Article: EPA-1749
Topic: P31 - Schizophrenia

TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) IMPROVES NEGATIVE SYMPTOMS IN SCHIZOPHRENIA: A DOUBLE-BLIND, RANDOMIZED, CLINICAL TRIAL.

U. Palm[1], D. Keeser[2], F. Kaymakanova[1], I. Unger[1], M.J. Kupka[3], J. Blautzik[3], A. Hasan[1], N. Sarubin[1], B. Ertl-Wagner[3], F. Padberg[1]

[1]Dept. of Psychiatry and Psychotherapy, Ludwig-Maximilians-University, München, Germany ; [2]Dept. of Psychiatry and Psychotherapy and Institute for Clinical Radiology, Ludwig-Maximilians-University, München, Germany ; [3]Institute for Clinical Radiology, Ludwig-Maximilians-University, München, Germany

Introduction:

Transcranial direct current stimulation (tDCS) is currently investigated for the treatmentof various neuropsychiatric disorders. Neuroplastic effects may be achieved by prolonged neuronal depolarization/hyperpolarization.

Objectives:

Schizophrenia studies revealed a neuroplasticity deficit of cortical areas. Promising results of anodal/cathodal tDCS for acute and chronic symptoms were shown in one randomized clinical trial and several case reports.

Aims:

To improve negative symptoms, anodal tDCS over the left dorsolateral prefrontal cortex (DLPFC) and cathodal tDCS above the supraorbital region was used. Clinical scores were assessed with Positive and Negative Symptoms Scale (PANSS) and Scale for the Assessment of Negative Symptoms (SANS).

Methods:

20 patients with predominant negative symptoms and stable medication (>3 weeks) were randomized to active or sham group. Anode was placed over the left DLPFC, cathode over right orbit. 2 mA tDCS was delivered 10 times within weeks 1 and 2. Concomitant medication was continued. Functional connectivity MRI (fcMRI) was performed before and after tDCS.

Results:

Post-hoc test (least significant difference, factor 'group') showed significant PANSS amelioration in the active group ($p = 0.014$) for the follow-up, two weeks after the end of stimulation. SANS revealed significant improvement in the active group in week 1 ($p = 0.047$), week 2 ($p = 0.005$), and follow-up ($p = 0.011$). In the active group, fcMRI showed a significant deactivated cluster (corrected $p< 0.05$) in the anatomical regions of ncl. accumbens, subgenual cortex and striatum.

Conclusions:

tDCS is a promising tool to improve various schizophrenic symptoms that are otherwise often difficult to treat.

https://doi.org/10.1016/S0924-9338(14)78880-7 Published online by Cambridge University Press