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Evaluation of immediate efficacy of transcutaneous electrical nerve stimulation (tens) in individuals with chronic migraine: a randomized clinical trial

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Introduction

Migraine is a primary headache disorder considered chronic when it occurs for more than 15 days per month. Many resort to medications, which often have contraindications and adverse effects. Therefore, to investigating alternative treatments, such as transcutaneous electrical nerve stimulation (TENS), a non-pharmacological analgesic method, is necessary. Clinical trials have shown TENS to be well-tolerated and safe for migraine patients, and meta-analyses have indicated that it reduces the number of headache days. However, most studies evaluate the long-term efficacy of TENS, lacking information on its short-term effects.

Objective

To analyze whether TENS provides benefits in individuals with chronic migraine immediately after a single application.

Methods

Randomized, double-blind, placebo-controlled clinical trial. Eligible patients were randomly assigned to two groups: active TENS and placebo TENS. Individuals received therapy for 30 minutes, with a frequency of 4 Hz or 100 Hz, pulse duration of 100 µs, and electrodes placed on the frontal and bilateral upper trapezius muscles. Outcomes: pressure pain threshold (algometry), the range of cervical movement (inclinometry), and the intensity of pain during headache attacks in participants who presented them on the day of current application (Numeric Pain Scale). Furthermore, the intensity of pain during movements of the cervical region was measured in participants who reported pain during flexion, extension, bending to the right and left, and rotation to the right and left on the day of application (Numeric Pain Scale). All variables were evaluated before and after treatment.

Results

Thirty-five patients were included in the study, with 18 in the active TENS group and 17 in the placebo TENS group. There were no significant differences between the groups regarding pressure pain threshold or cervical range of motion. Not all participants were experiencing a headache crisis or cervical movement pain. Additionally, there were no significant differences between the groups in headache pain intensity or cervical movement pain.

Conclusion

Therefore, a single application of TENS at a mixed frequency does not provide immediate benefits for relieving pain in individuals with chronic migraine.