

Electro convulsive therapy (ECT) in the management of bipolar mood disorder during pregnancy

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SUMMARY STATEMENT:

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REQUEST:

Electro convulsive therapy (ECT) in the management of bipolar mood disorder during pregnancy.

REQUESTED BY:

Dr. Spiri Katsenos, Senior Psychiatric Registrar, Department of Psychiatry, MMC, Clayton

METHODOLOGY

Search Strategy

The Centre for Clinical Effectiveness defined the 'best available evidence' as that research we can identify that is least susceptible to bias.

First we search for systematic reviews, evidence-based clinical practice guidelines, or health technology assessments. Then we identify diagnostic studies with independent blind comparison of an appropriate spectrum of consecutive patients, all of whom have undergone both the diagnostic test and the reference standard. If we identify sound, relevant material of this type, the search stops. Otherwise, our search strategy broadens to include studies that are more prone to bias, less generalizable, or have other methodologic difficulties. While we cite observational and case series studies, and narrative reviews and consensus statements, in our reports we do not critically appraise them. Some studies can produce accurate results but they are generally too prone to bias to allow determination of their validity beyond their immediate setting.

Details of Evidence Request:

Patient/condition: Pregnant women with bipolar mood disorder
Intervention: Electro convulsive Therapy (ECT)
Comparisons: Placebo, all other treatments.
Outcome: Clinical outcomes, foetal development, adverse events

Search terms:

The following search terms were used to scour electronic databases and websites:

Table 1. Search terms used in the retrieval of articles from electronic databases and websites

Field of focus	Search term
Condition-related	Bipolar Disorder, bipolar mood disorder, depressive disorder, depression postpartum, postnatal depression, antenatal depression, maternal distress, maternal depression, pregnancy complications/psychiatry, manic depression
Intervention-related	Electroconvulsive therapy, Electro convulsive therapy, ECT, electroconvulsive shock therapy
Outcome-related	Side effects, clinical outcome, adverse events, treatment outcomes, effectiveness.

Resources Searched

We searched the following databases and Internet websites:

Cochrane Library CD-ROM- Issue 1, 2001
Medline (OVID)- 1966 to February 2001
Best Evidence (OVID)- 1991 to January/February 2001
CINAHL (OVID) – 1982 to March 2001
PreMedline (OVID)- April 2, 2001
PsycINFO (OVID)- 1984 to April week 3 2001

Refinements, Searching & Reporting Constraints:

We included items of evidence that were available to us on 27 April 2001. The search was restricted to humans, females, and articles published in English in the last 10 years.

RESULTS:

From our sources we identified 7 articles related to the request that were categorised as follows:

Table 2. Study designs of articles retrieved by search

Study Design	Number included
Systematic reviews or meta-analyses	1
Evidence-based clinical practice guidelines	0
Randomised controlled trials	0
Controlled trials, cohort or case-control analytic studies	2
Case series, consensus reports, Narrative reviews	4

Articles were excluded from further appraisal as follows:

Table 1: Reasons for exclusion of articles retrieved by search

Reason for exclusion	Number
Assessed risk factors for post partum psychosis	1
Case series/reports	4
Abstract only, the whole article is not available for appraisal	1

This left us with one systematic review for appraisal. We have critically appraised the systematic review. We are reasonably confident this article represents the most important findings published to date based on our refinements, searching and reporting constraints.

EVIDENCE SUMMARIES

Format

Evidence summaries are in the form of spreadsheets reproduced at the end of this report. Each spreadsheet contains the article citation, the study design, patient description, scientific validity of the article, results, and pertinent remarks from the authors and Centre for Clinical Effectiveness reviewer.

REFERENCES

ARTICLES CRITICALLY APPRAISED FOR THIS REPORT

Miller, L. J. (1994). "Use of electro convulsive therapy during pregnancy." Hospital & Community Psychiatry **45**(5): 444-50.

ARTICLES NOT CRITICALLY APPRAISED

Agrawal, P., M. S. Bhatia, et al. (1997). "Post partum psychosis: a clinical study." International Journal of Social Psychiatry **43**(3): 217-22.

Bhatia, S. C., S. A. Baldwin, et al. (1999). "Electro convulsive therapy during the third trimester of pregnancy." Journal of ECT **15**(4): 270-274.

Cutajar, P., D. Wilson, et al. (1998). "ECT used in depression following childbirth, in a woman with learning disabilities." British Journal of Learning Disabilities **26**(3): 115-7.

