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Central synthesis of temporomandibular dysfunction

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disorder. Patients were randomised into two groups: 8 (39.0 ± 13.2 years old) in the experimental group (EG) and 8 (39.8 ± 13.9 years old) in the control group (CG). Patients from both groups performed home-based exercises daily at home, GE patients performed 4 sessions of physiotherapy, having undergone condylar distraction techniques, CG patients did not perform any other type of intervention. All patients were evaluated before (T0) and after (T1) the intervention. The range of the mandible was evaluated through a digital calliper, the intensity of the pain through the numeric scale of the pain and the presence of articular noises, through palpation. All participants signed informed consent. The study was approved by the Ethics Committee of the Egas Moniz

Results: Condylar distraction technique increased motion range values of the mandible from T0 to T1 in GE group ($p = .012$) and decrease value of pain intensity in T1 when compared to T0 in the GE group ($p = .008$). The obtained results were analized using Student's *t* test. There were no changes in joint noises when comparing T0 with T1 in both groups.

Discussion and conclusions: It is concluded that the condylar distraction technique has positive effects on pain and range of motion of the mandible. However, joint noises remained present after intervention, concluding that condylar distraction has no effect on noise reduction. Recent evidence suggests that manual therapy is a legitimate treatment for TMD promoting improvement in mouth opening and reduction in jaw pain [6]. However, further investigations should be carried out with larger samples in the future.

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References

[1] Okeson JP. Management of temporomandibular disorders and occlusion. 7th ed. St. Louis: Mosby; 2013.
[2] Leeuw R, Klasser I, Gary D. Orofacial pain: guidelines for assessment, diagnosis and management. 6th ed. Hanover Park (IL): Quintessence Publishing Co; 2018.
[3] Al-Baghadadi M, Durham J, Araujo-Soares V, et al. TMJ disc displacement without reduction management: a systematic review. JDR Clin Res Suppl. 2014; 93(7):37S–51S.
[4] Schiffman E, Velly A, Look J, et al. Effects of four treatment strategies for temporomandibular joint closed lock. Int J Oral Maxillofac Surg. 2014;43(2):217–226.
[5] Grossmann E, Silva NA, Jr, Collares MV. Surgical management of a projectile within the temporomandibular joint. J Craniofac Surg. 2012;23(2):613–615.
[6] Kalamir A, Graham PL, Vitiello AL, et al. Intra-oral myofascial therapy versus education and self-care in the treatment of chronic, myogenous temporomandibular disorders: a randomised, clinical trial. Chiropr Man Ther. 2013;21:17.

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Central synthesis of temporomandibular dysfunction

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ABSTRACT

Introduction: Temporomandibular dysfunction (TMD) is a group of conditions that affect bone structures and soft tissues of the orofacial region and are characterised mainly by pain [1]. Patients with TMD often have chronic pain, which in turn results from the mechanisms of sensitisation which is thus responsible for the hypersensitivity of pain [2]. Central sensitisation can be examined experimentally using a conditioned pain modulation paradigm; it can function as a form of inhibition of pain in humans [3]. This study aim to evaluate the conditioned modulation of pain in patients with temporomandibular dysfunction and chronic pain, and also to relate the influence that it has on anxiety and quality of life.

Materials and methods: An analytic observational study was carried out, involving a group of 19 individuals with chronic pain (34.1 ± 14.9 yrs), and sample selection was performed using Research Diagnostic Criteria for Temporomandibular Disorder. (RDC/TMD). The subjects were submitted to the application of a mechanical (algometer) and thermal stimulus (ice) alone and to two mechanical and thermal stimuli simultaneously and independently. The interval application between stimulus, isolated and simultaneously was 5 min. All participants signed informed consent. The study was approved by the Ethics Committee of the Egas Moniz.

