Cognitive-Behavioral Therapy as Continuation Treatment to Sustain Response After Electroconvulsive Therapy in Depression: A Randomized Controlled Trial

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**Background:** Although electroconvulsive therapy (ECT) is the most effective acute antidepressant intervention, sustained response rates are low. It has never been systematically assessed whether psychotherapy, continuation ECT, or antidepressant medication is the most efficacious intervention to maintain initial treatment response.

**Methods:** In a prospective, randomized clinical trial, 90 inpatients with major depressive disorder (MDD) were treated with right unilateral ultra-brief acute ECT. Electroconvulsive therapy responders received 6 months guideline-based antidepressant medication (MED) and were randomly assigned to add-on therapy with cognitive-behavioral group therapy (CBT-arm), add-on therapy with ultra-brief pulse continuation electroconvulsive therapy (ECT-arm), or no add-on therapy (MED-arm). After the 6 months of continuation treatment, patients were followed-up for another 6 months. The primary outcome parameter was the proportion of patients who remained well after 12 months.

**Results:** Of 90 MDD patients starting the acute phase, 70% responded and 47% remitted to acute ECT. After 6 months of continuation treatment, significant differences were observed in the three treatment arms with sustained response rates of 77% in the CBT-arm, 40% in the ECT-arm, and 44% in the MED-arm. After 12 months, these differences remained stable with sustained response rates of 65% in the CBT-arm, 28% in the ECT-arm, and 33% in the MED-arm.

**Conclusions:** These results suggest that ultra-brief pulse ECT as a continuation treatment correlates with low sustained response rates. However, the main finding implicates cognitive-behavioral group therapy in combination with antidepressants might be an effective continuation treatment to sustain response after successful ECT in MDD patients.

**Key Words:** Cognitive-behavioral group psychotherapy, continuation-treatment, electroconvulsive therapy, major depressive disorder, survival time, sustained response

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Food disorders are often characterized by a recurrent course and antidepressant treatment strategies are generally focused on providing fast symptom relief. Within the broad portfolio of antidepressant interventions, electroconvulsive therapy (ECT) is among the most effective strategies with rapid onset and profound alleviation of depressive symptoms (1,2). Though, even when the core aim of remission is achieved, many patients do not sustain initial treatment response (3). For this reason, ECT responders are advised to continue with a relapse-preventing treatment, such as combination pharmacotherapy (3) or continuation ECT (4), both capable of significantly reducing relapse rates. However, a relevant number of patients experience recurrence of depressive episodes within 6 months (5), indicating an urgent need for effective continuation therapies (4,6,7). A possible approach to prevent recurrence of depression would be cognitive-behavioral therapy (CBT), which has demonstrated acute antidepressant effects comparable with antidepressant pharmacotherapies (8), albeit with lower rates of attrition (9). Also, CBT is efficacious as a continuation treatment (10) and has shown enduring effects lasting beyond the end of treatment (11), reducing risk for subsequent symptom return following treatment termination (12,13). Cognitive-behavioral therapy might lead to these lasting changes, since in CBT, patients learn skills they can take advantage of in everyday life even after the treatment has ended (12–14).

In this study, CBT had been performed in patients after treatment response, making it likely that patients were in an emotional and cognitive state capable of achieving these learning acquisitions very quickly. This should have functioned as a strong buffer against relapse even beyond the end of treatment. Surprisingly, systematic investigations of the effect of CBT on relapse-prevention after ECT were lacking (15).

Thus, we conducted the present clinical trial testing the hypothesis that adding CBT to pharmacotherapy after successful ultra-brief ECT would maintain initial treatment response over time better than adding continuation ECT to pharmacotherapy or treating with pharmacotherapy alone.