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Transcranial Direct Current Stimulation (tDCS) as a substitutive treatment for schizophrenia in antipsychotic-induced hepatitis: a case study

Estimulação transcraniana por corrente contínua (ETCC) como tratamento substitutivo em paciente esquizofrênico com hepatite induzida por antipsicótico: um estudo de caso

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Dear editor,

Schizophrenia is a common psychiatric disorder with an overall prevalence of 1-1.5% in general population and a chronic course throughout life[(1)] . These patients have generally limited capacity to perform daily activities as well as lower quality of life and greater incidence of comorbidities such as depressive symptoms, substance-related disorders, suicidal behavior and increased cardiovascular risk[(2)] . About 25% of patients with schizophrenia do not respond to conventional drug treatment[(3)] and, for responders, adverse effects are common and often lead to treatment discontinuation. These issues often jeopardize optimal treatment and consequently, lead to clinical deterioration. Moreover, drug-induced hepatitis has been anedoctically reported in literature with both typical and atypical antipsychotic drugs - for instance, risperidone is known to potentially cause drug-induced hepatitis in 0.01%-0.1% of patients[(4)]. The present case study reports tDCS as an interesting treatment strategy for patients with major clinical limitations to medication use.

The case is a 22-year old patient, Mr "M" who was admitted in our service with severe psychosis, presenting auditory hallucinations, persecutory delusions and disorganized speech. Two weeks earlier, Mr. M presented risperidone-induced hepatitis, which had been introduced months earlier for the treatment of his condition. Given the impossibility to increase risperidone dose due to the hepatitis, risperidone was substituted by haloperidol given its presumed safety regarding hepatic side effects. However, there was a severe worsening of hepatic functioning as assessed by complementary laboratory tests and clinical intensification of jaundice. This unfavorable evolution leads to immediate medication discontinuation. Given clinical limitation to undergo any medication protocol, and the availability of tDCS in our center, the family and the patient consented in performing tDCS sessions to ammeliorate the psychotic symptoms of Mr. M. After inform consent was given by the patient's mother, the protocol started as follows: 15 tDCS sessions were performed (2mA / 30 minutes per day) in consecutive weekdays.

The cathode was positioned over the temporoparietal area and the anode over the left dorsolateral prefrontal cortex (F3, according to the EEG 10/20 system), as done in previous reports by Brunelin et al. and others[(5)] and our group. After completing the intervention protocol the patient presented clinical improvement per the Positive and Negative Syndrome Scale (PANSS) for general, positive and negative symptoms with reduction of 19.5%, 11.9% and 8.3% from baseline, respectively (Figure 1). During one-month follow up, this improvement was maintained in spite of no medications nor tDCS being used. Importantly, his liver function gradually returned to normal levels.

The present report illustrates a situation in which pharmacological interventions cannot be used due to acute adverse effects to pharmacotherapy. In the pres-

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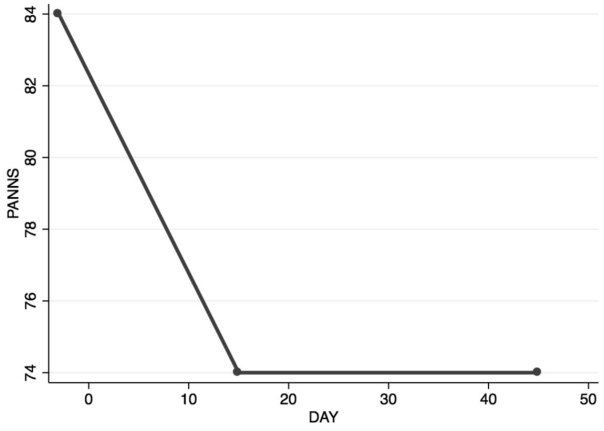

Figure 1 - Psychotic symptoms amelioration over time (as assessed by PANSS – Positive and Negative Symptoms Scale)

ent report, tDCS was shown to be a safe alternative for ameliorating acute psychotic symptoms in a patient with clinical limitation for undergoing pharmacotherapy. Although the effects of tDCS on symptoms' improvement were discrete, we conjecture that this adjuvant therapy avoided worsening of symptoms, since the patient become severely ill after antipsychotic discontinuation, and in such cases the prognosis is of rapid medical deterioration. Therefore, tDCS might have not only avoided clinical worsening but also improved some symptoms.

To conclude, although instigating, the present results are limited to the observation of a single case report. Nevertheless, this case illustrates the important advantage of tDCS of being a non-invasive treatment strategy virtually absent of side effects that can be a suitable option for patients that are temporarily impeded of using pharmacotherapy.

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