Author's response to reviews

Title: Analgesic effect of cathodal transcranial current stimulation over right dorsolateral prefrontal cortex in subjects with muscular temporomandibular disorders: Study protocol for a randomized controlled trial

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Author's response to reviews: see over
Dear TRIALS Referees

We carefully considered your comments. Herein, we explain how we revised the paper based on those comments and recommendations.

Major compulsory revisions:

After re-reading the manuscript with the reviewers’ comments in mind, we realized that we made some mistakes or forgot to modify some criteria on Clinicaltrials.gov.

After we submitted our protocol to Clinicaltrials.gov we figured out that age criteria and VAS value collect period had to be modified. So, we asked the Ethics Committee to change this and they approved the new age group VAS collects period. However, we forgot to make the changes on Clinicaltrials.gov. We apologize about that and would like to inform that we revised our registered protocol on Clinicaltrials.gov and modified these discrepancies.

Regard STAI (state-trait anxiety inventory) we made a mistake while writing the article.

The actual inclusion criteria version is:
“To be included in this study, subjects must: (1) provide informed consent to participate in the study; (2) both males and females between 18-60 years old; (3) have a diagnosis of muscular pain TMD according to IA and IB, axis I RDC/TMD; (4) have a visual analogic scale (VAS) score of 4 or greater present for six months or longer; (5) have a State-Trait Anxiety Inventory (STAI) score more than 42.”

Before we did not use the guidelines for Protocol Study. Instead of that we guided our manuscript based on CONSORT for Clinical Trails. We have adjusted the manuscript to SPIRIT statement.

After re-reading the manuscript with yours comments in mind, we agree with the suggestion that we had to edit our manuscript. We did an extensive review. We hope it sounds good now.

We did some changes after reviewed our statistic method. We added new tests. We have removed the reference about homeopathy to treat TMD.
We added two articles that support our decision about washout to avoid carryover effects. Now you can see this on “Control Group” item:
“As a crossover study, each subject will be his/her own control. Our choice is supported by literature. Some studies evaluating motor cortical excitability by transcranial magnetism stimulation (TMS) found that a single tDCS session is able to modify cortical excitability for up to 1.5 hour after the end of stimulation. So, carryover effect does not seem to be an issue (22, 23). Furthermore, as one of our outcomes needs EEG analyses, and individual characteristics are crucial (24) we decided to use this design. Furthermore, as one of our outcomes needs EEG analyses (change from baseline in EEG), and individual characteristics are crucial (24) we decided to use this design.”

We added a supporting reference about thalamus as an important factor on chronic pain:
“…The thalamus seems to be an important part of these networks. A study that evaluated the role of the thalamic ventral caudal nucleus in nociception suggested a decrease of thalamic pain control output capacity in chronic pain patients (14)…”

We also added an article that investigated the effects of DLPFC tDCS stimulation on sensory and pain thresholds. So, it can allow us to hypothesize that tDCS stimulation over DLPFC in addition to decrease anxiety/depression also could decrease pain level.

“A randomised, double-blind, sham-control study suggested motor cortex excitability effects after DLPFC tDCS stimulation. The authors also observed a significant increase of sensory and pain thresholds after tDCS stimulation over this area (17).

We have changed “cinesiotherapy” to “physiotherapy”.

We used spellcheck software and corrected all spelling errors.

We re-wrote the intervention groups session. We changed the text and we explained each group separately as you can see below:

“Groups

Intervention A
This intervention will involve 1mA tDCS, with cathodal over the right DLPFC (F4). The anode will be placed over the contralateral supraorbital area (Fp1). Stimulation will be applied during 20 minutes.

Intervention B
This intervention will use the same parameters as Intervention A but with 2mA.

Intervention C
This will be the sham intervention. Stimulation electrodes will be placed at the same areas of interventions A and B but current will be used only for the first 30 seconds and then automatically reduced gradually until zero in 20 seconds. This method has been shown to be effective in previous studies (21).”

We also sent a file with answers addressed to each one of you.

Respectfully yours,
Rivail Almeida Brandão Filho