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REVIEW: CLINICAL REVIEW SECTION

A critical overview of the current myofascial pain literature — July 2016

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Summary The overview of the myofascial pain literature includes a wide variety of basic and clinical studies, ranging from assessing muscle activation patterns to the impact of platelet-rich plasma injections. Contributions to the literature once again came from all corners of the world, such as Australia, Belgium, Brazil, Germany, Greece, Iran, Italy, Japan, Korea, the Netherlands, Norway, Poland, Spain, Taiwan, Turkey, and the USA. A total of 30 papers are included in this overview.

Basic research

Bohlooli, N, Ahmadi, A, Maroufi, N, Sarrafzadeh, J & Jaberzadeh, S, 2015. Differential activation of scapular muscles, during arm elevation, with and without trigger points. Journal of Bodywork and Movement Therapies, 20, 26–34.

Physiotherapy researchers from Iran, conducted a study to investigate the muscle activation patterns (MAP) in patients with upper trapezius muscle latent TrPs (LTrPs) compared to healthy controls. This study was informed by previous research on scapular rotator MAP and LTrPs (Lucas et al., 2004, 2010) and filled a gap in the literature by including rapid arm elevation in three planes of movement. Sixty-six females (mean age 23 years) were recruited and

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allocated into either a healthy control group (n = 33, no LTrPs in upper trapezius muscle or scapular rotator muscles) or patient group (n = 33, at least one LTrP in the upper trapezius muscle on the dominant side). Although this study was focussed on latent TrPs and their effect on scapular rotator MAP, a key inclusion criterion was a minimal one-year history of intermittent pain caused by active TrPs (ATrPs) in their upper trapezius muscle of the dominant side, with no spontaneous pain at the time of the study. Three planes of scapular movement were evaluated and EMG activity in the upper trapezius, serratus anterior and deltoid (ant and middle) muscles of the right shoulder (dominant side) were recorded using a multichannel EMG. The results indicated that LTrPs led to a delay and inconsistent activity in the upper trapezius muscle in all three planes of elevation compared to the control group. In flexion (sagittal plane), the serratus anterior muscle, was delayed in activation in the LTrPs group compared to the control group. This study is relevant in that it highlights and identifies the clinical importance of LTrPs that is often overlooked by researchers, concentrating on myofascial pain syndromes (MPS) and active TrPs instead. Unfortunately, the internal validity of this study has been affected by the inclusion of patients in the LTrP group with a year long history of intermittent pain that may be a confounding factor/variable affecting the overall outcomes. Interestingly the researchers noted (not in the limitations) that the observed changes in timing might have been caused by their intermittent pain during the year before the study. Further justification and clarity is also needed on why only females were recruited into this study, which may in turn affect the external validity.

Chiarotto, A, Clijsen, R, Fernandez-De-Las-Penas, C & Barbero, M, 2016. Prevalence of myofascial trigger points in spinal disorders: a systematic review and meta-Analysis. Archives of Physical Medicine and Rehabilitation, 97, 316–337.

Experienced researchers actively involved in myofascial pain research, conducted a systematic literature review (SLR) with a meta-analysis to synthesize and appraise the evidence on the prevalence of active and latent TrPs in spinal disorders. Twelve observational studies, meeting the eligibility criteria were selected by two independent reviewers. A 16-item modified version of the Downs and Black critical appraisal checklist was used to assess the quality of the included studies. Where a meta-analysis was performed, the overall quality of the evidence was rated using the Grading of Recommendations Assessment, Development and Evaluation approach (Guyatt et al., 2008).

The point prevalence findings on latent and active TrPs were taken from studies with small sample sizes and/or low methodologic quality in different spinal disorders such as neck pain, whiplash associated disorders and non-specific low back pain. Pooled estimates of the point prevalence of active TrPs in subjects with chronic neck pain, showed the highest prevalence in the upper trapezius muscle. Of the 12 studies included in this review, 10 had low methodological quality. This low methodological quality has led the reviewers to conclude, that the spinal TrP point prevalence estimates in this review should be viewed with caution. Future studies with large fully powered samples and of high quality are needed to provide more reliable and precise estimates on the point prevalence of TrPs in spinal disorders. Overall this is an important review that highlights the limitations in the current available spinal TrP prevalence data. The reviewers correctly emphasize, that the validity of the TrP concept is discussed and challenged by some in the scientific community and that the methodological limitations identified in the available evidence, strongly influence some of the debate.

Costa, YM, Porporatti, AL, Stuginski-Barbosa, J, Bonjardim, LR, Speciali, JG & Rodrigues Conti, PC, 2015. Headache attributed to masticatory myofascial pain: clinical features and management outcomes. Journal of Oral & Facial Pain and Headache, 29, 323–330.

A randomized controlled trial (RCT) was conducted by researchers in Brazil, to ascertain if there is an association between headaches and temporomandibular disorders (TMD). The researchers aimed to describe the characteristics of headaches attributed to TMD and assess the effects of two management strategies (patient education or patient education and an occlusion appliance) on headache intensity and frequency. Sixty patients aged 18–50, with masticatory myofascial pain and headache, were randomly allocated into two groups, comprising of only counseling for behavioral changes or a second group who received counseling and an occlusal appliance. Outcome measures for TMD related headache characteristics, included frequency (26-point structured questionnaire) and headache intensity (VAS) and were conducted over 5 months at baseline, month 2 and month 5. The main findings of this study were that headaches attributed to masticatory myofascial pain were mainly characterized by long duration (≥4 h), frontotemporal bilateral location and a pressing/tightening quality. Secondly, counseling and behavioral management of masticatory myofascial pain improved headache, regardless of the use of an occlusal appliance. Of the 41 participants, included in the final analysis, there was a significant reduction in headache intensity and frequency from baseline to month 5, but no significant differences between the groups. The researchers acknowledged that one of the limitations of this RCT was the lack of control group without masticatory myofascial pain and therapy. Therefor it is unclear if the reported headache characteristics can be attributed solely to TMD. The participants with masticatory myofascial pain were included according to the revised research diagnostic criteria for temporomandibular disorders (RDC/TMD) (Schiffman et al., 2010), however no real definitions of myofascial pain, muscles affected or potential TrPs have been provided. Further clarification is also needed as to the reasons for the high attrition rate from 60 participants initially to 41 in the final analysis.