Positive effects of transcranial direct current stimulation in adult patients with attention-deficit/hyperactivity disorder – a pilot randomized controlled study

Carolina Tosetto. Cachoeira, Douglas Teixeira Leffa, Suzana Doneda Mittelstadt, Lorenna Sena Teixeira Mendes, Andre R Brunoni, Jairo Vinicius Pinto, Vitor Blazius, Vitoria Machado, Claiton Henrique Dotto Bau, Luis Augusto Rohde, Eugenio Horacio Grevet, Pedro Schestatsky

PII: S0165-1781(16)30922-2
DOI: http://dx.doi.org/10.1016/j.psychres.2016.11.009
Reference: PSY10094

To appear in: Psychiatry Research

Received date: 27 May 2016
Revised date: 2 September 2016
Accepted date: 6 November 2016

Cite this article as: Carolina Tosetto. Cachoeira, Douglas Teixeira Leffa, Suzana Doneda Mittelstadt, Lorenna Sena Teixeira Mendes, Andre R Brunoni, Jairo Vinicius Pinto, Vitor Blazius, Vitoria Machado, Claiton Henrique Dotto Bau, Luis Augusto Rohde, Eugenio Horacio Grevet and Pedro Schestatsky, Positive effects of transcranial direct current stimulation in adult patients with attention deficit/hyperactivity disorder – a pilot randomized controlled study, Psychiatry Research, http://dx.doi.org/10.1016/j.psychres.2016.11.009

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.
Positive effects of transcranial direct current stimulation in adult patients with attention-deficit/hyperactivity disorder – a pilot randomized controlled study

Carolina Tosetto Cachoeira\textsuperscript{a,1,*}, Douglas Teixeira Leffa\textsuperscript{b,1}, Suzana Doneda Mittelstadt\textsuperscript{a}, Lorenna Sena Teixeira Mendes\textsuperscript{a}, Andre R Brunoni\textsuperscript{c,d}, Jairo Vinicius Pinto\textsuperscript{f}, Vítor Blazius\textsuperscript{f}, Vitoria Machado\textsuperscript{f}, Claiton Henrique Dotto Bau\textsuperscript{a,e,g}, Luis Augusto Rohde\textsuperscript{a,f,g,h}, Eugenio Horacio Greve\textsuperscript{a,f,g}, Pedro Schestatsky\textsuperscript{a,b,i}

\textsuperscript{a}Post-Graduation Program of Psychiatry, Universidade Federal do Rio Grande do Sul, Brazil
\textsuperscript{b}Post-Graduation Program of Medical Sciences, Universidade Federal do Rio Grande do Sul, Brazil
\textsuperscript{c}Interdisciplinary Center for Applied Neuromodulation (CINA), University Hospital, University of São Paulo, São Paulo, Brazil.
\textsuperscript{d}Service of Interdisciplinary Neuromodulation (SIN), Laboratory of Neurosciences (LIM-27), Department and Institute of Psychiatry, University of São Paulo, São Paulo, Brazil.
\textsuperscript{e}Department of Genetics, Universidade Federal do Rio Grande do Sul, Brazil
\textsuperscript{f}Department of Psychiatry, Universidade Federal do Rio Grande do Sul, Brazil
\textsuperscript{g}ADHD Outpatient Program, Hospital de Clínicas de Porto Alegre, Brazil
\textsuperscript{h}National Institute of Developmental Psychiatry for Children and Adolescents, Brazil
\textsuperscript{i}Service of Neurology, Hospital Moinhos de Vento, Porto Alegre, Brazil

*Corresponding author: Carolina Tosetto Cachoeira, MD. Universidade Federal do Rio Grande do Sul, Programa de Pós- Graduação em Psiquiatria e Ciências do Comportamento, Rua Ramiro Barcelos, 2400 – 2º andar – Porto Alegre/Rs – Brazil. CEP: 90035-003. Fone: (55 51) 92185059 / (55 51) 3308 5624. E-mail: carocachoeira@gmail.com

Abstract

Almost 30\% of adult patients with attention-deficit/hyperactivity disorder (ADHD) do not respond or tolerate standard pharmacological interventions. Few clinical investigations addressed the efficacy and tolerability of transcranial direct current stimulation (tDCS), a non-invasive neuromodulatory technique, in the disorder. We performed a double-blind, sham-controlled randomized clinical trial in 17 patients with ADHD. The set up for tDCS was the following: 2 mA/20 min/day for 5 days with the anode over the right dorsolateral prefrontal cortex and cathode over the left dorsolateral prefrontal cortex. ADHD symptoms were measured by the Adult ADHD Self-Report Scale (ASRS) and impairment with the Sheehan Disability Scale (SDS) in four different time points after stimulation. Participants achieved significant lower ASRS inattention and SDS scores after active tDCS in comparison with sham stimulation group. In addition, we detected a trend for a lower ASRS total score in the active tDCS group. Follow up data analysis revealed a positive interaction between time and treatment in both ASRS inattention, SDS and ASRS total scores. Short-term application of tDCS in adult patients with ADHD improved their symptoms, and this improvement persisted after the end of the stimulation. Future studies with larger sample sizes are needed.

\textsuperscript{1} These authors contributed equally to this work
دریافت فوری
متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات