

MTL-P300 as a marker of the epileptogenic zone and hippocampal functionality in the presurgical evaluation of temporal lobe epilepsy: a systematic review

Abstract

Background In the past twenty years, there has been an increasing interest among neuroscientists and physicians in mapping the cortical areas involved in the epileptogenic zone (EZ) through event-related potentials (ERPs) that enable the evaluation of the functional preservation of these areas. The present review is an update on publications on this topic.

Objective To investigate the accuracy of the cognitive evoked of the medial temporal lobe P300 (MTL-P300) potential in detecting the EZ in temporal lobe epilepsy (TLE).

Methods The systematic review of articles on the PubMed, Embase and Lilacs databases was conducted between February and December 2020. Articles published in English from 1985 to December 2020 were included. Additional studies were identified by searching the references of the selected studies and review articles. The studies were included for the following reasons: in-depth intracranial electroencephalography (iEEG) analysis of hippocampal activity; investigations of patients with TLE; and correlations between regarding the ERP results obtained in the temporal regions (MTL-P300) and the EZ.

Keywords

- ▶ Evoked Potentials
- ▶ Event-Related Potentials, P300
- ▶ Epilepsy, Temporal Lobe
- ▶ Hippocampus