Efficacy and safety of electroconvulsive therapy in the treatment of bipolar disorder: a systematic review

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CRD summary
The authors concluded that the efficacy and safety of electroconvulsive therapy in patients with bipolar disorder had been poorly investigated and the evidence had methodological limitations. However, high response rates were observed in patients who received electroconvulsive therapy. Given the limited quality of the evidence presented and the significant heterogeneity between trials, the authors’ concluding statement seems appropriate.

Authors’ objectives
To assess the safety and efficacy of electroconvulsive therapy (ECT) in the treatment of bipolar disorder.

Searching
MEDLINE, PsycINFO and Web of Science databases were searched through to March 2010; search terms were reported. Reference lists of retrieved articles were searched manually. There was no search for unpublished data.

Study selection
Clinical trials that assessed the safety and efficacy of ECT in the treatment of at least 10 patients with bipolar disorder were eligible for inclusion. Patients diagnosed with schizoaffective disorder (bipolar type) were considered as having a form of bipolar disorder. Studies were eligible if they compared ECT to a placebo or no treatment, or alternative treatment (such as pharmacological medication). Before-and-after studies that assessed the effects of ECT were eligible for inclusion.

Included studies were of patients with bipolar mania, bipolar depression, mixed states or compared bipolar versus unipolar depression or manic versus bipolar depressed patients. Some patients were medication resistant. Intervention patients received ECT with or without antipsychotics or chlorpromazine. Controls included simulated ECT plus chlorpromazine or antipsychotics or an antidepressant, lithium with or without haloperidol, other medications (not specified) or no treatment. Where reported, most studies used bilateral ECT. Various diagnostic criteria were used, including versions of the Diagnostic and Statistical Manual of Mental Disorders and the International Classification of Diseases. Outcome measures varied across studies and included non-operational clinical criteria, Young Mania Rating Scale and Clinical Global Impressions scale.

Two reviewers screened studies for inclusion.

Assessment of study quality
The authors did not state that they assessed trial quality, although blinding was reported for controlled/comparative trials.

Data extraction
The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
Data were presented as a narrative synthesis, grouped by type of bipolar disorder.

Results of the review
Fifty-one trials were included in the review.

ECT in bipolar mania: There were 28 clinical trials (1,651 participants). The three controlled/comparative prospective trials (one double blind) showed that ECT with or without chlorpromazine was more effective than simulated ECT or lithium. Of the six controlled/comparative retrospective trials, two reported significant benefit from ECT compared to no treatment or lithium. Overall, the non-comparative studies showed significant improvements with ECT.
ECT in bipolar depression: There were nine clinical trials (364 participants). Four retrospective comparative trials showed no significant benefit from ECT compared to antidepressants. Four of five non-comparative studies showed significant improvements with ECT.

ECT in patients with bipolar versus unipolar depression: There were 10 clinical trials (five prospective and five retrospective, 1,373 participants, 325 bipolar and 1,048 unipolar). Nine trials showed no significant differences in treatment effect.

ECT in mixed states: There were four clinical trials (121 participants). The two prospective and two retrospective non-comparative trials showed significant improvement with ECT.

ECT in patients with manic and bipolar depression: There were three clinical trials (127 participants). The two retrospective comparative/controlled trials and one retrospective non-comparative trial indicated improved outcomes with ECT.

Results from studies that compared different ECT techniques were reported in the review. The effects of ECT on patients' cognitive abilities were reported.

Authors’ conclusions
The efficacy and safety of ECT in patients with bipolar disorder had been poorly investigated and the evidence had methodological limitations. However, high response rates were observed in patients who received ECT.

CRD commentary
The review question and supporting inclusion criteria were broadly defined. The literature search did not look for unpublished data and it was unclear whether language restrictions were applied, so language and publication bias could not be ruled out. Screening of the studies was undertaken in duplicate, but it was unclear whether this was true for data extraction and so reviewer error and bias could not be ruled out. The authors did not report a formal assessment of trial quality. Most studies were retrospective and some were non-comparative, so trial quality was likely to be limited. Given the clinical and methodological heterogeneity among trials, a narrative synthesis seems appropriate.

The authors acknowledged the limited number of controlled or comparative prospective trials and that most trials had small sample sizes. Given the evidence presented, the authors’ cautious concluding statement seems appropriate.

Implications of the review for practice and research
The authors did not state any implications for practice and research.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.