THE EFFECT OF TRANSCRANIAL DIRECT CURRENT STIMULATION IN ADDITION TO GRADED MOTOR IMAGERY FOR TREATMENT OF COMPLEX REGIONAL PAIN SYNDROME: A RANDOMIZED PROOF OF CONCEPT

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INTRODUCTION / AIM

According to the latest practice guidelines for the management of complex regional pain syndrome (CRPS), graded motor imagery (GMI) has the highest level of scientific evidence, but the effect size remains modest. A new technique of non-invasive stimulation, transcranial direct current stimulation (tDCS), could increase the effectiveness of GMI.

To investigate the efficacy of the combination of the GMI+tDCS compared to the GMI+tDCS placebo in the treatment of CRPS type I.

METHODS

Participants were randomly assign to the experimental (GMI+tDCS) or control (GMI + sham tDCS) group. The GMI treatments were performed over 6 weeks using well-established procedures. The anodal tDCS was applied for 5 consecutive days during the first 2 weeks and once a week during the 4 following weeks over the motor cortex.

The outcomes were assessed after 6 weeks of treatment (T1) and 1-month post treatment (T2) using the Brief Pain Inventory, pain diary, 12-Items Short Form Health Survey, Pain Catastrophizing Scale, Tampa Scale of Kinesiophobia, State-Trait Inventory, and Beck Depression Inventory-II.

RESULTS

Twenty-two patients (n=11/group) completed the study. We observed that GMI+tDCS induced a statistically (p=0.046) and clinically (p=0.003) significant reduction in the present pain intensity, kinesiophobia (p=0.012), pain catastrophizing (p=0.049) and state anxiety (p=0.046), compared to the placebo group. However, the effects were not maintained at T2. We noted no serious adverse effects during treatment.

DISCUSSION / CONCLUSIONS

The efficacy shown to reduce short-term pain severity of this combination GMI+tDCS is the first milestone and subsequent studies are necessary to confirm its relevance.

OTHER AUTHORS

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