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ECT Use in Unipolar and Bipolar Depression

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Abstract

Background—Few studies have compared response to electroconvulsive therapy (ECT) in depressed patients with unipolar and bipolar disorder.

Methods—We reviewed the charts of inpatients with unipolar or bipolar depression who received open treatment with right unilateral ECT. We compared the number of treatments, demographics, and change in Global Assessment of Functioning scores and length of hospital stay in both groups.

Results—Whereas changes in Global Assessment of Functioning scores and length of stay overlapped, the number of treatments in patients with bipolar disorder (mean $\pm$ SD, 7.5 ± 1.6) was lower than that in patients with unipolar disorder (mean $\pm$ SD, 10.2 ± 1.9).

Conclusion—Fewer ECT treatments may be required to achieve similar benefit in patients with bipolar disorder compared to patients with unipolar disorder.

Keywords

right unilateral ECT; bipolar depressed; number of ECT treatments

Dear Editor:

Whereas electroconvulsive therapy (ECT) is effective for depressive episodes in unipolar and bipolar disorder, few studies have compared ECT in these disorders. Existing reports have indicated that the rate of response to ECT may be more rapid or equivalent.¹⁻³

Given the limited evidence base, we examined experience with ECT in inpatients. The aim of our study was to compare outcome measures and number of treatments in depressed patients with unipolar disorder (UPD) and depressed patients with bipolar disorder (BPD) in number of treatments and in outcome measures.

MATERIALS AND METHODS

We reviewed charts of patients who were referred for ECT at our inpatient facility. The inclusion criteria were the following: (a) age older than 18 years, (b) prescribed right

unilateral treatment and received at least one treatment, and (c) met the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition diagnosis of unipolar (UP) major depression or bipolar (BP; I and II) depression. The exclusion criteria were schizophrenia, schizoaffective disorder, substance dependence, dementia and neurological disorders.

These patients received right unilateral treatment with pulse width of 1.0 millisecond at 6 times seizure threshold 3 times per week until they obtained a satisfactory response as determined by the attending psychiatrist.

We recorded the age, sex, number of treatments, length of stay in the hospital, and change in Global Assessment of Functioning (GAF) scores from admission to discharge.

RESULTS

Twenty-five subjects ($n = 25$: UP, 17 and BP, 8) met the study criteria. The patients with BPD were younger (47.9 ± 21.3 years) than the patients with UPD (67.7 ± 13.4 yrs; $t = 2.93$; $P < 0.04$). The sex distributions were similar in the 2 groups (M/F: UP, 7:10; BP, 4:4). Length of stay (days) overlapped in the 2 groups (UP = 34.2 ± 10.8 ; BP = 41.2 ± 17.6). Change in GAF scores was also equivalent in the 2 groups (UP = 34.3 ± 10.8 ; BP = 35.7 ± 9.5). More treatments were prescribed to the patients with UPD (10.2 ± 1.9) compared to the patients with BPD (7.5 ± 1.6). In none of these patients was ECT discontinued owing to emergent manic symptoms or adverse effects.

A general linear model analysis with diagnosis, age, and sex revealed that diagnosis ($P = 0.02$) and sex ($P = 0.03$) were significantly related to number of treatments. In both diagnostic groups, the females received more treatments than the males did. The model did not show age to be associated significantly with the number of treatments ($P = 0.29$) when diagnosis and sex were taken into account, although there was a linear increase in the number of treatments with age in all groups (Fig. 1).

DISCUSSION

One main finding of this preliminary study was that diagnosis was associated with difference in the number of ECT treatments. Few studies have addressed the prognostic significance of illness polarity for ECT in depression. Five prospective trials compared ECT in these diagnostic groups, with conflicting results.

Daly et al¹ conducted a randomized controlled trial in which patients with UPD and patients with BPD were administered ECT; they found that speed of improvement was more rapid in patients with BPD I and II with greater reduction in Hamilton Rating Scale for Depression scores at the end of the sixth ECT treatment. Stromgren⁴ in a double-blind study found that there was no difference in patients with UPD and BPD with regard to overall response to ECT. However, the patients with BPD achieved more rapid clinical improvement as measured by the decrease in depression scores and the number of treatments required. Similarly, Sienaert et al² found that patients with BPD required fewer treatments compared to patients with UPD to meet criterion for response of 50% or greater reduction in Hamilton Depression scores. However, Bailine et al⁵ found that patients with BPD and UPD achieved remission with similar numbers of treatments. Also, Grunhaus et al³ concluded that there was no difference in the rate of response to ECT in depressed patients with UPD versus depressed patients with BPD. Our findings are in line with the first 3 reports noted earlier.

Another finding in our study was that female patients in both diagnostic groups received more treatments. The reason for this is not clear. We were unable to locate a study addressing the relationship of sex to the rate of response to ECT. Age was not significantly

associated with the number of treatments in this sample when controlling for polarity and sex, but there was a trend for the number of treatments to be greater with older age.

In our sample, the change in GAF score and length of hospital stay was equivalent in the 2 diagnostic groups, and this change was not associated with sex or age. The overlap in the change in GAF scores is consistent with ECT being an effective treatment in both groups.

These preliminary findings need to be considered in the context of several important limitations. First, this is a retrospective study. Second, the sample size is modest. Furthermore, psychotropic use, both before and during ECT treatment, was not standardized. Also, GAF scores rather than depression rating scales were available. Finally, our sample included fewer patients with BPD than patients with UPD.

Factors that may be associated with differences in rate of response to ECT are important from clinical and public health perspectives. Daly et al¹ and Sienaert² et al reported that the speed of response was independent of selected clinical features including age at onset and number of episodes. Differences in response between patients with UPD and patients with BPD are potentially heuristically important. For example, Daly et al¹ found greater increase in seizure threshold in the patients with BPD than those with UPD receiving ECT and speculated that such a mechanism could be involved in differences in therapeutic effects.

CONCLUSION

Our findings of an association between diagnosis and number of treatments are consistent with some but not all of a limited number of prospective reports addressing the rate of response to ECT in depression. Further study of larger patient samples seems warranted and would enable clarification of the roles of sex and age.

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Number of ECT treatments and Age for Diagnosis by Gender Groups

FIGURE 1.
Number of ECT treatments and age for diagnosis by sex groups.