Treatment of resistant mood and schizoaffective disorders with electroconvulsive therapy: a case series of 264 patients

Trattamento dei disturbi resistenti dell’umore e schizoaффettivi con la terapia elettroconvulsiva: una casistica di 264 pazienti

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Summary

Objectives
Electroconvulsive therapy (ECT) is a non-pharmacological treatment whose effectiveness has been demonstrated for patients suffering from severe and resistant depression, bipolar disorder and schizophrenia. Several studies demonstrated the efficacy of ECT in different subgroups, such as patients with bipolar depression, mixed state, psychotic features and suicidal ideation. Herein we report a case series of 264 patients with mood and schizoaffective disorders who were resistant to multiple pharmacological trials and treated with ECT to achieve a clinical improvement or remission.

Methods
Patients underwent ECT at the psychiatric unit of Montichiari Hospital. All subjects had at least 18 years of age and met DSM-IV TR criteria for major depressive disorder (n = 89, 33.7%), bipolar disorder (manic n = 5, 1.89%; mixed n = 17, 6.4%; depressed n = 92, 34.85%), mood disorder with catatonic features (n = 8, 3.03%) or schizoaffective disorder (n = 50, 18.94%). Patients were evaluated before treatment (T0) and at one week (T1), 6 months (T2) and 1 year (T3) after treatment with the Clinical Global Improvement scale (CGI). Suicidal ideation was evaluated clinically at each follow-up visit.

Results
Clinical evaluations made one week after ECT showed clinical improvement in 100% of patients with manic episodes, 92% with bipolar depression, 91% with major depression, 90% with schizoaffective disorder, 82% with mixed episode and 62.5% with catatonic features. The same evaluation repeated 6 months and 1 year after the ECT reaffirmed global clinical improvement in 100% of manic patients, 88.5 with bipolar depression, 88% with mixed episode, 83.5% with major depression, 77% with schizoaffective disorder and 75% with catatonia.

Conclusions
ECT appears to be effective in providing overall clinical improvement. These conclusions are, however, limited by the experimental design and therefore liable to many uncontrolled variables.

Keywords
Electroconvulsive therapy (ECT) • Treatment resistant depression • Bipolar disorder • Schizoaffective disorder • Global clinical improvement

Introduction
Treatment resistance is a highly discussed topic in psychiatric clinical practice, especially in the case of mood disorders. In the STAR*D (Sequenced Treatment Alternatives to Relieve Depression) study, only 67% of patients completely responded to antidepressant treatment; the rate of response decreased at any further treatment (from 37% at the first antidepressant trial to 13% at the last trial) 1. Regarding to bipolar disorder, the STEP-BD (Systematic Treatment Enhancement Program for Bipolar Disorder) study reported that 58% of patients achieved remission in 2 years follow-up; in this group of patients, nearly 50% had recurrences of illness, with depressive episodes doubling the number of manic, hypomanic or mixed episodes 2. The most important staging protocols for the assessment of treatment resistance in major depressive disorder are those of Thase and Rush 3, Souery 4 and the Massachusetts General Hospital 5. Thase and Rush’s classification consists of five stages of increasing resistance to antidepressant medications up to electroconvulsive therapy (ECT), without considering dosage/duration of antidepressant trial or combinations/potentiation strategies. Souery’s staging model identifies three stages of treatment resistance; stage one consists of cases that did not respond to a full trial of antidepressant medications (including a trial of bilateral ECT) of at least 6-8 weeks of duration; stage two (treatment resistant depression) includes cases with resist-
ance to at least two trials of antidepressant medications of different pharmacological groups; stage three (chronic resistant depression) includes cases with resistance to different antidepressant trials, including potentiation strategies, for at least 12 months of trial duration. The Massachusetts General Hospital classification considers both the number of failed antidepressant trials and potentiation/combination strategies, without any hierarchy of antidepressants, creating a continuous variable that reflects the degree of treatment resistance. There are no staging protocols for assessment of treatment resistance in bipolar disorder. An operationalised definition of treatment resistance should consider non-response to at least two different trials of medications approved for bipolar disorder, adequate for dosage and duration (at least six weeks for mania, 12 weeks for depression, 12 or more months for maintenance therapy), excluding patients who responded to treatment but discontinued because of side effects.

According to the American Psychiatric Association Task Force on ECT, primary clinical indications for ECT are: major depressive episode (both unipolar and bipolar), manic/mixed episode, acute psychotic relapse in schizophrenia, schizoaffective disorder and schizoaffective disorder.

Materials and methods

The initial sample consisted of 287 patients treated with ECT at the psychiatric ward of the Montichiari Hospital between January 2005 and July 2012. All subjects were at least 18 years old; diagnosis was assessed with clinical interview by two experienced psychiatrists (O.B and G.F.) according to DSM IV-TR criteria. All subjects did not respond to at least three different pharmacological treatments in the last six months. All subjects gave written informed consent to ECT treatment. Patients were evaluated with CGI (Clinical Global Impression) scale at the beginning of the treatment (T0), and after one week (T1), six months (T2) and 12 months (T3); we defined response to ECT as a CGI score of 2 (moderately improved) or 1 (very improved). Suicidal ideation was assessed clinically at every follow-up visit. From the initial sample we excluded 23 subjects: 15 withdrew consent to undergo ECT; 1 had a cardiac complication; 7 were lost to follow-up.

