

THE EFFECT OF TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION AT HEGU ACUPUNCTURE POINT ON SPINAL MOTOR NEURON EXCITABILITY IN PEOPLE WITHOUT KNOWN NEUROMUSCULAR DISEASES

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ABSTRACT

Purpose: The main purpose of this study is to determine the effect of transcutaneous electrical stimulation (TENS) at Hegu acupuncture point on H-reflex. **Subjects:** This study was performed on 40 volunteer subjects without known neuromuscular diseases, with an age range from 22 to 51 years old. Methods: Subjects were randomly divided into Five groups: control (C), TENS stimulation at sensory threshold at Hegu acupoint (STAP) and 1.5 times sensory threshold at Hegu (1.5 STAP), TENS at sensory threshold at non acupoint (STNAP) and 1.5 sensory threshold at non acupoint (1.5 STNAP). TENS was administered for 15 minutes. Stimulation intensity varied according to group assignment. H-reflexes were recorded before and at 0, 5 and 10 minutes after TENS Stimulation. **Results:** There was no statistical significance among any of the variables. The mean difference comparing the threshold variable to the control had the highest degree of significance (p=.70). **Conclusion:** Intensity variances between sensory level and 1.5x sensory level in both acupoint and nonacupoint sites were noted. Stimulation to nonacupoint sites lead to a higher H-reflex than the baseline, while a decrease in H-reflex was seen following stimulation to acupoint sites. Intensity at sensory level increased the H-reflex, while intensity at 1.5x sensory level decreased the H-reflex. At this time no definite conclusions can be made because the small sample size rendered our results to be statistically insignificant.

Keywords: Acupuncture, Hegu, TENS stimulation, Hoffmann reflex

INTRODUCTION

Muscle spasticity is a common indicator of patients with upper motor neuron syndrome (eg, a lesion of the central nervous system stroke, spinal cord lesion) often display spasticity (1-7), the characteristic of muscle spasticity is velocity dependent and caused by hyperexcitability of the stretch reflex (8). Muscle spasticity can cause muscle stiffness, pain and limited joint motion and disturbed sleep. Severe spasticity may lead to joint contractures, which can severely restrict the patient's care and rehabilitation (9). Therefore, an effective treatment is important to increase the motor function, facilitate self-care and decrease painful, harmful effects of spastic contractions. Therapeutic treatments, including pharmacological agents and physical therapy, have been used to ameliorate spasticity. However, pharmacologic reduction of spasticity is often associated with severe side effects including sedation,