protocols led to 27.26% less pain at the end of treatment compared to sham [95% CI: 15.89% to 32.90%]. Protocol varied in terms of anodal or cathodal stimulation, areas of stimulation, number of sessions and current intensity.
Conclusions: In comparison with sham, tDCS demonstrated a superior effect in reducing chronic pain conditions. This gives the perspective that tDCS may be a promising approach to treat refractory chronic pain and to enhance dysfunctional neuronal circuitries involved in the DPIS, improving pain control with a therapeutic opioid-free.
Keywords: *tDCS, descending pain-modulatory, cancer pain.*

Neuropathic pain

A12

Transcranial direct current stimulation (tDCS) alters the nociceptive behavior and cytokines in rats submitted to neuropathic pain model and Alcohol exposure

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Objective: To investigate the effects of tDCS on the association between neuropathic pain and alcohol withdrawal in behavioral and neurochemical parameters.
Methods: 36 male Wistar rats (60 days; 300g) were divided into groups: control (C), neuropathic pain (NP), NP plus Transcranial direct current stimulation (NPtDCS), NP plus alcohol (NPAL) and NP plus alcohol plus tDCS (NPALtDCS). During the establishment of NP (chronic constriction injury-CCI), the rats were exposed to alcohol. Behavioral tests (hot plate and von Frey) were performed at baseline, 15 days post-CCI, and immediately and 24 hours after the last tDCS session (Bimodal tDCS; 0.5mA/20min/days/8days). Behavioral and biochemical data were analyzed by GEE/Bonferroni and one-way ANOVA/SNK, respectively. $P<0.05$ was considered significant (CEUA-HCPA:150501).
Results: There were interactions between group x time in the thermal and mechanical hyperalgesia ($P<0.001$). On 15th, all CCI groups, presented a decrease in the thermal and mechanical thresholds. Immediately post-treatment, NPtDCS group partially reverted thermal hyperalgesia, whereas, 24h post-treatment the tDCS treatment completely reverted the thermal hyperalgesia. There was no tDCS effect on mechanical hyperalgesia ($P>0.05$). tDCS increased the IL-1α and IL-10 levels in the cerebral cortex and brainstem, respectively ($F(4,27)=5.36$; $P<0.05$). Moreover, the NPtDCS, NPAL and NPALtDCS groups displayed increased NGF levels in the cerebral cortex ($F(4,27)=7.87$; $P<0.001$), whereas, NPALtDCS increased the IL-1β in the cerebral cortex ($F(4,27)=3.39$; $P<0.05$).
Conclusion: We showed that nociceptive response and biomarkers levels were altered by the association of NP, alcohol, and tDCS. However, future research should provide more knowledge about alcohol effects on pain.
Keywords: *tDCS, neuropathic pain, cytokines, animal model*
Funding: *CNPq, CAPES, FIPE-HCPA, FAPERGS*

A13

Effect of Acupuncture and/or Transcranial Direct Current Stimulation (tDCS) on nociceptive response and central levels of IL-1β and IL10 in rats submitted to a Neuropathic Pain model

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Objective: To evaluate nociceptive response and inflammatory cytokine levels in rats submitted to a model of neuropathic pain(NP) treated with acupuncture(Ac) and/or transcranial direct current electrical stimulation(tDCS).
Methods: 120 male Wistar rats, divided into 12 groups: ShamPain(Sp), ShamPain+ShamtDCS(SpSt),ShamPain+ShamtDCS+Ac(SpStA),ShamPain+Ac(SpA), ShamPain+tDCS(Spt),ShamPain+tDCS+Ac(SptA),Pain(P),Pain+ShamtDCS(PSt),Pain+ShamtDCS+Ac(PStA),Pain+Ac(PA),Pain+tDCS(Pt),Pain+tDCS+Ac(PtA). NP was induced by constriction of the sciatic nerve, established after 14 days, beginning the proposed treatments:8 sessions(20 min/day) of tDCS and/or Ac. Randal Selitto test, which evaluates hyperalgesia due to increasing of the paw pressure, was performed 15days after surgery and 24h after the end of treatment. Euthanasia occurred 48h after the end of the treatments. Prefrontal cortex levels of IL-1β and IL10 were assessed by ELISA. Data were analyzed by 3-way ANOVA/Bonferroni, considering significant differences $P<0.05$.Project approved by CEUA/HCPA(2018-0025).

ISBN: 978-1-7342025-1-9