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The Effect of Electroconvulsive Therapy On Cognitive Functions in Treatment-resistant Depression

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Introduction. Electroconvulsive therapy (ECT) is the most effective treatment for drug-resistant depression. However, long-term effects of such therapy on cognitive functions have not been adequately studied.

Aims The aim of the study was to estimate short-term and long-term effects of ECT on cognitive functions in patients with drug-resistant depression.

Methods. Thirty seven patients were included (10 male, 27 female), aged 34-75 years. Cognitive assessments were performed before, immediately after completion of 6-12 sessions of the ECT, and 3 months thereafter, using Benton Visual Retention Test, Digit Span of the Wechsler Adult Intelligence Scale (WAIS), the Rey Auditory Verbal Learning Test (RAVLT), Color Reading Interference (Stroop test), Verbal fluency test, Trail Making Test (TMT) and the Rey-Osterrieth Complex Figure Test (ROCF).

Results. Immediately after ECT, a significant worsening was noted in memory (most elements of RAVLT) and in verbal fluency. However, 3 months after ECT, the indices of both RAVLT and verbal fluency significantly improved compared to baseline, and also, these of Benton and ROCF were significantly better than before ECT. The results of Digit Span (WAIS), Stroop and TMT were not affected by the treatment.

Conclusions. The results suggest that the negative effects of ECT on cognitive functions are transient. After three months, the indices of memory, verbal fluency as well as Benton and ROCF were significantly better than those before the treatment. Therefore, in addition to antidepressant effect in drug-resistant depression, electroconvulsive therapy, in a long-term perspective, may also exert a favorable influence on some cognitive functions.