

Comments on “Efficacy of diadynamic currents in the treatment of musculoskeletal pain: a systematic review”

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The published study represents the first systematic review of diadynamic currents (DDCs) within the field of electrotherapy [1]. This research is expected to yield valuable insights into the significance of DDC in clinical contexts. To enhance the review, it is suggested to incorporate a statistical analysis that groups the studies in relation to the variable post-treatment pain intensity as the main outcome to determine the pooled effect.

A meta-analysis was conducted using data from the visual analogue scale (VAS) and numeric pain rating scale (NPRS), which are both standard pain assessment tools [2]. Given the substantial heterogeneity across the randomised controlled trials (RCTs), the Dersimonian-Laird random-effects method was applied [3]. Notably, most studies compared DDC with transcutaneous nerve stimulation (TENS) [1].

Figure 1 showed the meta-analysis with a pooled effect in terms of a mean difference of -0.83 cm (95% CI: -1.9,-0.2:

$p = 0.12$) for visual analogue scale (VAS) and -0.78 points (95% CI: -1.2,-0.4; $p < 0.01$) for the numeric pain rating score (NPRS), which was statistically significant only for NPRS. Furthermore, in both of Gomes et al.’ study, the combination of DDC and manual therapy reduced pain by 53% [4], while in Dibai-Filho et al.’s study, this combination achieved a 49% decrease [5], which represents a clinically minimally important change (MCID) [6].

Even though some RCTs have shown that DDCs are better at reducing pain than TENS, the overall effect suggests that this is still not clear when comparing the two scales evaluated.

Hence, the evidence does not definitively establish DDCs as superior to TENS. This suggests that DDCs are a viable clinical alternative on par with TENS for musculoskeletal pain. The choice between these approaches may hinge on resource availability or the individual pain-modulating mechanism preferences.

Figure 1A. Pain intensity at rest (VAS)

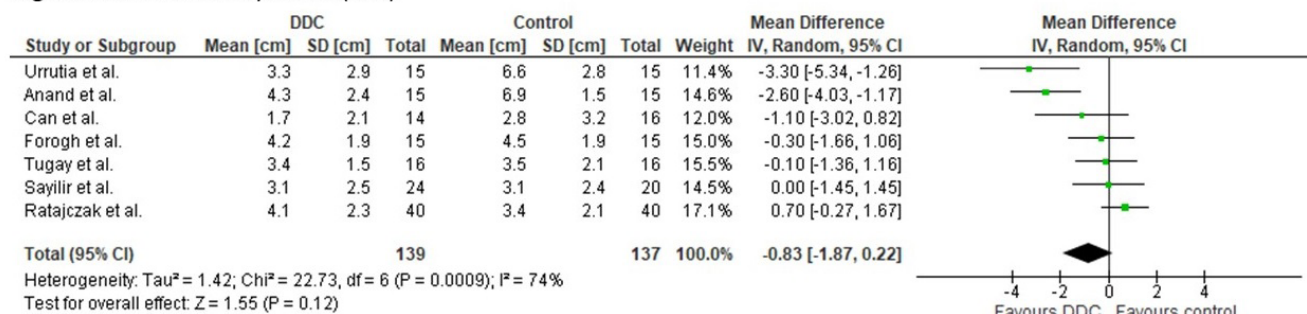
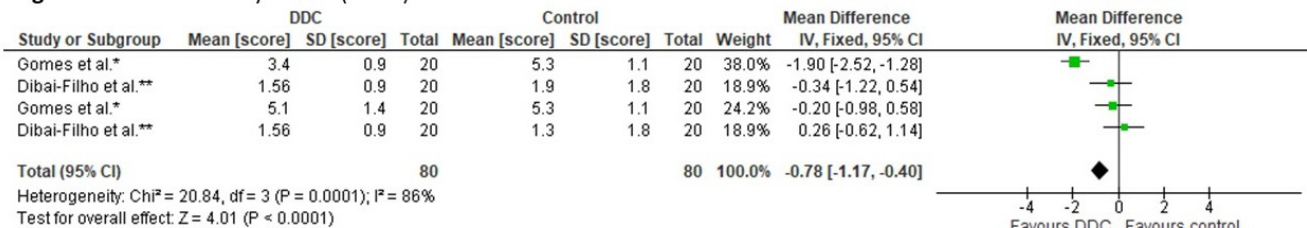


Figure 1B. Pain intensity at rest (NPRS)



* The Gomes study underwent a dual analysis, comparing DDC with manual therapy and DDC plus manual therapy against isolated manual therapy.

** Dibai-Filho’s study underwent a dual analysis, comparing DDC plus manual therapy with isolated manual therapy and DDC plus manual therapy against the addition of therapeutic ultrasound to manual therapy.

Figure 1. Forest plots for pain intensity at rest for VAS and NPRS

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Conflict of interest

The author states no conflict of interest.

References

1. Ortiz HA de la B, Cofré C, López C, Montecinos I. Efficacy of diadynamic currents in the treatment of musculoskeletal pain: a systematic review. *Physiother Quart*. 2023;31(3):1–19; doi: 10.5114/pq.2023.117021.
2. Chiarotto A, Maxwell LJ, Ostelo RW, Boers M, Tugwell P, Terwee CB. Measurement properties of visual analogue scale, numeric rating scale, and pain severity subscale of the brief pain inventory in patients with low back pain: a systematic review. *J Pain*. 2019;20(3):245–263; doi: 10.1016/j.jpain.2018.07.009.
3. DerSimonian R, Laird N. Meta-analysis in clinical trials revisited. *Contemp Clin Trials*. 2015;45(Pt A):139–145; doi: 10.1016/j.cct.2015.09.002.
4. Gomes CAF, Dibai-Filho AV, Politti F, Gonzalez TO, Biasotto-Gonzalez DA. Combined use of diadynamic currents and manual therapy on myofascial trigger points in patients with shoulder impingement syndrome: a randomized controlled trial. *J Manipulative Physiol Ther*. 2018;41(6):475–482; doi: 10.1016/j.jmpt.2017.10.017.
5. Dibai-Filho AV, de Oliveira AK, Girasol CE, Dias FRC, Guirro RRJ. Additional effect of static ultrasound and diadynamic currents on myofascial trigger points in a manual therapy program for patients with chronic neck pain: a randomized clinical trial. *Am J Phys Med Rehabil*. 2017; 96(4):243–252; doi: 10.1097/PHM.0000000000000595.
6. Salaffi F, Stancati A, Silvestri CA, Ciapetti A, Grassi W. Minimal clinically important changes in chronic musculoskeletal pain intensity measured on a numerical rating scale. *Eur J Pain Lond Engl*. 2004;8(4):283–291; doi: 10.1016/j.ejpain.2003.09.004.