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Brief report

Influence of episode duration of major depressive disorder on response to electroconvulsive therapy

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Abstract

Background: Longer duration of major depressive episode is supposed to decrease response to electroconvulsive therapy (ECT). Most studies on the subject are dated and their population differs from ours, therefore their results may not be applicable to our population of severely depressed inpatients.
Methods: We reviewed the records of 56 consecutive inpatients with major depressive disorder according to DSM-III-R criteria and assessed each patient's episode duration. We examined whether episode duration has an effect on response to ECT.
Results: Episode duration has no significant effect on response to ECT, according to both a reduction on the Hamilton Rating Scale for Depression (HRSD) of at least 50% and a post-treatment HRSD score ≤7 as outcome criteria. Concerning each patient's absolute change in HRSD score pre-treatment compared to post-treatment, again episode duration has no significant effect.
Limitations: The present study has a limited sample size and concerns a rather homogeneous population of severely depressed inpatients. Episode duration was established retrospectively.
Conclusions: ECT is an effective treatment for severely depressed inpatients, independent of episode duration.
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Keywords: Major depression; Episode duration; Electroconvulsive therapy; Inpatients

1. Introduction

Electroconvulsive therapy (ECT) is recognised as the most effective treatment for major depressive disorder (Abrams, 2002a; UK ECT Review Group, 2003). However, in The Netherlands ECT is still considered an exceptional treatment, administered to nonresponders to antidepressant pharmacotherapy. This implies that patients receive ECT late in the course of treatment and therefore have a longer episode duration when ECT is administered.

Longer episode duration of major depressive disorder is associated with poor response to ECT (Black et al., 1989, 1993; Dunn and Quinlan, 1978; Hamilton and White, 1960; Hobson, 1953; Kindler et al., 1991; Kukopulos et al., 1977; Magni et al., 1988; Prudic et al., 1996). Most of these studies are dated and, by current standards, show methodological flaws.

The more recent studies of Kindler et al. (1991) and Prudic et al. (1996) used more modern methodological standards. However, in Prudics population patients with psychotic features were excluded and half of her patients

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had received ECT before. In Kindlers population females are underrepresented (27%). Our patients had never been treated with ECT before and patients with mood congruent psychotic features were included. The majority was female (73%).

Because of these differences in population, results of previous studies may not be applicable to depressed patients who receive ECT in The Netherlands. Therefore, our study examines the influence of episode duration on response to ECT in a population of severely depressed inpatients, most of them being medication resistant.

2. Methods

2.1. Subjects

We reviewed the records of 56 inpatients that met the DSM-III-R (American Psychiatric Association, 1987) criteria for major depression. Diagnoses were based on clinical observation. All patients were consecutively treated with ECT between December 1993 and December 2000 at the Department of Biological Psychiatry, Parnassia Psychomedical Center, The Hague, The Netherlands. This department is reserved for patients suffering from severe depression, often medication resistant. Patients receiving ECT were either medication resistant or in critical condition (mutistic, refusing food). All patients were free from neurologic or serious medical illness and had never been treated with ECT before.

2.2. Electroconvulsive therapy

Of 32 patients starting with right unilateral (RUL) ECT, all but four either responded or were crossed over to bilateral (BL) ECT. Twenty-four patients received BL ECT from the start, because of severity of illness based on clinical observation. ECT was administered with a brief-pulse, constant-current apparatus (Thymatron DGx, Somatics, Lake Bluff, IL 60044, USA) after premedication with atropine (0.5 mg i.v.) and under sodiumthiopental anaesthesia (1.0–2.5 mg/kg) and succinylcholine (1.0 mg/kg) for muscle relaxation. Patients were oxygenated (100%, positive pressure) until resumption of spontaneous respiration. Physiological monitoring included pulse oximetry, electrocardiogram and electroencephalogram. ECT was administered at a schedule of two treatments per week with moderate to high stimulus intensity (288–504 mC). The initial stimulus dose was based on patients' age (Abrams, 2002b) with a minimum of 288 mC in patients receiving RUL ECT. A motor seizure less than 25 s was considered inadequate. The number of ECT treatments was determined by clinical observation. ECT was continued until patients were either asymptomatic or had not shown further improvement over three consecutive treatments. A minimum of ten treatments was required before evaluation as nonresponder.

Patients were withdrawn from all psychotropic medication before ECT and were maintained medication free during the course of ECT in all but seven cases. Those patients received droperidol 5 mg i.m. prior to ECT for severe anxiety. Three of them also received haloperidol 1–3 mg daily for severe agitation.

2.3. Evaluation of treatment outcome

Scores on the 17-item Hamilton Rating Scale for Depression (HRSD) (Bech et al., 1986) were routinely recorded in the patients' case notes prior to ECT, during ECT and following treatment termination. These HRSD scores were used in two different ways for classification of response to ECT. First, patients were classified as responder when their HRSD score showed a reduction of at least 50%. The second method requires a post-treatment score of ≤ 7 in patients with full remission. We also measured each patient's absolute change in HRSD score pre-treatment compared to post-treatment.

2.4. Duration of index episode

Duration of index episode (onset of depressive symptoms to onset of ECT) was measured retrospectively. Because choice of a cut-off point between short and long episode duration is arbitrary, we decided to analyse episode duration as a continuous variable instead as a dichotomous one.

2.5. Statistical analysis

Multiple linear regression was used to assess the relation between episode duration and absolute change in HRSD score as continuous variables. Multiple logistic regression was used to assess the effect of episode duration on two dichotomous outcome criteria, response (at least 50% reduction of HRSD score) and remission (post-treatment HRSD score ≤ 7). In both analyses we adjusted for the following confounding variables: presence of psychotic features, presence of melancholic features (DSM-IV criteria) and adequacy of antidepressant pharmacotherapy prior to ECT. The

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