Diabetes	-0.33
Weather sensitivity	-0.22
Adherence (%) ^a	0.01
Stimulation intensity (dB) ^b	0.02
Constant	-2.36

^aAdherence, percentage of days with at least 30 minutes of stimulation.

^bStimulation intensity, ratio of therapeutic stimulation to sensation threshold expressed in decibels (20log[therapy/sensation]).

All coefficients $P < 0.05$.

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THU0491 RELIABILITY AND VALIDITY OF THE İSTANBUL LOW BACK PAIN DISABILITY INDEX IN LUMBAR RADICULOPATHY

Savaş Sencan¹, Didem Erdem², Serhad Bilim¹, Mehmet Tuncay Duruöz².

¹Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation, Division of Pain Medicine, İstanbul, Turkey; ²Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation, Division of Rheumatology, İstanbul, Turkey

Background: The Istanbul Low Back Pain Disability Index (ILBPDI) was developed to assess the disability in patients with mechanical low back pain with 18 daily activities questions (1).

Objectives: The aim of this study is to investigate the validity and reliability of the Istanbul Low Back Pain Disability Index in lumbar radiculopathy.

Methods: Patients who were diagnosed with radiculopathy due to lumbar spinal stenosis and/or disc herniation by physical examination and imaging methods were included in the study. Data about age, sex, body mass index (BMI), disease duration (month) were noted. Short Form 36 (SF-36) was used to assess the quality of life. Disability due to low back pain was assessed with Oswestry Low Back Disability Questionnaire. The severity of low back pain and extremity pain due to radiculopathy were assessed on the Visual Analogue Scale (VAS).

The reliability of ILBPDI was determined by internal consistency (Cronbach's alpha coefficient). The construct validity (convergent and divergent validities) was evaluated. The correlations of the ILBPDI with SF-36, Oswestry Low Back Disability Questionnaire, and the VAS scores of the low back pain and radiculopathy were assessed for convergent validity. The relations of the ILBPDI with age, BMI, and disease duration were assessed for divergent validity. The construct validity of the ILBPDI scale was determined by Spearman's correlation coefficient. The descriptive analysis was done for demographic data. $P < 0.05$ accepted as significant. SPSS 20.0 (Statistical package for social sciences for Windows 20.0) program was used for the statistical analysis.

Results: The mean age of 82 patients (44 female, 38 male) with lumbar radiculopathy was 45.45 (SD: 11.96) years. The median (min-max) duration of disease was 5 (1-120) months. The mean BMI of patients was 29.09 (SD: 5.04). The mean score of ILBPDI was 30.73 (SD: 17.04) and the mean score of Oswestry Low Back Disability Questionnaire was 52.73 (SD: 16.98).

The Cronbach's alpha coefficient of the ILBPDI for internal consistency was 0.764. The ILBPDI score had moderate and significant positive correlations with Oswestry Low Back Disability Questionnaire (ρ : 0.610, $p < 0.005$). Statistically significant but low correlation was detected between ILBPDI and the VAS score of radiculopathy (ρ : 0.285, p : 0.010), but there was no correlation with the VAS score of low back pain ($p > 0.05$). As for the correlations between the ILBPDI total score and SF-36 subgroups, significant negative correlations were detected with physical functioning (ρ : -0.672, $p < 0.005$), physical role limitation (ρ : -0.230, p : 0.038), bodily pain (ρ : -0.546, $p < 0.005$), general health (ρ : -0.262, p : 0.017), and social function (ρ : -0.337, $p < 0.005$) subgroups of the SF-36. There were no significant correlations between ILBPDI and age, disease duration, and BMI ($p > 0.05$).

Conclusion: The Istanbul Low Back Pain Disability Index is a valid and reliable instrument in patients with lumbar radiculopathy. This is a preliminary study. The study will continue for the factor analysis.

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THU0492 EFFICACY OF US-GUIDED HYALURONIC ACID INJECTIONS IN ACHILLES AND PATELLAR MID-PORTION TENDINOPATHIES: A PROSPECTIVE MULTICENTRIC CLINICAL TRIAL

Antonio Frizziero¹, Filippo Vittadini², Francesco Oliva³, Mario Vetrano⁴, Maria Chiara Vulpiani⁴, Nicola Giordan⁵, Stefano Masiero¹, Nicola Maffulli³. ¹University of Padua, Padova, Italy; ²Metropolitan City of Venice, Venice, Italy; ³University of Salerno, Fisciano, Italy; ⁴Sapienza University of Rome, Roma, Italy; ⁵Fidia Farmaceutici S.p.A., Abano Terme, Italy

Background: Achilles and patellar tendinopathies are common clinical conditions that determine chronic pain and functional impairment. Conservative treatment can be effective, but it is time-consuming and it requires intensive patient compliance.

Hyaluronic acid (HA) is a key component of the extracellular matrix, and its anti-inflammatory, lubricant and analgesic properties are well established in osteoarthritis. Growing pre-clinical evidence point toward a possible role of HA in the management tendon pathology, while clinical evidences are still lacking.

