

Treatment of Ictus with Transcranial Electromagnetic Stimulation

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INTRODUCTION

Ictus has become the cause of the longest hospital stays, mortality and disability among populations with a high life-expectancy rate. In order to improve the chronobiology of patients affected by ictus, low level transcranial electromagnetic stimulation is applied under conditions of geomagnetic calm and personalized therapy. The electric source for the coils used ranges between 2pT and 10pT, with intensities between 10mA and 100mA, regulated every 10mA, and frequencies that go from 0.5Hz to 12Hz, regulated every 0.5 Hz. They are applied for two daily sessions lasting three hours each, morning and afternoon/evening, as the patient is resting in the dark. EEGs are carried out periodically as the main clinical evaluation of the treatment. A progressive decrease in the different sequels has been observed.

MATERIALS AND METHODS

A device was used for the treatment which consisted of:

- a) A flexible semispherical cap which supports the magnetic field producing coils. The coils are set according to the 10-20 standard, in the same way as the electrodes in a encephalogram (EEG)
- b) A generator causes the coils to produce magnetic fields ranging between 2pT and 10pT, and adjustable frequencies of .5Hz ranging between .5Hz and 10Hz.

The treatment applied to the 12 subjects (between 50 and 65 years of age, of both sexes, with ictus, all of whom suffered from aphasia) took place at home. They were treated for two sessions of at least 3 hours each in photophase, morning and afternoon/evening, respecting the scotophase, according to the circadian rhythm, on calm geomagnetic days. The values of the magnetic field and frequency were set at 5pT and 8Hz. Periodic clinical treatment evaluation was based mainly on EEG.

Aphasia clinical evaluation followed the Boston Naming Test (BNT)

RESULTS

After three months of treatment, patients have shown progressive improvement in the recovery of speech.

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