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Topic: AS09 Motor and Sensory Systems

ASSESSING IMPROVEMENTS OF MOTOR FUNCTION IN STROKE PATIENTS WITH DUAL-SITE HIGH DENSITY TDCS ON PREFRONTAL AND CEREBELLAR SYSTEMS: A DOUBLE-BLIND RANDOMIZED CLINICAL TRIAL.

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For nearly a decade, Transcranial direct current stimulation (tDCS) has shown promise modulating injured motor cortical regions and facilitating motor restoration in stroke patients. Nonetheless inconsistent clinical outcomes highlight the need for novel strategies focused in the multifocal manipulation of networks bearing on motor execution. Here we explored the modulation potential on upper limb motor recovery of monofocal vs. multifocal anodal tDCS targeting the dorsolateral prefrontal (DLPFC) cortex and/or the anterior cerebellum (CEREB). To this end a cohort of 80 chronic stroke subjects will be randomized to the following 4 stimulation conditions (n=20 each): 1) anodal tDCS on the ipsilesional DLPFC; 2) anodal tDCS on the contralesional CEREB; 3) Combined anodal tDCS on the ipsilesional DLPFC + contralesional CEREB; 4) Sham tDCS stimulation. Patients are all stimulated for 20 minutes, 5 days a week for 2 weeks at intensities modelled to induce 0.25V/m at the grey matter on the DLPFC and the anterior CEREB. To date, the clinical trial has been completed in n=15 stroke patients. Preliminary analyses (~n=4 participants/group) suggest superior after-treatment improvements in the FM-UE scale in the patients treated with combined DLPFC + CEREB stimulation (Group 3, +5 ± 14,9) than in other stimulation modalities such Group 1 (DLPFC tDCS, +4 ± 30,5), Group 2 tDCS (CEREB, -1 ± 5,8) and Group 4 (SHAM tDCS, -1 ± 17,4). Likewise, clinical evaluation of global cognitive abilities (MoCA) denotes performance increases in all groups: DLPFC (Group 1, +2 ± 6,6), DLPFC + CEREB (Group 3, +1 ± 3,5) tDCS, CEREB tDCS (Group 2, +2 ± 1,7) and SHAM tDCS (Group 4, +4 ± 4,6). The difference between the pre- and post- treatment median and the standard deviation is presented. Although still very preliminary, our results support the feasibility of our interventions and tend to emphasize the clinical potential of combined fronto-cerebellar stimulation driving upper-limb motor recovery in stroke patients with motor disabilities.

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CANNABIDIOL HAS THERAPEUTIC POTENTIAL FOR MYOFASCIAL PAIN IN FEMALE AND MALE PARKINSONIAN RATS

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Musculoskeletal orofacial pain is a complex symptom of Parkinson's disease (PD) resulting in stomatognathic system dysfunctions aggravated by the disease's rigidity and postural instability. We tested the effect of cannabidiol (CBD), a non-psychotomimetic constituent of Cannabis sativa, in PD-related myofascial pain. All experimental animal procedures were approved by the local Animal Care and Use Committee of the University of Sao Paulo/Brazil at the Ribeirao Preto Campus (2019.1.421.58.8). Wistar adult female and male rats (7 - 8 weeks / 150 - 200gr) orofacial allodynic and hyperalgesic responses were tested by Von Frey and formalin tests, before and 21 days past the 6-OHDA lesion. The algesic response was tested after masseter muscle injection of CBD (10, 50, 100 µg in 10 µL) or vehicle, female (orofacial allodynia and hyperalgesia). According to the estrous cycle's phases, females presented distinct orofacial nociceptive responses, the estrus phase well-chosen for nociceptive analysis after 6-OHDA lesion (phase with fewer hormone alterations and adequate length). Dopaminergic neuron lesions decreased mechanical and inflammatory nociceptive thresholds in females and males in a higher proportion in females. CBD local treatment reduced the increased orofacial allodynia and hyperalgesia, in males and females. The female rats were more sensitive to the CBD effect considering allodynia, responding to the lowest dose. It was considered a statistical difference when $p < 0.05$. Although females and males respond to the effect of three doses of CBD in the formalin test, males showed a superior reduction in the hyperalgesic response. These results indicate that hemiparkinsonian females in the estrus phase and males answer differently to the different doses of CBD therapy and nociceptive tests. CBD therapy is effective for parkinsonism-induced orofacial nociception. n = 112) and male (n = 99). Males compared to females in all estrous cycles' phases presented reduced

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