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