Abstract

Some studies have reported the importance of electroencephalography (EEG) as a method for investigating abnormal parameters in psychiatric disorders. Different findings in time and frequency domain analysis with regard to central nervous system arousal during acute panic states have already been obtained. This study aimed to systematically review the EEG findings in panic disorder (PD), discuss them having a currently accepted neuroanatomical hypothesis for this pathology as a basis, and identify limitations in the selected studies. Literature search was conducted in the databases PubMed and ISI Web of Knowledge, using the keywords electroencephalography and panic disorder; 16 articles were selected. Despite the inconsistency of EEG findings in PD, the major conclusions about the absolute power of alpha and beta bands point to a decreased alpha power, while beta power tends to increase. Different asymmetry patterns were found between studies. Coherence studies pointed to a lower degree of inter-hemispheric functional connectivity at the frontal region and intra-hemispheric at the bilateral temporal region. Studies on possible related events showed changes in memory processing in PD patients when exposed to aversive stimuli. It was noticed that most findings reflect the current neurobiological hypothesis of PD, where inhibitory deficits of the prefrontal cortex related to the modulation of amygdala activity, and the subsequent activation of subcortical regions, may be responsible to trigger anxiety responses. We approached some important issues that need to be considered in further researches, especially the use of different methods for analyzing EEG signals.

Keywords

Electroencephalography, panic disorder, neurobiology, brain mapping.