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Comments on Article Continuous Shortwave Diathermy with Exercise Reduces Pain and Improves Function in Lateral Epicondylitis More Than Sham Diathermy: A Randomized Controlled Trial

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1. Editorial

I read very carefully the article "Continuous shortwave diathermy with exercise reduces pain and improves function in Lateral Epicondylitis more than sham diathermy: A randomized controlled trial." by Babaei-Ghazani et al. (2020) [1] and I would like to congratulate the authors because this was the first trial to investigate the effectiveness of Continuous Shortwave Diathermy (CSWD) in Lateral Epicondylitis (LE) patients. However, I would like to comment the following:

1. LE categorises the condition according to the site of injury and pathophysiology. The suffix "itis" implies an inflammatory pathology although a review of the findings of histological immunohistochemical and electron microscopy studies suggests that the condition may be degenerative rather than inflammatory. Hence, the increased presence of fibroblasts, vascular hyperplasia, proteoglycans and glycosaminoglycans together with disorganised and immature collagen may all take place in the absence of inflammatory cells. Furthermore, pathology is not always over the lateral epicondyle, but may occur below it, on the facet of the lateral epicondyle. Therefore, Lateral Elbow Tendinopathy (LET) seems to be the most appropriate term to use in clinical practice because terms such as LE make reference to inappropriate aetiological, anatomical and pathophysiological terms [2].

2. Authors classified thermotherapy as either superficial or deep (introduction section). The last is a historical classification. However, there is sufficient evidence to suggest that such a classification is no longer justified and should abandoned because all thermal agents can induce both superficial and deep thermal effects on healthy human tissues [3].

3. The application of Transverse Friction Massage (TFM) was incorrect. Cyriax and Cyriax (1983) [4] claimed substantial success in treating LET using TFM in combination with Mill's manipulation, which is performed immediately after TFM. For it to be considered a Cyriax intervention, the two components must be used together in the order mentioned. Patients must follow the protocol three times a week for four weeks [4]. TFM for LET is applied as follows [4,5]. Position the patient comfortably with the elbow fully supinated and in 90˚ of flexion. Locate the anterolateral aspect of the lateral epicondyle (facet of the lateral epicondyle, where the ECRB inserts, the most common site of pain in patients with LET), and identify the area of tenderness. Apply TFM with the side of the thumb tip, applying the pressure in a posterior direction on the teno-osseous junction. Maintain this pressure while imparting TFM in a direction towards your fingers, which should be positioned on the other side of the elbow for counter pressure. TFM is applied for 10 minutes after the numbing effect has been achieved, to prepare the tendon for Mill's manipulation [4,5]. Mill's manipulation for LET should be conducted as follows [4,5]. Position the patient on a chair with a backrest and stand behind the patient. Support the patient's arm under the crook of the elbow with the shoulder joint abducted to 90˚ and medially rotated. The forearm will automatically fall into pronation. Place the thumb of your other hand in the web space between the patient's thumb and index finger and fully flex the patient's wrist and pronate the forearm. Move the hand supporting the crook of the elbow on to the posterior surface of the elbow joint and, while maintaining full wrist flexion and pronation, extend the patient's elbow until you feel that all the slack has been taken up in the tendon. Step sideways to stand behind the patient's head, taking care to prevent the patient from leaning away either forwards or sideways, which would reduce the tension on the tendon. Apply a minimal amplitude, high velocity thrust by simultaneously side flexing your body away from your arms and pushing smartly downwards with the hand over the patient's elbow. This man oeuvre is conducted once only at each treatment session because it is not a comfortable procedure for the patient, and the effects of treatment often become fully apparent over the following few days [4,5].

4. CSWD was used in the present trial. However, there is growing evidence to suggest that over the past two decades, the pulsed shortwave diathermy (PSWD) may have surpassed CSWD as the delivery mode of choice. A possible explanation for this shift may be that the application of PSWD, associated with less stray radiation, is safer for the operator [6]. Another likely reason the use of PSWD is on the increase is because a much greater number of clinical trials have been published over the past years showing that low-wattage PSWD can induce a significant deep-heating response in human soft tissues [3].

5. The authors did not describe the exercise program in detailed and the patients did not follow an update exercise program. Rehabilitation of tendinopathies such as LET is changing and now eccentric training is not the only exercise option. Malliaras and his colleagues (2013) [7] concluded that clinicians should consider eccentric-concentric loading alongside or instead of eccentric loading. Martinez-Silvestrini et al. (2005) [8] stated that, unlike Achilles tendinopathy, LET is often related to forceful grip activities requiring isometric contraction, which would be more beneficial than eccentric contraction in LET. Recently, isometric exercises have been recommended to reduce and manage tendon pain increasing the strength at the angle of contraction without producing inflammatory signs [9]. The exercise program in LET should include exercises not only for ECRB strengthening but also for supinator, rotator cuff and scapular muscles strengthening [10,11]. Moreover, LET patients have also reduced proprioception [12]. Techniques to improve the reduced proprioception is also recommended. Finally, tendon neuroplastic training (TNT) is needed combining isometric or isotonic strength training with an externally-paced audio or visual cue [13].

A debate on the above topics is most welcome as existing aspects may contribute to misunderstanding and inappropriate treatment.

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