



The effect of Transcranial Direct-Current Stimulation on balance, walking capacity and quality of life in patients with multiple sclerosis

Oral Presentation

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Abstract

Introduction: Multiple sclerosis (MS) is the most common inflammatory and demyelinating disease of the central nervous system (CNS) which often results in disability in young adults[1]. MS is a complex and clinically heterogeneous disease of the CNS with different neurological deficits related to the location and extent of neurologic lesions. Impairment of the sensory system, pyramidal tract dysfunction, and gait abnormality are commonly seen in MS. Unilateral weakness as a common clinical feature of dysfunction in lower limb muscles may cause walking problems that require walking aids within 15 years of disease onset in individuals with MS [2].

Methods: In this study, 19 female patients with EDSS less than 4.5 with mean age of 37.44 ± 7.891 years were selected purposefully and then randomly divided into two groups of transcranial direct-current stimulation and sham were divided. At first, variables such as balance, walking capacity and quality of life were measured and recorded as pretest. Subjects in the transcranial direct-current stimulation group in addition to their usual drug therapy received a five-session course of direct brain electrical stimulation. After the end of the transcranial direct-current stimulation of the brain, posttest was taken from each of the two group.

Results: The present study showed that anodal tDCS over the motor area is a safe technique with minimal side effects and no adverse effects that can be used in patients with MS. Our study is the first randomized multi-session sham-controlled trial that confirms the tDCS effect on balance, mobility, and walking. The therapeutic effects of tDCS on balance, functional mobility, and walking endurance appear to be a promising tool for neurorehabilitation in patients with MS.

Conclusion: Our findings indicate that five sessions of tDCS over the CZ improve balance, functional mobility, and walking endurance in patients with MS. But improvement in the patients' QOL.

Keywords

Multiple sclerosis; Transcranial Direct-Current Stimulation; Balance; Walking capacity; quality of life

References:

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