Objectives: The primary objective was to assess the efficacy of a new formulation of HA (20 mg/2 ml; 500-730 kDa), obtained from biofermentation, in function improvement on VISA-A and VISA-P scores at 90 days of follow-up in patients with Achilles or patellar tendinopathy.

Secondary objectives were to evaluate improvement in pain (NRS-11), US parameters (tendon composition and neovascularization), and quality of life (EQ-5D). Safety of this new HA formulation was also evaluated.

Methods: This was a prospective, open-label, multicenter clinical trial. Thirty-five patients (25 in AT group; 9 patients in PT group), who satisfied strict inclusion and exclusion criteria, were recruited over a 4-month period. Each patient received 1 injection weekly for 3 weeks under US-guidance at the painful site of tendinopathy, and was evaluated at 14, 45 and 90 days after the procedure. Subjects were instructed to record on a diary any intake of the permitted rescue medication for pain relief (i.e. paracetamol up to 3 g per day) throughout the study period and to interrupt treatment at least 24 hours prior to each visit.

Results: Significant improvement on VISA-A (23.22±23.17; 95% CI: 13.20; 33.24; $p < 0.0001$) occurred, and improvement on VISA-P was also revealed (19.25±11.61; 95% CI: 9.54; 28.96; $p = 0.0022$). NRS-11 score significantly decreased in the AT group (4.52±3.25; 95% CI: -5.93; -3.12; $p < 0.0001$) and in the PT group (-4.75±3.20; 95% CI: -7.42; -2.08; $p = 0.0040$).

Significant improvement of US parameters in the AT group was evidenced (McNemar's test; $p = 0.0016$ and $p = 0.0114$, respectively), while in the PT group the presence of these clinical symptoms showed only a tendency to decrease ($p = 0.3173$ for both). EQ-5D-5L total score tended to increase in both the AT and PT groups (mean change vs. baseline at day 90 equal to 15.96±18.95 (range: -50; 45) and 15.50±32.42 (range: -40; 71), respectively).

Conclusion: Three US-guided HA injections may improve pain and function in patients with Achilles and patellar tendinopathy for up to 90 days of follow-up. Amelioration in tendon structure, neovascularization and clinical parameters may also be achieved. The hyaluronic acid injection was also safe and well tolerated.

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THU0493

A MULTICENTRE RANDOMISED CONTROLLED FOLLOW-UP STUDY OF EFFECTS OF THE UNDERWATER TRACTION THERAPY IN CHRONIC LOW BACK PAIN

Tamas Gati¹, Agota Kulisch², Éva Czimer³, Györgyi Cserhádi⁴, Judit Fehér⁵, Mihály Oláh⁵, Zsuzsanna Mándó², Tamas Bender¹. ¹Polyclinic of The Hospitaller Brothers of St John of God, Budapest, Hungary; ²St. Andrew Hospital for Rheumatic Diseases, Hévíz, Hungary; ³Sóstógyógyfürdő, Nyíregyháza, Hungary; ⁴Kenézy Gyula Hospital and Clinic (Debrecen), Debrecen, Hungary; ⁵Hungarospa Hajdúszoboszló Private Limited Company, Hajdúszoboszló, Hungary

Background: Chronic low back pain established for more than 3 months is one of the most common problems in the world. The prevalence could reach the 33%.

Objectives: To investigate the effects of underwater traction therapy on chronic low back pain.

The primary objective was to prove the hypothesis that underwater traction therapy has favourable effect of LBP using the change in the clinical parameters. Our secondary objective was to evaluate whether it also leads to the improvement in the quality of life.

Methods: A prospective, multicenter, comparative (intervention arm vs. control arm), randomized follow-up study.

Participants aged between 18 and 85 years with more than 3 months low back pain and selected from outpatient clinics.

The participants were randomized to three groups: underwater weight bath traction therapy, weight bath and non-steroidal anti-inflammatory drugs (NSAIDs) medication and only non-steroidal anti-inflammatory drugs (NSAIDs) medication.

During the traction therapy ankle weights were used.

The following parameters were measured before, right after, and nine weeks after the three-week therapy: level of low back pain in rest, level during activity tested using the Visual Analog Scale (VAS); specific questionnaire on back pain (Oswestry); questionnaire on quality of life (EuroQual-5D) and clinical parameters.

Results: 141 participants aged 57.67 (± 13.04) years. All of the investigated parameters improved significantly ($p < 0.001$) in the underwater weight bath traction therapy groups by the end of the treatment compared to the base period, and this improvement was persistent during the follow-up period. There were no significant changes in the measured parameters in the control group except for the Oswestry Disability Index, which may also be the result of that group receiving pain-relieving drug therapy.

Conclusion: Based on our results, underwater weight bath traction therapy, might have favourable impact on the clinical parameters and quality of life of patients suffering from chronic low back pain.

