New Frontiers in Chronic Myofascial Pain and Central Sensitization

Integrating Advancements in the Pain Sciences With Evaluation and Treatment Strategies

Jay P. Shah MD and John Srbely DC, PhD

Organisatie: Frank Timmermans
Uplands Physio Clinic - 115-166 Power Street - Penticton BC V2A 5W9 – Canada - 12507703235
Doel:
De presentatie van de meest recente research met betrekking tot de mechanismen van myofasciale pijn met centrale sensitisatie en hoe deze kennis toegepast kan worden binnen de management van chronische myofasciale pijn.
Doelgroep: fysiotherapeuten, manueel therapeuten en artsen.
Prijs: 300 euro.
Aantal cursisten: minimaal 20 en maximaal 40.
Didactische werkwijze: theorie (6 uur) en demonstratie van praktijk (2 uur).
Aantal contacturen: 8 – vanaf 9 tot 18 uur met lunch tussen 12.30 en 13.30 uur.
Accreditatie: wordt aangevraagd voor registers: algemeen, manueel en sport.
Aanmelden: via uplandsphysio@shaw.ca o.v.v. 'Workshop Shah'.
Regeling voor aan- en afmelding, betaling, annuleringsvoorwaarden:
https://www.dryneedling.nl/pages/aanmelden/algemene-voorwaarden.php

Workshop description

This workshop explores the dynamic roles that myofascial trigger points (MTrPs), central sensitization, limbic system dysfunction, and objective physical findings play in the evaluation and management of chronic myofascial pain.

Spinal Segmental Sensitization (SSS) is a hyperactive state of the dorsal horn caused by bombardment of nociceptive impulses. Painful MTrPs are a common source of persistent nociception that leads to SSS and facilitated segments. Maladaptive changes in subcortical structures (e.g., the limbic system) and dysfunctional descending inhibition may contribute to somatic tissue abnormalities (e.g., tissue texture changes, tenderness, and stiffness).

Typical physical manifestations of SSS include dysesthesias such as allodynia / hyperalgesia, sclerotomal tenderness, expansion of receptive fields and painful MTrPs within the affected myotomes. Patients usually exhibit increased wind-up within the affected dermatome which can be quantified clinically though Quantitative Sensory Testing (QST) techniques such as weighted pinprick analysis to determine mechanical pain threshold (MPT) and wind-up ratio (WUR).

Participants will learn to recognize these objective and reproducible physical findings to identify the dysfunctional spinal segment(s) that should be treated and the application of QST techniques in the assessment of central sensitization.

Participants will also be shown therapeutic techniques to deactivate painful MTrPs and their associated sensitized spinal segments, in order to effectively alleviate chronic myofascial pain. The clinical application and interpretation of MPT and WUR outcomes will be discussed and demonstrated as objective measures of improvement in pain sensitivity post-treatment.

Learning Objectives

Upon completion of this workshop, participants will have learned:

1) The unique neurobiology of muscle pain and the dynamic interplay of muscle nociceptors and endogenous biochemicals in the initiation, amplification, and perpetuation of peripheral and central sensitization.

2) That persistent nociceptive bombardment, neurogenic inflammation, wide dynamic range neurons, subcortical structures (e.g., the limbic system) and dysfunctional descending inhibition all play a pivotal role in muscle sensitization, pain chronification, somato-visceral interactions and the objective, reproducible physical findings of allodynia, hyperalgesia and referred pain patterns.

3) How to determine the reproducible physical manifestations of spinal segmental sensitization (involving dermatomes, myotomes, and sclerotomes) observed in chronic myofascial pain and dysfunction.

4) How to assess central sensitization via Quantitative Sensory Testing (QST), including measurement of mechanical pain thresholds (MPT) and windup ratios (WUR) using weighted pinprick technique.

5) Novel applications of ultrasound imaging are able to visualize MTrPs, measure their stiffness properties and local blood flow.

6) That MTrPs in the upper trapezius are stiffer than surrounding tissue and that active MTrPs can be distinguished from latent MTrPs by their high-resistance blood flow and greater surface area.

7) Therapy techniques that desensitize the involved segments, deactivate painful MTrPs, and alleviate chronic myofascial pain and dysfunction.

8) How treatment of painful MTrPs leads to a significant decrease in muscle stiffness and how ultrasound can be used as an objective and repeatable outcome measure.

9) How to apply and interpret MPT and WUR outcomes as an objective measure of improvement in pain sensitivity post-treatment.

10) How to design an appropriate treatment algorithm to desensitize the involved segments, eliminate chronic MTrPs and alleviate chronic myofascial pain and dysfunction.

