

EVALUATION OF THE EEG-SIGNAL DURING VOLATILE ANAESTHESIA: METHODOLOGICAL APPROACH

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Abstract:

The presence of the EEG patterns showing some similarities with epileptiform activity as well as epileptic EEG discharges and motor seizures observed in some people during anaesthesia conducted with volatile anaesthetics is now well-recognized. Nevertheless the practical as well as theoretical implications indicate for the necessity of better understanding of the nature and mechanism of these patterns. The aim of this study was to verify the usefulness of some methods of the EEG analyses to characterize the atypical forms of EEG.

It was shown that the estimation of Higuchi's fractal dimension and mean phase coherence as well as the analysis of time-frequency distributions (spectrograms and scalograms) revealed the quantitative features of atypical patterns and their relationships with the depth of anaesthesia.

Keywords: EEG patterns, volatile anaesthetics, Higuchi's fractal dimension, mean phase coherence, time-frequency distributions