

Abstract

Electrical stimulation by coupled impulses according to Hufschmidt was created with the primary goal of reducing spasticity. However, there are currently few studies that confirm or refute the effect of this type of electrical stimulation in reducing spasticity. The aim of this diploma thesis was to determine the effect of electrostimulation according to Hufschmidt on the reduction of biceps brachii spasticity in patients after stroke. In addition, the effect of electrical stimulation on increasing the active range of movement of the antagonist of the examined muscle and on the active function of the spastic limb was investigated. For these purposes, a non-randomized controlled pilot study was created, which involved a total of 16 probands, 8 - in the therapeutic group, 8 - in the control group. Five-step clinical assessment in spastic paresis according to Gracies were used for the examination. In the therapeutic group, electrostimulation took place 3 times a week, a total of 8 times. The intragroup difference was evaluated using the Friedman and Wilcoxon paired tests, the intergroup difference was subsequently evaluated using the Mann-Whitney U test. The significance level $p = 0.05$ applies to all tests. The measured values show that Hufschmidt's electrical stimulation has a positive effect on reducing spasticity, increasing the active range and active limb function, as measured by the MFS test. However, there is no statistically significant difference in this study compared to the control group. In addition, when examining the long-term effect of electrostimulation after 1 month, a decrease was observed in all measured values compared to the last stimulation, and no statistically significant difference was observed compared to the first examination.