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.

Disclosure of Interest: J. Schmekler: None declared, I. Castrejon: None declared, T. Pincus Shareholder of: Dr. Pincus holds a copyright and trademark for MDHAQ and RAPID3 for which he receives royalties and license fees. All revenue is used to support further development of quantitative questionnaire measures for patients and doctors in clinical 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

1). At 3 months no difference was found in the radiographic evolution: 62.1% of the patients treated with steroid and 64.8% treated with serum saline had more than 50% of resorption of their calcification.

Conclusions: Our study shows that steroid injection in the SAB leads to a significant decrease of maximal pain the following week. This treatment also decreases significantly the pain during the 3 first months after UGPL. Importantly, we found no difference between the 2 groups in the radiographic evolution of the calcification at 3 months. Overall, steroids injections in the SAB can be recommended after UGPL.

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THU0524 IS THERE ANY EFFECT OF KINESIOTAPING ON RADIAL NERVE IN PATIENTS WITH UNILATERAL LATERAL EPICONDYLITIS? A RANDOMIZED-SINGLE BLIND STUDY

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Objectives: Lateral epicondylitis is characterised by pain in the lateral epicondyle of the humerus and common extensor tendon (CET). It was reported that radial nerve cross-sectional area were increased in refractory lateral epicondylitis measuring with ultrasonography, although nerve conduction studies were normal. In literature, it is indicated that kinesiotaping is effective at the treatment of lateral epicondylitis. In this study, we aimed to evaluate the effect of kinesiotaping with the larger sample size and using ultrasonography in addition to clinical parameters with patients lateral epicondylitis.

Methods: Eighty-five patients with unilateral lateral epicondylitis who completed the inclusion criteria were randomised into two groups. The non-steroidal anti-inflammatory drug (NSAID) was administered to the control group (CON) twice daily for 10 days, while kinesiotaping (KT) was performed 3 times a week for 2 weeks, in addition to the same NSAIDs. Clinical and ultrasonographic evaluation was performed before treatment, at 2 weeks (at the end of treatment) and at 6 weeks. Visual analogue scale (VAS), Nirschl grading, and PRTEE (Patient Based Tennis Elbow Evaluation Test) were used for clinical evaluation. The radial nerve cross-sectional area (RNCSA) were measured at two level: spiral groove, just before bifurcation and CET thickness was calculated by ultrasonography. Clinical evaluation, ultrasonographic evaluation and management of treatment were performed by blind investigators.

Results: The study was completed with 80 patients and there were 40 patients in both groups. There were no significant difference age, gender, education, occupation, symptom duration and body mass index in both groups. The improvement of VAS was significant in CON at 2nd week ($p < 0.05$), but not at 6th weeks. In KT group, improvement of VAS was significant both at the 2nd and at 6th weeks ($p = 0.00$). Significant improvement was observed in spiral groove RNCSA and CET thickness in both groups. In the KT group, RNCSA at the level of pre-bifurcation was decreased significantly at the 2nd and 6th weeks ($p = 0.00$), but there was no descrease in the CON. When the groups were compared, significant differences were observed in clinical parameters, CET thickness, and bifurcation RNCSA values at 2 and 6 weeks in the KT group ($p < 0.01$).

Conclusions: Kinesiotaping improves clinical parameters and decreases ultrasonographic parameters such as CET thickness and radial nerve cross-sectional area. Therefore, kinesiotaping may be an alternative method that can be used in the treatment of lateral epicondylitis.

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THU0525 EFFECT OF LOCAL INSULIN INJECTION IN THE TREATMENT OF MILD TO MODERATE CARPAL TUNNEL SYNDROME IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Background: Carpal tunnel syndrome (CTS) is the most common focal nerve entrapment and is a significant cause of morbidity; this syndrome has a higher incidence in diabetic patients. It has been suggested that insulin influences nerve regeneration in a similar way to that of nerve growth factor.

Objectives: Aim: The aim of the study was to compare the effectiveness of local insulin injection, with that of local steroid injection and of local steroid followed by insulin injections in treating mild to moderate carpal tunnel syndrome in patients with type 2 diabetes mellitus.

Methods: Patients and methods: The study included 60 type 2 diabetic patients with electrophysiologic evidence of mild to moderate CTS. They were randomly assigned to three groups: group I received insulin injection of 10 IU Neutral Protamine Hagedorn insulin (NPH insulin) locally into the affected carpal tunnel at the first visit and a similar dose of insulin after 2 weeks; group II received a single injection of 40 mg methylprednisolone acetate injection into the carpal tunnel. And group III received a steroid injection into the carpal tunnel then followed by insulin injection twice after 2 and 4 weeks from the steroid injection. Clinical, electrophysiologic and ultrasonographic evaluations were carried out at the start of the study and at 10 weeks after treatment.

Results: Results: In all groups, there was significant improvement in symptoms, signs and assessment questionnaires (SS score, FD score, and VAS) after receiving the injection. Also, there was a statistically highly significant improvement in DML, SNCV, PSL, and a statistically significant improvement in Samp in the insulin group. While in steroid group there was a statistically highly significant improvement in PSL, and a statistically significant improvement in SNCV. In the third group (steroid followed by insulin), there was a statistically highly significant improvement in DML, SNCV and PSL. As for ultrasonographic assessment, there was a statistically significant improvement in CSA and PD in all groups. The third group (steroid followed by insulin) showed the best improvement as regard the CSA.

Conclusions: Conclusion: Local insulin injection was found to be as effective as steroid in reducing the symptoms of CTS and improving electrophysiological and ultrasonographic findings, being a safer alternative for diabetic patients. Our findings suggest that local insulin injection after local steroid injection may be of additional benefit in improving median nerve ultrasonographic parameters in mild to moderate diabetic CTS. **Keywords:** Type 2 diabetes mellitus, carpal tunnel syndrome, local insulin injection.

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