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THU0494

RELATIONSHIP BETWEEN THE AREA OF THE MEDIAN NERVE CROSS SECTION AND THE CIRCUMFERENCE OF THE CARPUS AS A DIAGNOSTIC TOOL FOR CARPAL TUNNEL SYNDROME

Carlos Guillén-Astete, Patricia García-Casado. *Hospital Ramón Y Cajal, MADRID, Spain*

Background: The diagnosis of carpal tunnel syndrome (CTS) is fundamentally electrophysiological, however, on diagnostic suspicion ultrasonography has been shown to correlate satisfactorily with the electromyogram. The limitations of the ultrasound study of the median nerve in patients

with STC are due to the fact that the intervals of normality of the area of the median nerve cross section (ACTNM) are variable according to the sources consulted, the sex and the anthropometry of the individual.

Objectives: The purpose of this study is to determine whether NMTA can be correlated with a simple measurement such as wrist circumference length (MCL) in patients with electrophysiological diagnosis of TCEs and healthy subjects and used to discriminate them better than with the simple measurement of NMTA.

Methods: We included 50 patients with electrophysiological diagnosis of CTS and 43 healthy subjects of white ethnicity, older and with different anthropometric characteristics. The patients came from the Rheumatology consultations of three different centres. Healthy volunteers were subjects without CTS clinic, thyroid alterations, diabetes or known autoimmune rheumatological diseases whose data were obtained from a previous study. Circumference was measured with a flexible tape measure around the carpus immediately distal to the interstyloid line. The ultrasound measurements were made at the height of the escofoid and pisciforme bones using three different ultrasound scanners according to the headquarters: Toshiba Nemio XG, 13Mhz linear probe, Samsung HM70a 14 MHz and Logiq e GE 12 MHz. All the measured images were captured for analysis and correction of circumference lengths by an observer not linked to the identity of the subjects nor to their character of patient or control. An association study between wrist circumference and ACTNM was performed for both groups and a correlation index was submitted to a validation test for the determination of sensitivity and specificity.

Results: ACTNM was 11.11 SD 1.18mm² in the control group and 12.73 SD 1.50mm² in the patient group ($p < 0.05$). The LCM was 18.81 DE 1.50cm and 18.72 DE 1.85 ($p = 0.803$). In healthy subjects, the correlation between ACTNM and carpal circumference showed a satisfactory correlation (Coef Pearson 0.809, $p < 0.01$, bilateral) as well as in patients (Coef Pearson 0.878, $p < 0.01$, bilateral). The ACTNM/LCM index in the control group was 0.590 and for the patient group 0.679 ($p < 0.01$). The area under the ACTNM curve was 0.808 EE 0.049 while in the case of the ACTNM/LCM index was 0.954 EE 0.019. The area under the ACTNM curve was 0.808 EE 0.049 while in the case of the ACTNM/LCM index was 0.954 EE 0.019. With an index of 0.62 or a sensitivity of 93% and specificity of 78% are obtained for the diagnosis of CTS.

Conclusion: LCM correlates well with ACTNM in healthy patients. It could be considered a good anthropometric marker for further studies of normal ultrasound ranges of the median nerve. The LCM/ACTNM index is a useful measure to discriminate controls of patients with electrophysiological diagnosis of JTS. In our series, this index exceeds the discriminatory capacity of the ACTNM as an individual measure.

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THU0495

ROLE OF PLATELET RICH PLASMA IN TREATMENT OF ROTATOR CUFF TENDINOPATHY AND PARTIAL THICKNESS TEAR: FOLLOW UP BY ULTRASOUND

Yasmin.Khairi, Mona Nasr, Fatma Ali, Rasha Ali, Mohammed Abdelhakeem, Adham Khalil. *Faculty of Medicine, Minia University, Egypt., Rheumatology and Rehabilitation Department, Minia, Egypt*

Background: Shoulder pain is the third most common musculoskeletal reason for seeking medical care. The diagnosis of Rotator Cuff Tendinopathy (RCT), with supraspinatus partial thickness tendon tears and tendinosis, constitutes more than 50% of adult cases presenting with shoulder pains at any time. Platelet rich plasma (PRP) injections are nowadays being used as an alternative for treating the tendinopathies, who have failed to be managed by conservative management.

Objectives: This work aimed to assess the effect of PRP injection under musculoskeletal ultrasound (MSUS) guidance in patients with rotator cuff tendinopathy, and partial thickness tear in comparison with those who received a rehabilitation program only. Baseline assessment and after three months was done using clinical, functional and ultrasonographic evaluation.

Methods: Our study included 60 patients with RCT diagnosed both clinically and by MSUS. Patients were divided into two groups (I, II); group I included 30 patients who received a Supervised Rehabilitation Program and group II included 30 patients who received PRP injection. Patients in both groups were assessed clinically, functionally [(VAS), (WORC) and (SPADI)] and sonographically at baseline and after 3 months. Rehabilitation Program included: hot packs, (TENS), and (therapeutic ultrasound). The Exercise Programs (supervised and home-based) were applied, including: (ROM, stretching and strengthening exercises of the rotator cuff and scapular muscles). PRP injection was prepared under complete sterile conditions by whole blood centrifugation with specific