

ECT in the Postpartum Period: A Retrospective Case Series from a Tertiary Health Care Center in India

Sandeep Grover, Swapnajeet Sahoo, Subho Chakrabarti, Debashish Basu, Shubh M. Singh, Ajit Avasthi

ABSTRACT

Objective: To evaluate the clinical profile and effectiveness of ECT in females with postpartum onset psychiatric syndromes or worsening of psychiatric disorder during the postpartum period. **Materials and Methods:** A retrospective chart review was carried out to identify females who had received ECT during their postpartum period from January 2004 to April 2017. **Results:** During the study period, 13 females in their postpartum period received ECT, which accounted for 2.24% of the total females ($n = 578$) who had received ECT and 1% of total patients who were administered ECT during this period. The most common clinical diagnosis was postpartum depression ($n = 7$; 53.86%). Three (23.1%) patients were diagnosed with bipolar disorder and had experienced a relapse during the postpartum period. Two (15.4%) patients were diagnosed with schizophrenia and 1 (7.7%) patient was diagnosed with postpartum psychosis/acute and transient psychotic disorder. ECT was considered as a treatment of choice in 9 (69.2%) patients. All the patients with depression or mania achieved clinical remission, and patients with psychotic disorders also had significant reduction in their symptoms. Cognitive complaints were reported by 4 (30.8%) patients, and aches and pains after ECT were reported by 7 (53.8%). **Conclusion:** ECT is a safe and effective treatment option in postpartum onset psychiatric syndromes or patients experiencing relapse or exacerbation of severe mental disorders during the postpartum period and is associated with a very good response rate with minimal or no complications.

Key words: Depression, electroconvulsive therapy, postpartum

INTRODUCTION


As per World Health Organization, postpartum period is the period that begins immediately after the birth of a child and extends for about 6 weeks.^[1] However, for the purpose of defining various psychiatric syndromes, which have their onset in the postpartum period, the cutoff for the onset of the disorder is taken to be 3

months but can extend up to even 1 year.^[2,3] Three types of postpartum onset psychiatric disorders have been identified, that is, postpartum blues, postpartum depression, and postpartum psychosis. Apart from new-onset psychiatric disorders, the postpartum period is also associated with relapse of severe mental disorders

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Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh, India

Address for correspondence: Dr. Sandeep Grover
Department of Psychiatry, Post Graduate Institute of Medical Education and Research, Chandigarh - 160 012, India.
E-mail: drsandeepg2002@yahoo.com

like schizophrenia, bipolar disorder (BD), and recurrent depressive disorders.^[4-6] Postpartum period is a very critical period that can either lead to the development of new psychiatric disorders or can lead to instability in previously diagnosed severe mental illness. The relapse of symptoms during the postpartum period can impose a significant management challenge during this vulnerable period.^[7]

Although adequate and urgent treatment is necessary when one develops postpartum onset psychiatric syndrome or experiences a relapse of preexisting psychiatric conditions, use of pharmacological agents have certain limitations like lag period in the onset of therapeutic effect, drug interactions, and the risk of secretion in breast milk leading to adverse consequences for the newborn.^[8] When required, use of electroconvulsive therapy (ECT) during the postpartum period is often regarded as a safe and effective treatment strategy.^[9] The existing literature on the use of ECT in the postpartum period is limited to a few case reports/series,^[2,10-14] retrospective register-based studies,^[15-18] and a few prospective studies.^[19,20] In a review of literature that included data published up to September 2014, authors reported the existence of eight case reports and eight studies.^[14] These reports varied in defining the onset of postpartum-related psychiatric syndromes, with some taking 3 months as the cutoff^[15] and others taking onset up to 11 months.^[2,21] Most studies had reported positive outcome with ECT in the majority of the patients. One prospective study included in that review evaluated 78 females with postpartum psychosis and reported use of ECT in 34 (43.6%) cases. The common indications for ECT were the presence of catatonia, augmentation of medications, and the presence of suicidality.^[20] A few more studies have been published since the publication of that review. A recent retrospective study, which evaluated catatonia among female with postpartum psychosis in a mother-baby inpatient psychiatry unit, reported the usefulness of ECT in 19 females who did not respond to lorazepam trial.^[18] Another retrospective study reported that 3.7% of total ECTs were administered to patients with postpartum psychosis.^[22] A retrospective study which evaluated the use of ECT in females from Turkey reported that only 3.24% of females admitted to a psychiatric inpatient unit received ECT, of which 20% of ECTs were used during the postpartum period.^[23]

