

Original Paper

Effect of low frequency repetitive transcranial magnetic stimulation to improve motor function and grip force of upper limb in hemiplegic patients

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Abstract

Background and Objective: Disability of upper extremity from stroke are often permanent. Despite numerous functional problems, there is less attention to upper extremity disability than lower limbs. Some new methods of treatment focuses on using the magnetic stimulation as a means brain currents to produce therapeutic effects. This study was done to evaluate the effect of low frequency repetitive transcranial magnetic stimulation to improve motor function and grip force of upper limb in hemiplegic patients.

Materials and Methods: This clinical trial study was done on 12 stroke hemiplegic patients in Firoozgar hospital in Tehran, Iran during 2009-10. Patients in group I, received rehabilitation program with placebo magnetic stimulation, and patients in group II, received magnetic stimulation with routine rehabilitation program for 10 session, 3 times in week. Pre and post were evaluated by Barthel and Fugl-Meyer indices and dynamometer. Data were analyzed using SPSS-15, Kolmogorov-Smirnov, paired t-test, independent t-test and Wilcoxon signed tests.

Results: According to Barthel and Fugl-Meyer indices both groups I, II showed significant improvement ($P < 0.05$). Using dynamometer, it was demonstrated that grip force of upper limb in group I was not significant but this index in group II was significant after intervention ($P < 0.05$).

Conclusion: This study showed that low frequency repetitive transcranial magnetic stimulation has therapeutic effect on grip force of upper limb.

Keywords: Stroke, Transcranial magnetic stimulation, Routine rehabilitation, Motor function

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