

INITIAL RESPONSE TO ECT AS A PREDICTOR OF OUTCOME IN ENDOGENOUS DEPRESSION

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SUMMARY

In a double-blind, prospective study, 29 patients with endogenous depression were treated with electroconvulsive therapy (ECT). The degree of attenuation in Hamilton Rating Scale for Depression scores after the first ECT was compared between ECT responders and non-responders at the end of the treatment course; a significant difference was obtained, indicating higher initial response in ECT responders. It is therefore suggested that response to a single trial ECT may form the basis for prediction of response of endogenous depression to a course of ECT. An operationalization of this concept is proposed, its sensitivity and specificity calculated, and its implications discussed.

The prediction of response of endogenous depression to electroconvulsive therapy (ECT) is an important concern in psychiatric practice; towards this end, clinical, psychological, physiological, biochemical, electroencephalographic and neuroendocrine measures have each been described (Abrams, 1988; Andrade et al., 1988a; Scott, 1989). One area which has merited attention in this context is the evaluation of initial response to ECT, and the relationship thereof to the course of treatment. Price et al. (1978) found improvement in affective state over the first 2 ECTs to correlate strongly with greater overall resolution of depression. Rich and Black (1985) found the first ECT in a course to have the maximum antidepressant effect. The paucity of work in this area stimulated the present investigation, which sought to evaluate and to operationalize the concept of response to the first ECT as a predictor of response of endogenous depression to ECT.

MATERIAL AND METHODS

In a double-blind, prospective trial, 32 consecutive, drug naive, non-psychotic, en-

dogenously depressed (Research Diagnostic Criteria, Spitzer et al., 1978) patients were treated with modified ECT, administered with bilateral frontotemporal electrode placement on alternate days, thrice a week. No concurrent medication was used during the study. Using pre-defined, operationalized criteria, treatment was stopped when further benefit to the patient was unlikely; at this point, a prospective definition of $\geq 75\%$ reduction in initial Hamilton Rating Scale for Depression (HRSD) scores was used to identify patients considered to have satisfactorily responded to ECT. 29 patients completed the trial; data from these patients were subjected to further analysis. Complete details of the sample and methodology are provided elsewhere (Andrade et al., 1988b & c).

RESULTS

There were 22 responders and 7 non-responders to ECT. These 2 groups did not differ in sociodemographic or clinical profile (Andrade et al., 1989).

HRSD scores (Mean \pm S. D.) in ECT responders and non-responders were $22.3 \pm$

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5.6 and 27.0 ± 5.0 respectively at pre-treatment (N. S.; Student's 't' test), 16.0 ± 7.5 and 23.0 ± 6.2 respectively after the first ECT ($p < 0.05$; Student's 't' test), and 1.4 ± 2.2 and 14.7 ± 6.4 respectively at the end of the ECT course ($p < 0.005$; 't' test with modified df). Both groups had received a comparable number of treatments— 5.7 ± 2.5 and 6.4 ± 1.3 respectively (N. S.; Student's 't' test).

These data suggest that response to the first ECT itself may predict ultimate outcome with ECT. To individualize the concept of degree of response, percentage reduction in initial HRSD scores after the first ECT was calculated for each patient; these values were 29.4 ± 21.5 and 11.2 ± 13.3 in ECT responders and non-responders respectively ($p < 0.01$, 't' test with modified df). A visual scan of plotted initial ECT response scores indicated 15% attenuation of baseline HRSD scores after the first ECT to separate fairly distinct groups of ECT responders and non-responders. Five responders and 1 non-responder were misclassified thus, yielding sensitivity and specificity values of 77.3% and 85.7% respectively. Four of the 5 misclassified responders carried an additional RDC (Spitzer et al., 1978) diagnosis of (chronic) minor depressive disorder, while no patient who was correctly classified carried this diagnosis.

DISCUSSION

The results clearly indicate that ECT responders show greater response to the first ECT than do non-responders, and hence that the first ECT in a course has predictive value in terms of outcome. To operationalize this predictive value, a cut-off point is required. The 15% attenuation of baseline HRSD scores after the first ECT is a cut-off point with reasonable specificity (85.7%; only one ECT non-responder is misclassified by this cut-off) but disappointing sensitivity (77.3%; 5 responders are herein misclassified). The observation that 4 of the 5 misclassified

responders had an underlying minor depressive disorder is therefore illuminating, as it suggests that the 15% cut-off may be viable provided that such patients are excluded from consideration. It is possible that neuroticism manifest in minor depressive disorder symptomatology may compromise perception of improvement after the initial ECT, in such patients. Such patients, by contemporary classificatory systems (DSM III/DSM III R), are sometimes termed 'doubly depressed', i.e., experiencing a major depressive disorder superimposed upon a dysthymic disorder (Akiskal and Webb, 1983).

A tentative conclusion of this study is that if a non-psychotic, endogenously depressed patient without underlying minor depressive disorder shows little or no response to the first of a course of prescribed ECTs, a switch to an alternative form of treatment may be prudent; however, a prospective validation of the proposed 15% cut-off is required with a large sample of depressed patients before such a concept of 'trial' ECT is put into practice.

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