Results: It was verified that the intensity of the pain perceived by the patients in the orofacial region during the simultaneous application of the two mechanical stimuli was in 100% of the cases lower than that perceived during the application of one stimulus. Regarding the thermal stimuli, it was verified that the intensity of the pain perceived in the orofacial region during the simultaneous application of the two thermal stimuli was 47% of the times inferior to that perceived during the application of one stimulus.

Discussion and conclusions: The decrease in pain prediction in the orofacial region when two simultaneous stimuli were applied is in agreement with the principles of conditioned pain modulation, which seems to indicate that individuals with TMD have central sensitisation [3]. Given the small size of the sample and the small number of studies carried out on the present theme, it is suggested to carry out new studies with larger samples in the future.

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References

[1] Svensson P, Kumar A. Assessment of risk factors for oro-facial pain and recent developments in classification: implications for management. J Oral Rehabil. 2016;43(12):977–989.
[2] La Touche R, Paris-Alemany A, Hidalgo-Pérez A, et al. Evidence for central sensitization in patients with temporomandibular disorders: a systematic review and meta-analysis of observational studies. Pain Pract. 2018;18(3):388–409.
[3] Kennedy D, Kemp H, Ridout D, et al. Reliability of conditioned pain modulation: a systematic review. Pain. 2016;157(11):2410–2419.

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Effect of a single dry needling session in temporomandibular disorders

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ABSTRACT

Introduction: Temporomandibular disorders embrace a heterogeneous group of pathologies with manifestations in the orofacial region, head and neck. They are defined as a group of musculoskeletal and neuromuscular conditions that involve the temporomandibular joint, the masticatory muscles and the associated structures through interactions and reciprocal influences. They may present one or more signs or symptoms: orofacial pain, pain in the masticatory muscles or a combination of both [1]. According to available literature, pain tolerance threshold at pressure and pain intensity decrease after dry needling intervention [2]. The aim of the present study is to evaluate the effect of a single dry needling session in patients with temporomandibular muscle disorder with pain.

Material and methods: a longitudinal quasi-experimental study with 26 patients with a diagnosis of temporomandibular muscle dysfunction (group I), on the masseter and temporal muscles, according to the Research Diagnostic Criteria for temporomandibular disorder. Patients were randomly picked up from the waiting list of the physiotherapy appointment at Clinica Egas Moniz (CEA) and randomised into two groups: 13 in the experimental group (G1) and 13 in the control group (G2). The groups were evaluated simultaneously but were not submitted to any intervention. The pain tolerance threshold was evaluated at pressure (2 kg), pain intensity measured with numeric pain rating scale (NPRS), before (T0) and after (T1) the intervention, and one week after (T2) the intervention. The intervention consisted of applying the dry needling technique to the painful points of the masseter. Statistical analysis performed in SPSS with a significance level of 5%. All the assumptions of the Helsinki Declaration have been fulfilled and a informed consent for clinical case of Clinica Dentária Egas Moniz approved by the ethic commission of Instituto Universitário Egas Moniz.

Results: G1 group was formed by 12 female and 1 male subjects with an average and standard deviation of 22.78 ± 3.75. G2 group was formed by 13 female with an average and standard deviation of 23.42 ± 2.45. Pain tolerance threshold at pressure values increased from T0 to T2 in G1 group ($p < .001$) with averages and standard deviations respectively for: T0 8.34 ± 1.75; T1 $79{,}886 \pm 2.10$; T2 1.78 ± 0.79. The pain intensity values decreased in T2 when compared to T0 in the G1 group ($p < .001$) with averages and standard deviations respectively for: T0 7.56 ± 1.36; T1 7.86 ± 1.52; T2 0.89 ± 0.72.

Discussion and conclusion: Dry needling promotes an increase in pain tolerance threshold values and a decrease in pain intensity values in patients with temporomandibular muscle disorder after a single session, reinforcing their importance in the treatment of themselves.

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References

[1] Leeuw R, Klasser GD. 2013. Orofacial pain: guidelines for assessment, diagnosis, and management. 5th ed. Quintessence Books.