From the above literature, it is apparent that the literature is limited with regards to the use of ECT in patients with postpartum onset illness or those experiencing a relapse during the postpartum period. There are several challenges in using ECT in the postpartum period vis-à-vis routine patients. Some of these issues include the use of anesthesia in the

postpartum period, issues related to breastfeeding, need for quick resolution of symptoms, and ECT-related memory/cognitive deficits that can affect child care and mother-child bonding. In view of limited literature on the topic, present retrospective chart review aimed to evaluate the effectiveness and safety of ECT in patients with postpartum onset illness or those experiencing a relapse during the postpartum period.

MATERIALS AND METHODS

This study was done in a multispecialty, tertiary care center in North India. The study was approved by the Ethics Committee of the institute.

For this study, the ECT register of the department was used to identify the patients who received ECT for postpartum onset illness or those experiencing a relapse during the postpartum period. At the first step, ECT register for the period January 2004–April 2017 was screened to identify all the female patients who received ECT. Their treatment records were retrieved and reviewed. Only those cases who had postpartum onset illness (i.e., onset of a psychiatric syndrome or a relapse within 3 months of childbirth) were taken up for the study. Patients who were started on ECT during the pregnancy and were continued through to postpartum were excluded. Descriptive statistics were used to analyze the data. SPSS version 14 was used for the analysis. Descriptive statistics in mean and standard deviation were calculated for the continuous variables; and frequency and percentages for the categorical variables.

RESULTS

During the study period, 1,302 patients received ECT, of which 578 (44.39%) were females. ECT was used in only 13 (2.24%) females experiencing postpartum onset illness or those experiencing a relapse during the postpartum period, which was only 1% of the total number of patients who received ECT. These patients formed the study sample.

Sociodemographic and clinical details of the patients included in the study are provided in Table 1.

ECT was considered as a treatment of choice, taking the clinical picture into account, in approximately 70% of the patients ($n = 9$; 69.2%). Various indications for the use of ECT are provided in Table 2.

ECT-related parameters

The mean number of effective ECTs received by each patient was 7.30 (SD, 2.65; range, 3–12) and other ECT related details are given in Table 2.

Table 1: Sociodemographic and clinical profiles

Parameters	Mean (SD)/n (%); range
Age (years)	26.92 (3.68); 22-34
Age group (years): 15-24/25-34	5 (38.5)/8 (61.5)
Education (years)	11.53 (3.73); 5-17
Religion: Hinduism/Sikhism/Islam	6 (46.2)/6 (46.2)/1 (7.7)
Socioeconomic status: middle/low SES	12 (92.3)/1 (7.7)
Occupation: housewife/skilled worker (employed)	10 (76.9)/3 (23.1)
Diagnosis	
Severe depressive episode without psychotic symptoms	3 (23.1)
Severe depressive episode with psychotic symptoms	4 (30.76)
Postpartum psychosis (ATPD)	1 (7.7)
BPAD, severe depression without psychotic symptoms	1 (7.7)
BPAD, mania with psychotic symptoms	2 (15.4)
Schizophrenia (relapse/catatonia)	2 (15.4)
Duration of symptoms since postpartum (in days)	57.76 (40.80); 15-150
Total duration of illness (in months)	15.92 (21.73); 0.5-72
Onset: insidious/acute	2 (15.4)/11 (84.6)
Precipitating factor: present	8 (61.5)
Course: worsening/steady/fluctuating	11 (84.6)/1 (7.7)/1 (7.7)
Medical comorbidity: present ¹	3 (23.1)
Pregnancy order: 1 st /2 nd	9 (69.23)/4 (30.76)
No of living children	1.3; 1-2
Type of delivery: vaginal/cesarean	10 (76.92)/3 (23.1)
Gender of the baby: male/female	8 (61.53)/5 (38.14)
Any complications related to pregnancy: present ²	2 (15.4)
Inpatient/outpatient management	7 (53.8)/6 (46.2)
Symptoms at the time of presentation: present	
Motor retardation	6 (46.2)
Depressive symptoms	9 (69.2)
Manic symptoms	3 (23.1)
Suicidal ideations/planning	7 (53.8)
Psychotic symptoms	9 (69.23)
Altered biofunctions	12 (92.3)
Obsessive compulsive symptoms	2 (15.4)
Family history of mental illness: present ³	5 (38.5)
Medications during the index episode	
Mood stabilizers ⁴	2 (15.4)
Antidepressants ⁵	8 (61.5)
Antipsychotics ⁶	11 (84.6)
Benzodiazepines ⁷	9 (69.23)

