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P1.043
PRELIMINARY ANALYSIS OF BDNF IN RESPONSE TO TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS) FOR VETERANS IN TREATMENT FOR CHRONIC PAIN AND MENTAL HEALTH ISSUES
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Abstract
Background: Chronic pain in veterans is related to increased depression, risk for suicide, and risk for problematic opioid use. Chronic pain treatments include medications such as opioids or NSAIDs that have negative side effects and cognitive behavioral therapy with low completion. Additional treatment options are needed. We will present preliminary data from an open trial exploring brain-derived neurotrophic factor (BDNF) response to a safe, non-opioid, self-administered treatment - transcranial direct current stimulation (tDCS) - for chronic pain in veterans completing an intensive outpatient treatment program for mental health concerns. tDCS is a non-invasive, painless brain stimulation treatment. tDCS has been implicated in pain detection and perception and changes in BDNF levels have been related to reductions in pain with tDCS.

Method: To date, 11 veterans with chronic pain in the Emory Healthcare Veterans Program Intensive Outpatient Program (EHVP-IOP) underwent staff-monitored tDCS sessions and collection of blood and saliva to examine BDNF within and across tDCS sessions administered over the 10-day mental health focused IOP (constant current intensity of 2 mA for 20 minutes per daily session 10 daily sessions over two weeks using a Soterix 1x1 tDCS mini-CT Stimulator; Soterix Medical Inc., NY). Medical Pain Assessment was completed across the program. PTSD and depression severity was collected on days 1, 3, 5, 8, 10, and 12.

Results: We have currently enrolled 11 veterans since starting the open trial in March 2022 in the EHVP-IOP plus tDCS program. We will present all available veterans who enroll through mid-November (18 veterans estimated) with BDNF measurements from processed specimens. Results will be presented in the poster, including BDNF association with pain, PTSD, and depression.

Conclusion: Preliminary results from a trial of tDCS for chronic pain in veterans engaged in EHVP-IOP focused on changes in BDNF levels associated with pain will be presented. Implications will be discussed.

Research Category and Technology and Methods
Clinical Research: 9. Transcranial Direct Current Stimulation (tDCS)
Keywords: pain, PTSD, depression, veterans
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Abstract key: PL- Plenary talks; S- Regular symposia oral; FS- Fast-Track symposia oral; OS- On-demand symposia oral; P- Posters

P1.044
MO T E F F E C T S O F I N T E R V E N T I O N W I T H T R A N S C R A N I A L D I R E C T C U R R E N T S T I M U L A T I O N (tDCS) FOR PHYSIOTHERAPY TREATMENT IN CHILDREN WITH CEREBRAL PALSY: RANDOMIZED CLINICAL TRIAL
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Abstract
Children with Cerebral Palsy (CP) may exhibit dysfunctions, including difficulty with gross motor function and impairment in activities of daily living (ADLs). tDCS intervention might improve movement and ADLs. This study was designed as randomized clinical trial with objective to quantify whether the tDCS is improves gross motor function in domain E of the Gross Motor Function Measure (GMFM) compared with sham in children with CP in the Gross Motor Function Classification System (GMFCS) I/II both using physiotherapy. Thirty children, both sexes with a diagnostic of CP. GMFCS I/II, between 8 and 12 years old, walking independent, compression of the commands were included. Control group (CG) and the intervention group (IG) were classified accordingly GMFCS. The GMF domain E, evaluate walking, running, and jumping skills and it will be tested pre/post intervention. The IG will be done in 10 sessions the tDCS with neurorehabilitation 5x/the week, for two weeks. The stimulation of anodic tDCS will be applied in motor cortex primary and cathodic in the supraorbital contralateral for 20 min, with 1mA and 4 second of ramp up and down, concomitant to specific exercises of the GMFM. In the CG, the procedure will be the same but using the sham tDCS. Recent studies show that tDCS have good results in children with CP for balance, gross motor function and gait outcomes. The included population in many studies is heterogeneous. Here, stimulation is being done on children without assistive support, to understand the effect size on this specific population. So, our study still necessary to assess the outcome of gross motor function with standardized measure in a homogeneous population to quantify what to expect for a specific therapeutic target.

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