathy is an inflammatory and degenerative disorder caused by injuries and overuse. Affected tendons become fibrotic, with micro tears that can lead to pain and rupture. Current therapeutic options treat symptoms and not underlying causes. The Wnt pathway is upregulated in chronic tendinopathy and involved in inflammation, tenocyte differentiation and fibrosis.

Objectives: SM04755, a novel, topical, small molecule Wnt pathway inhibitor, has previously been shown to inhibit inflammation, reduce fibrosis and increase tenocyte differentiation in nonclinical models¹. Two further experiments are presented: 1. SM04755 treatment in an acute dose response tendinopathy model and 2. SM04755 treatment in a repeat injury/delayed treatment (RIDT) tendinopathy model. These models simulate acute and acute-on-chronic clinical tendinopathy, respectively.

Methods: SM04755 was assessed in rodent Achilles tendinopathy models, induced by intra-tendon collagenase injection (500 µg). In the acute dose response model, a single injection of collagenase or sham per animal on Day -4 was followed on Day 0 by daily topical vehicle, or 0.3 mg/cm² or 0.9 mg/cm² SM04755. Achilles tendons were harvested on Days 7, 14, and 21. In the RIDT model, collagenase injections were given at Days -28 and -14, followed on Day 0 with daily topical vehicle or 0.3 mg/cm² SM04755. Achilles tendons were harvested on Days 7, 14, 21 and 28. Blinded histology analyses scored tendon health based on linearity, tendon cell shape, tendon cell density, inflammation, and haemorrhage (range 5–20). Statistical analyses used one-way ANOVA for multiple group comparisons and t-tests for comparison between two groups.

Results: In the acute dose response model, SM04755 improved tendon health from baseline compared to vehicle as assessed by tendon histology scores. Vehicle scores were 10.77 [±1.46] at Day 7, 10.44 [±0.66] at Day 14, and 10.31 [±1.02] at Day 21. SM04755 0.3 mg/cm² dose group scores were 12.30 [±0.62] at Day 7 (NS), 10.45 [±1.29] at Day 14 (NS), and 14.37 [±0.82] at Day 21 (p<0.05). SM04755 0.9 mg/cm² dose group scores were 12.22 [±1.02] at Day 7 (NS), 14.57 [±0.41] at Day 14 (p<0.05), and 14.67 [±0.76] at Day 21 (p<0.05) (figure 1). In the RIDT model, vehicle scores were 12.35 [±0.30] at Day 7, 10.09 [±0.76] at Day 14, 11.92 [±0.77] at Day 21 and 13.72 [±0.35] at Day 28. SM04755 0.3 mg/cm² dose group scores were 11.86 [±2.13] at Day 7 (NS), 9.44 [±0.48] at Day 14 (NS), 14.61 [±0.77] at Day 21 (p<0.05), and 14.93 [±0.46] at Day 28 (NS) (figure 2).

Abstract THU0522 – Figure 1. Progression of tendon health scores after SM04755 treatment in the acute treatment collagenase model.

Abstract THU0522 – Figure 2 Treatment with SM04755 in the delayed treatment collagenase model

Conclusions: In the acute dose response model, SM04755 0.3 mg/cm² dose showed statistically significant improvements in tendon scores compared to vehicle at Day 21. The 0.9 mg/cm² dose achieved significance at Days 14 and 21, indicating faster response at higher SM04755 dose. In the RIDT model of repeat collagenase injections and delayed intervention, SM04755 0.3 mg/cm² dose promoted accelerated tendon healing compared to vehicle. Therefore, SM04755 demonstrated accelerated improvement of tendon histology in acute and RIDT models compared to vehicle and has potential as a tendinopathy therapy. Clinical studies are planned.

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THU0523 DO WE NEED STEROID INJECTION AFTER ULTRASOUND GUIDED PERCUTANEOUS LAVAGE OF A ROTATOR CUFF CALCIFICATION ? RESULTS AT 3 MONTHS OF A DOUBLE BLINDED RANDOMISED CONTROLLED STUDY

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Background: Rotator cuff calcific tendinopathy is a common condition causing up to 20% of the painful shoulder. Ultrasound guided percutaneous lavage (UGPL) is indicated after failure of conservative treatments. Steroids injections in the subacromial bursa (SAB) are usually performed after the lavage to prevent the pain induced by the procedure. However, some suggested that this injection could prevent the inflammatory reaction leading to the disappearance of the calcific deposit. Moreover, its efficacy to prevent post-procedure pain has never been demonstrated.

Objectives: The goal of this study was to evaluate the effect of a steroid injection in the SAB after UGPL on the pain and the radiographic evolution of the calcification.

Methods: This was a multicentric prospective double blinded randomised controlled study. We included patients with shoulder pain for more than 3 months and a type A or B calcification >5 mm on X-Ray. Patients were treated with UGPL using a single needle technic. At the end of the procedure, they received a blind injection of either 2 mL of methylprednisolone acetate or 2 mL of serum saline. The primary outcome was the maximal VAS pain (0–100) the first week following UGPL. Secondary outcomes were the evolution of VAS pain at 7 days, 6 weeks and 3 months and the radiographic changes of the calcification at 3 months.

Results: We included 134 patients, mean age 49.8 (±9.7) years, 89 females (67.4%). Calcifications involved the supraspinatus, infraspinatus and subscapularis in 114 (85%), 14 (10%) and 6 patients (5%) respectively. Calcifications were type A and type B in 42.5% and 57.5% of the cases respectively and mean size of the calcification was 1.5 cm (±0.5). Backflow of calcific material was obtained in 107 patients (81.1%). Maximum pain during the first week following UGPL was 71.5 [CI95%:63.9–79.20] in the serum saline group versus 59.8 [CI95%:52.2–67.41] in the steroid group with a mean difference of 11.7 [CI95%:3.7–19.7]. More patients in the placebo group needed to take NSAID (12.1% versus 6.1%) and paracetamol (16.7% versus 9.1%) during the first week. VAS pain at rest and during activities decreased significantly more in the steroid group compared to the placebo: VAS pain during activity was 72.02 [62.98–81.06], 26.63 [17.60–35.67], 32.30 [23.11–41.49] and 43.27 [34.18–52.37] in the steroid group versus 72.46 [63.41–81.51], 48.22 [39.14–57.31], 51.44 [42.26–60.62] and 51.09 [41.95–60.24] in the placebo group at day 0, 7, 6 weeks and 3 months respectively (figure