1.43) and CP-21d (21.27 ± 3.04). As for fibroplasia, CP-7d (75.44 ± 6.08), CP-14d (85.20 ± 4.71) and CP-21d (99.57 ± 9.05) days was superior to SHAM-7d (48.07 ± 6.64), SHAM-14d (60.17 ± 5.89) and SHAM-21d (67.56 ± 6.77). The CP-14d (63.16 ± 2.71) and CP-21d (61.34 ± 3.85) showed superior collagenesis than SHAM-14d (48.77 ± 1.66) and SHAM-21d (47.47 ± 4.43). **Conclusion:** Cold Plasma showed important stimulation on burn healing controlling inflammation and oxidative stress, which increased angiogenesis, fibroplasia and collagenesis along the follow-up, making it promising in the repair of cutaneous burns associated with diabetes.

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Palavras-chaves: Cold Plasma, burn healing, diabetes, inflammation, angiogenesis

15.018 EXERCISE AND TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS) CHANGE THE NOCICEPTIVE RESPONSE AND THE BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF) LEVELS IN THE CEREBRAL CORTEX AND SPINAL CORD IN A MODEL OF CHRONIC PAIN: SHORT-TERM EFFECTS

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Resumo

Introduction: Chronic pain management still remains a challenge due the refractory response to the drug treatment. Evidences suggest that the exercise plays an important antinociceptive role, as well as, the transcranial direct current stimulation (tDCS) therapy. However, the benefits of association between exercise and tDCS need to be investigated.

Objective: To investigate the antinociceptive and neurochemical effects of exercise and/or tDCS in a chronic pain model.

Methodology: 78 male Wistar rats (60 days-old, 300g) were previously assigned in three groups: Control, Sham-Pain and Pain (Chronic Constriction Injury model - CCI). On 15th day, groups were divided in 13 subgroups: Control, Sham-Pain; Sham-Pain+Exercise; Sham-Pain+Sedentary+Sham-tDCS; Sham-Pain+Sedentary+tDCS; Sham-Pain+Exercise+Sham-tDCS; Sham-Pain+Exercise+tDCS; Pain; Pain+Exercise; Pain+Sedentary+Sham-tDCS; Pain+Sedentary+tDCS; Pain+Exercise+Sham-tDCS; e Pain+Exercise+tDCS. Nociceptive response was assessed by von Frey (VF) and Hot Plate (HP) tests at: baseline, 7th and 14th days after CCI surgery to confirm chronic pain model; immediately and 24h after treatment. Rats were subjected to exercise (20min/day/8days of treadmill) and/or bimodal tDCS (0.5mA/20min/day/8days) from 15th day to 22nd day. For sham-tDCS, the electrodes were put on the scalp and the stimulator was held switched off. At 48h after the end of treatment, rats were decapitated and tissues harvested for biochemical analysis. Behavioral data were analyzed by GEE/Bonferroni and

biochemical data by One-way ANOVA/SNK, and P<0.05 was considered significant. This experiment was approved by CEUA-HCPA (#17.0061).

Results: we observed interaction between group *vs* time upon mechanical and thermal hyperalgesia (Waldχ^2=1456,094 e Waldχ^2=3419,908; respectively; n=78; P<0.05). On 7th day after surgery, Sham-Pain and Pain groups exhibited lower nociceptive latency (P<0.05). At 14th day after surgery, only Pain group displayed lower nociceptive threshold. Immediately following the last treatment session, the Pain-tDCS and Pain-Exercise groups displayed a nociceptive response partially decreased to the VF test (P<0,05). The concurrent treatment between tDCS+exercise decreased the nociceptive response compared to treatment alone (P<0.05). At HP test, tDCS and/or exercise fully reverted the thermal hyperalgesia immediately and 24h following the treatment (P<0.05). In the spinal cord, Sham-Pain+exercise+Sham-tDCS and Pain groups displayed an increased BDNF levels [$F_{(12,65)}$=6.166; P<0.05], while the Pain+sedentary+tDCS and Pain+exercise+sham-tDCS groups presented decreased BDNF levels compared in comparison to other groups (P<0.05). In the cerebral cortex, we found increased BDNF levels in Sham-Pain+exercise+Sham-tDCS and Sham-Pain+exercise+tDCS, Pain+sedentary+tDCS, Pain+exercise+Sham-tDCS and Pain-exercise+tDCS groups compared to control group [$F_{(12,65)}$=5.301; P<0.05].

Conclusion: We found that alternative methods can be able to attenuate the behavioral responses to chronic pain. However, the benefits of exercise and tDCS were not linked to spinal cord and cerebral cortex BDNF levels, at least, in a neuropathic pain model. Furthermore, it should be stressed that the neurotrophins are differently regulated depending on tissues, clinical conditions and treatment adopted.

Palavras-chaves: Pain, Exercise, tDCS, Nociception, Analgesia

15.019 ORAL COLLAGEN V SUPPLEMENTATION INHIBITS ARTICULAR CARTILAGE DEGENERATION IN ARTHRITIS RATS

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Resumo

Introduction: Due the fact collagen type V (Col V) can be exposed in tissue injury, we hypothesized that the oral administration of this collagen species modulates the inflammation and remodeling of articular cartilage, avoiding joint destruction. It is known that the oral administration of Col V in diseases with immunoinflammatory substrate may reduce its activity in some tissues, but there are no studies on its action in the prevention of cartilage degradation.