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Transcranial low-frequency pulsating electromagnetic fields (T-PEMF) as post-concussion syndrome treatment

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Abstract

Background: Treatment options for the subgroup of people who develop long-lasting symptoms following mild traumatic brain injury are limited. Transcranial pulsating low-frequency electromagnetic stimulation (T-PEMF) in other patient groups has shown promising results in several studies with proposed neuroprotective and anti-inflammatory effects.

Objective: The present pilot study was conducted to assess feasibility and tolerability of T-PEMF in treating post-concussion syndrome.

Methods: Seven patients with post-concussion syndrome received 5 weeks of daily 30 minutes T-PEMF treatment with evaluation after 2 and 5 weeks and 3 months after ending treatment.

Results: Compliance was high as all subject completed the full treatment. Two patients however experienced a worsening of their concussion symptoms during the course of treatment. The remaining patients had some discomfort in relation to treatment, mainly headache, but passing and less for each treatment. The majority (n = 5) had a reduction in symptoms overall, up to

61% (2%-61%) based on the Rivermead Post-Concussion Symptoms Questionnaire.

Conclusion: Further studies on T-PEMF as a treatment option for post-concussion syndrome are warranted.

Keywords: PCS; T-PEMF; concussion; electromagnetic stimulation; mTBI; post-concussion syndrome.

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Conflict of interest statement

While the study was conducted Steen Dissing (SD) had a 0.6% ownership of the Re5 Company producing the T-PEMF device. The other authors, Claire Prener Miller (CPM), Martin Prener (MP) and Olaf B. Paulson (OBP), have nothing to declare.

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