

Immediate changes in electroencephalography activity in individuals with nonspecific chronic low back pain after cranial osteopathic manipulative treatment: study protocol of a randomized, controlled crossover trial.

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Author information

Abstract

BACKGROUND: Osteopathic medicine is based on a diagnostic and therapeutic system to treat tissue mobility/ motility dysfunctions in general, using different approaches (depending on the target tissue) known as osteopathic manipulative treatment. Among the available techniques those ones addressed to the cranial field are the most questioned because of the lack of scientific evidence; but the compression of the 4th ventricle technique has been largely studied in clinical trials. Studies have shown that the technique may affect both central and autonomous nervous system, modulating some reflexes (Traube-Hering baro signal), and modifying brain cortex electrical activity through central sensitization in subjects with chronic low back pain. Thus, investigators hypothesize that the compression of the 4th ventricle may modulate peak alpha frequency (electroencephalographic assessment) and promote physical relaxation in subjects in vigil.

METHODS/DESIGN: A randomized, controlled crossover trial with blinded assessor was designed to test the hypothesis. A total of 81 participants will be assigned to three treatment conditions, with seven days of washout: (I) compression of the 4th ventricle; (II) sham compression of the fourth ventricle; (III) control (no intervention). The (I) power amplitude and the (II) frequencies of the dominant peak in the alpha band will be the primary outcome measures of the study. All participants will be recruited at the Outpatient Rehabilitation Service of the University Hospital of Brasília-University of Brasília. All the electroencephalographic exams will be conducted by a blinded assessor.

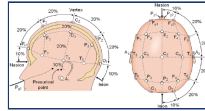
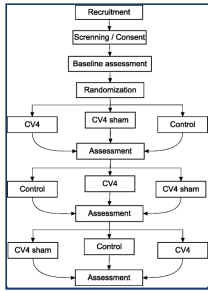
DISCUSSION: The investigators hypothesize that patients with chronic low back pain submitted to the technique would have the peak alpha frequency modulated and, thus, would experience physical relaxation.

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