Procedure for ECT: anaesthesia was induced using thiopental sodium (2 mg/kg) or etomidate (0.30 mg/kg); succinylcholine was used as a relaxing neuromuscular (0.5-1 mg/kg); patients were pre-mediated with 0.5 mg atropine to reduce bronchial secretions. ECT was administered using a brief pulse stimulator Mecta 5000Q, three times a week. The electrode placement was bitemporal until February 2009, subsequently applying LART (Left Anterior Right Temporal), reserving the bitemporal placement for cases with florid psychotic symptoms or problems to the convulsion. Patients were ventilated with 100% oxygen until resumption of spontaneous respiration. The monitoring of vital signs included pulse oximetry and electrocardiogram. The stimulation parameters were: wave width 0.30 mA, frequency 20 Hz, duration of the stimulus 4 sec, if the seizure was not satisfactory, the duration of the stimulus was increased to 8 sec. The number of sessions of ECT for each patient was decided by the treating physician based on clinical observation and course of disease.

Regarding concomitant therapies, anticonvulsants and benzodiazepines were suspended during the sessions of ECT and re-administered after treatment; lithium plasma levels were maintained at less than or equal to 0.4 mEq/L in the days immediately preceding session of ECT and during the course of treatment. In case of resistant convulsion, we used the following options: change anaesthetic to etomidate; use of low dose pro-convulsant drugs (bupropion, clozapine, maprotiline); laryngeal mask.

Results

The group was composed of 264 patients (110 men) with a mean age ± SD of 51.06 ± 16.89 years for men and 51.38 ± 13.9 for women. The mean duration of disease prior to ECT was 13.5 ± 11.7 years. The distribution of patients was:

- 92 (34.85%) bipolar disorder type I and II, major depressive episode;
- 89 (33.7%) recurrent major depressive disorder;
- 50 (18.94%) schizoaffective disorder (major depressive episode);
- 17 (6.4%) bipolar disorder type I, mixed episode;
- 8 (3.03%) mood disorder with catatonic features;
- 5 (1.89%) bipolar disorder type I, manic episode.

At T1 follow-up, ECT treatment produced a clinical improvement in 100% of patients with bipolar manic episode, 92% of patients with bipolar major depressive episode, 91% of patients with major depressive disorder and 90% of patients with major depression in schizoaffective disorder; lower percentages were found in bipolar mixed episodes (82%) and mood disorders with catatonic features (62.5%).

At T2 and T3 follow-up times, patients with major depressive episodes did not maintain the level of clinical improvement achieved at T1 (at T2: bipolar depression 90%, major depression 84%, schizoaffective disorder 80%; at T3: bipolar depression 87%, major depression 83%, schizoaffective disorder 74%), while manic, mixed and catatonic patients performed far better (at T2...
and T3: bipolar manic 100%, bipolar mixed 88%, catatonic 75%).

Regarding the presence of suicidal ideation, 53% of patients with bipolar major depression, 37.5% of patients with catatonic features, 36% of patients with major depressive disorder, 29% of patients with bipolar mixed episode, 22% of patients with schizoaffective disorder and 20% of those with bipolar manic episode presented suicidal ideation at the baseline evaluation pre-ECT (T0). In subsequent follow-up (T1-T2-T3), patients with bipolar manic and mixed episode and those with catatonic features no longer had the presence of suicidal ideation; a sharp reduction in suicidal ideation was also detected in other disorders (ranking bipolar major depression > unipolar major depression > schizoaffective disorder); two suicides occurred at T2 (1 patient with major depressive disorder, 1 patient with schizoaffective disorder).

Discussion

In our sample, ECT was found to produce a rapid clinical improvement in patients with treatment resistant bipolar mania, bipolar and unipolar major depression and schizoaffective disorder. These findings are consistent with those reported in the literature. We found a progressive reduction in clinical improvement in patients with a major depressive episode: this can be explained by the fact that ECT has a rapid antidepressant response and a mood stabilising effect over time.

Our data also confirm the effectiveness of ECT in relieving suicidal ideation. Patients with mania, mixed episode and catatonia had the best response to ECT in terms of antisuicidal effects, which were maintained throughout follow-up. The rate of suicide in our sample of patients treated with ECT was 0.75%, which is well below the rate of untreated severe mood and psychotic disorders.

This study has several limitations: 1) the observational design of the study is subject to many uncontrolled variables; 2) treatment resistance was defined widely and we did not report information regarding pharmacological treatment before ECT; 3) the outcomes after ECT were evaluated only with the CGI scale and not with other valid rating scales; 4) suicidal ideation was evaluated clinically; 5) co-morbidity with other psychiatric disorders and with substance abuse/addiction was not evaluated; 6) the patients’ diagnostic distribution is asymmetric, and so it is difficult to make meaningful comparisons between responses to ECT.

Conflict of interests
None.

References