

The Effects of Transcutaneous Electrical Nerve Stimulation (TENS) on Spasticity of Patients with Upper Motor Neuron Lesion: Systematic Review and Meta-analysis of Randomized Clinical Trials.

Miriam Allein Zago Marcolino¹, Melina Hauck¹, Jociane Schardong¹, Cinara Stein¹ and Rodrigo Della M^éa Plentz¹.

1. Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA)

*e-mail: roplentz@yahoo.com.br

Background: The upper motor neuron lesion (UMNL) occurs in many pathologies and is associated with the development of the spasticity. The studies that evaluated the effects of the transcutaneous electrical nerve stimulation (TENS) in the decreasing of spasticity present controversial results. In this way, our aim was to review the randomized clinical trials (RCT) which evaluated the effects of the TENS applied isolated or associated with another therapy in spasticity caused by UMNL. **Method:** The search was made at MEDLINE, PEDro and Cochrane CENTRAL Databases (April/2015) and in the references of the selected papers. We included the RCT with TENS application in patients with stroke, cerebral palsy (CP), spinal cord injury and multiple sclerosis. The primary outcome was spasticity and the second was range of motion. The meta-analysis was conducted with the studies which assessed the spasticity by the same method and the sensitivity analyzes was made in each population. **Results:** In the search, we identified 4398 articles and included 13 RCT on systematic review providing data of 433 subjects. The TENS applied isolated or associated with another therapy reduces the spasticity of UMNL patients (-0.58 [95%CI, -0.90, -0.25; I2 92%] p=0.0005), specifically with stroke (-0.49 [95%CI, -0.74, -0.25; I2 50%] p<0.0001), but with no results in CP (-0.77 [95%CI, -1.62, 0.08; I2 92%] p=0.08). The TENS effects in patients with spinal cord injury and multiple sclerosis, and over range of motion, remain nuclear. **Conclusion:** The TENS applied isolated or associated with another therapy is a treatment option for spasticity of UMNL patients, specifically in stroke, but its effect on the other pathologies and range of motion still requires investigation.

Descritores: Physical Therapy, Electrical Stimulation, Review Systematic