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学位論文題名	Effects of transcranial direct current stimulation over the supplementary motor area body weight-supported treadmill gait training in hemiparetic patients after stroke. (脳卒中後片麻痺患者に対する補足運動野に対する経頭蓋直流電気刺激と部分免荷トレッドミル歩行練習の効果)
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【論文の内容の要旨】

Transcranial direct current stimulation (tDCS) is used in a variety of disorders after stroke including upper limb motor dysfunctions, hemispatial neglect, aphasia, and apraxia, and its effectiveness has been demonstrated. Although gait ability is important for daily living, there were few reports of the use of tDCS to improve balance and gait ability. The supplementary motor area (SMA) was reported to play a potentially important role in balance recovery after stroke. We aimed to investigate the effect of combined therapy body weight-supported treadmill training (BWSTT) and tDCS on gait function recovery of stroke patients. Thirty stroke inpatients participated in this study. The two BWSTT periods of 1 weeks each, with real tDCS (anode: front of Cz, cathode:inion, 1 mA, 20 min) on SMA and sham stimulation, were randomized in a double-blind crossover design. We measured the time required for the 10 m Walk Test (10MWT) and Timed Up and Go (TUG) test before and after each period. We found that the real tDCS with BWSTT significantly improved gait speed (10MWT) and applicative walking ability (TUG), compared with BWSTT + sham stimulation periods ($p < 0.05$). Our findings demonstrated the feasibility and efficacy of tDCS in gait training after stroke. The facilitative effects of tDCS on SMA possibly improved postural control during

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BWSTT. The results indicated the implications for the use of tDCS in balance and gait training rehabilitation after stroke.