

ECT AND INFORMATION PROCESSING IN PATIENTS WITH TREATMENT-RESISTANT PSYCHIATRIC DISORDERS ASSESSED BY EVENT-RELATED POTENTIAL P300

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Introduction: The study of non-memory cognitive functions after ECT has been relatively neglected. Event-related potentials (ERP) are thought to reflect some cognitive processes. ERP P300 is a sensitive indicator of disturbances of attentional and working memory processes.

Objectives: Aim of this study was to examine the effect of course of ECT on auditory ERP P300.

Methods: P300 potential was recorded in 22 patients. 12 patients had schizophrenia spectrum disorders and 10 patients had various mood disorders. Mean age of patients was 40±13 years (from 22 to 72 years). ERPs were recorded before the first ECT procedure and after the last ECT. Recordings were made at Fz, Cz and Pz electrode sites. Peak-to-peak (N2-P3) amplitude and latency of P300 wave were analyzed. Correlation between P300 parameters, clinical symptoms (measured using PANSS, MADRS, HAM-D scales) and parameters of ECT procedure - delivered energy, seizure energy index (SEI) and duration of seizure - was evaluated.

Results: After ECT clinical symptoms have improved. There was also a statistically significant increase in P300 amplitude. Increase was greater in the 20-39 years old patient group. Decrease in P300 latency was insignificant. Correlation between P300 latency and SEI, and between P300 amplitude and delivered energy was more reliable in the mood disorders group. According to HAM-D the improvement of depression symptoms correlates with the decreased latency and increased amplitude of the P300 potential.

Conclusions: ECT may improve information processing in patients with treatment-resistant schizophrenia spectrum disorders and mood disorders as assessed by event-related potential P300.