Brief Speaker Bios

Jay P. Shah, MD is a physiatrist and clinical investigator in the Rehabilitation Medicine Department at the National Institutes of Health in Bethesda, Maryland-USA. His interests include the evaluation and mechanisms of chronic myofascial pain and non-pharmacologic treatment techniques such as dry needling, electrical stimulation and acupuncture. Jay and his co-investigators have utilized novel micro-analytical and ultrasound imaging techniques that have uncovered the unique biochemical milieu (e.g., inflammatory mediators, neuropeptides, etc.) and viscoelastic properties of active MTrPs. Their studies have revealed objective, reproducible, and quantifiable muscle tissue properties associated with MTrPs and quantitative effects of dry needling on these tissue properties.

Jay was selected by the American Academy of Pain Management as the 2010 recipient of the Janet Travell Clinical Pain Management Award for excellence in clinical care and by the National Association of Myofascial Trigger Point Therapists as the 2012 recipient of the David G. Simons Award for excellence in clinical research.

Dr John Z Srbely DC PhD, is a full-time Assistant Professor in the Department of Human Health and Nutritional Science, University of Guelph (Guelph, Ontario, Canada). He previously held a Canadian Chiropractic Research Foundation (CCRF) Research Chair in Spine Mechanics and Neurophysiology (2008-2013).

His primary research interest centers around the study of the physiologic mechanisms and role of central sensitization and neurogenic inflammation in the pathophysiology of myofascial trigger points and the clinical manifestation of chronic myofascial pain.

He has received a prestigious Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant to study the causal relationship between central sensitization and the physiologic expression of sensitivity, morphology and electrophysiology of the myofascial trigger point within human peripheral muscle. His research program also aims to advance both experimental and clinical techniques for the quantification of central sensitization in humans.

Relevant Publications by the Workshop Co-Presenters:

Gerber LH, Sikdar S, Aredo, J, Armstrong, K, Rosenberger, W, Shao H, Shah J. Beneficial Effects of Dry Needling for Treatment of Chronic Myofascial Pain Persist for 6 Weeks After Treatment Completion. PMR Volume 9, Issue 2, February 2017, Pages 105-112.

Aredo JV, Heyrana KJ, Karp BI, Shah JP, Stratton P. Relating Chronic Pelvic Pain and Endometriosis to Signs of Sensitization and Myofascial Pain and Dysfunction. Semin Reprod Med. 2017 Jan;35(1):88-97.

Turo D, Otto P, Hossain M, Gebreab T, Armstrong K, Rosenberger W, Shao, H, Shah JP, Gerber LH, Sikdar S. Novel Use of Ultrasound Elastography to Quantify Muscle Tissue Changes After Dry Needling of Myofascial Trigger Points in Patients with Chronic Myofascial Pain. Journal of Ultrasound in Medicine. 2015 Dec; 34(12) 2149-2161.

Shah, JP, Thaker N, Heimur J, Aredo J, Sikdar S, Gerber L. Myofascial Trigger Points Then and Now: A Historical and Scientific Perspective. PMR Volume 7, Issue 7, July 2015, Pages 746–761.

Gerber LH, Shah J, Rosenberger W, Armstrong K, Turo D, Otto P, Heimur J, Thaker N, Sikdar S. Dry Needling Alters Trigger Points in the Upper Trapezius Muscle and Reduces Pain in Subjects with Chronic Myofascial Pain. PMR Volume 7, Issue 7, July 2015, Pages 711–718.

Gerber L, Sikdar S, Armstrong K, Diao G, Heimur J, Kopecky J, Turo D, Otto P, Gebreab T, Shah J. A Systematic Comparison Between Subjects With No Pain and Pain Associated With Active Myofascial Trigger Points. PMR 2013 Nov;5(11):931-8.

Shah JP, Gilliams EA. Uncovering the biochemical milieu of myofascial trigger points using in-vivo microdialysis: An application of muscle pain concepts to myofascial pain syndrome. Journal of Bodywork and Movement Therapies. 2008; 12(4): 371-84.

Maracle EC, Hung LY, Fell SI, Osmond MR, Brown SH, Srbely JZ. A Comparison of the Sensitivity of Brush Allodynia and Semmes-Weinstein Monofilament Testing in the Detection of Allodynia Within Regions of Secondary Hyperalgesia in Humans. Pain Practice. 2017.17(1), 16-24.

Srbely JZ, Dickey JP, Lee D, Lowerison M.J. Dry needle stimulation of myofascial trigger points evokes segmental anti-nociceptive effects. Rehabil Med. 2010 May;42(5):463-8.

Srbely JZ. New trends in the treatment and management of myofascial pain syndrome. Curr Pain Headache Rep. 2010 Oct;14(5):346-52.

Srbely JZ, Dickey JP, Lowerison M, Edwards AM, Nolet PS, Wong LL. Stimulation of myofascial trigger points with ultrasound induces segmental antinociceptive effects: a randomized controlled study. Pain. 2008 Oct 15;139(2):260-6.