Langer, G., R. Karazman, et al. (1995). "Isoflurane narcotherapy in depressive patients refractory to conventional antidepressant drug treatment. A double-blind comparison with electro convulsive treatment." Neuropsychobiology **31**(4): 182-94. (Abstract only and the whole article is not available to us)

Moreno, M. E., J. M. Munoz, et al. (1998). "Electro convulsive therapy in the first trimester of pregnancy." Journal of ECT **14**(4): 251-254.

Polster, D. S. and K. L. Wisner (1999). "ECT-induced premature labor: A case report." Journal of Clinical Psychiatry **60**(1): 53-54.

APPENDIX

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Levels of Evidence

Based on "How to use the evidence: assessment and application of scientific evidence" (National Health & Medical Research Council, Canberra, 2000):

Level I	Evidence obtained from a systematic review of all relevant randomised controlled trials.
Level II	Evidence obtained from at least one properly designed randomised controlled trial.
Level III-1	Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method).
Level III-2	Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomized, cohort studies, case control studies, or interrupted time series with a control group.
Level III-3	Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group.
Level IV	Evidence obtained from case series, either post-test or pre-test/post-test.

<p>Evidence Summary</p> <p>Electro convulsive therapy in the management of bipolar mood disorder during pregnancy</p>	<p style="text-align: center;">Study 1</p> <p>Miller, L. J. (1994). "Use of electro convulsive therapy during pregnancy." <i>Hospital & Community Psychiatry</i> 45(5): 444-50.</p>
<p>STUDY DESIGN & NHMRC LEVELS OF EVIDENCE</p>	<p style="text-align: center;">Review (Level I)</p>
<p>DESCRIPTION: Subjects, Interventions, Comparisons, Outcomes, Inclusion & Exclusion Criteria</p>	<p>Patients: Pregnant women Intervention: Electro convulsive therapy (ECT). Comparison: None Outcomes: Potential risks (effects) of Electro convulsive (ECT) during pregnancy. Inclusion criteria: Published case reports of ECT during pregnancy.</p>
<p>VALIDITY: Methodology, rigour, selection, opportunity for bias</p>	<p>Search strategy: MEDLINE (1942-1991). Other databases were not searched. Not stated if search was confined to English articles only. Assessed validity: No Consistent results: Not stated Potential for bias: Literature search was limited to Medline (retrieval bias). Did not search for unpublished materials (publication bias).</p>
<p>RESULTS: Generally favourable or unfavourable, specific outcomes of interest, estimate of experimental effect and precision if appropriate</p>	<p>300 case reports of ECT during pregnancy were identified. Twenty-eight of the 300 cases reported complications associated with ECT during pregnancy, including transient, benign fetal arrhythmias; mild vaginal bleeding; abdominal pain; and self-limited uterine contractions. Without proper preparation, there was also increased likelihood of aspiration, aortocaval compression, and respiratory alkalosis.</p>
<p>AUTHORS COMMENTS: Risk/benefit, limitations</p>	<p>"ECT is a relatively safe and effective treatment during pregnancy if steps are taken to decrease potential risks. Preparation for ECT during pregnancy should include a pelvic examination, discontinuation of nonessential anticholinergic medication, uterine tocodynamometry, intravenous hydration, and administration of a nonparticulate antacid. During ECT, elevation of the pregnant woman's right hip, external fetal cardiac monitoring, intubation, and avoidance of excessive hyperventilation are recommended. Informed consent for ECT should include the patient's capacity to understand and rationally evaluate risks and benefits to herself and the fetus."</p>
<p>REVIEWER'S COMMENTS: Risk/benefit, methodology, conclusions</p>	<p>Strengths</p> <ul style="list-style-type: none"> • Research aims were clear. • Clear inclusion criteria. • Reported search strategy • Used the available data to evaluate the use of ECT during pregnancy. • A review of the available evidence <p>Weaknesses</p> <ul style="list-style-type: none"> • Did not report fully their search strategy including search terms used • Not clear if literature search was limited to English language only. • Only Medline database was searched Retrieval bias. • No attempt was made to identify unpublished materials (possible publication bias). • Not clear how data were extracted for review • Not clear how the differences between the studies were investigated <p>In conclusion, this review is based on published case reports of the use of ECT during pregnancy. A prospective control study is needed to evaluate the potential risks and benefits associated with the use of ECT during pregnancy.</p>