¹Medical comorbidity: three patients had hypothyroidism; ²pregnancy-related complications: two patients had pregnancy induced hypertension; ³family history of mental illness: three patients had a family history of depression, and two had a family history of BD; ⁴mood stabilizers: lithium ($n=2$); ⁵antidepressants: venlafaxine ($n=2$), escitalopram ($n=5$), and fluoxetine ($n=1$); ⁶antipsychotics: olanzapine ($n=9$), haloperidol ($n=1$), and chlorpromazine ($n=1$); ⁷benzodiazepines: lorazepam ($n=6$) and clonazepam ($n=3$). SES: Socioeconomic status ATPD: Acute and Transient Psychotic Disorder BPAD: Bipolar Affective Disorder

Effectiveness and safety of ECT

All patients showed improvement with ECT to the extent that all patients with depression and mania

Table 2: ECT-related parameters

ECT parameters	Mean (SD)/%
Indications for ECT	
Poor response to medications	5 (38.5)
Poor oral intake	4 (30.8)
Suicidality	5 (38.5)
Required early response	10 (76.9)
ECT considered as a choice of treatment	9 (69.2)
Catatonic symptoms	7 (53.8)
Marked psychomotor retardation	4 (30.8)
Number of ECTs administered	7.30 (2.65); 3-12
Number of ECT	
1-5	4 (30.8)
6-10	7 (53.8)
>10	2 (15.4)
Mean charge in millicoulombs	124.69 (58.16); 48-240
Mean energy in joules	29.57 (13.53); 11-55
Mean seizure duration in seconds	40.73 (8.51); 27.6-55
Anesthesia used: thiopentone/propofol	12 (92.3)/1 (7.7)
Any immediate complications: present	Nil
Delayed complications:	
Cognitive deficits	4 (30.8)
Aches and pains	7 (53.8)
Overall improvement: >50%	13 (100)
Reasons for stopping ECT: response plateau in last 2 ECTs	13 (100)

ECT: Electroconvulsive Therapy

achieved clinical remission [Table 3]. Patients with psychotic disorders also had a significant reduction in the rating scales. In all cases, ECT was stopped because of achieving a plateau of response. No patient required maintenance ECTs. No immediate complications were experienced in any case, but delayed complications in the form of cognitive complaints were reported by 4 (30.8%) patients, and aches and pains after ECT were reported by 7 (53.8%) patients. All the babies were breastfed during the postpartum period, and none of the babies had any observable/reported adverse effects.

DISCUSSION

The onset of psychiatric symptoms during the postpartum period requires a quick and effective relief as it hampers both maternal and infant health as well as mother–infant bonding. Long-term untreated psychosis/depression/mania during the postpartum period can not only lead to a worse prognosis for the patient but also could lead to behavioral problems and difficult temperament in the children.^[24,25] Use of psychotropic medications is associated with a lag time for response and adverse effects for both the mother and the newborn.

ECT can be considered as a safe option in the postpartum period. However, there is limited data on the effectiveness of ECT in females during the

Table 3: Details of all the 13 patients who received ECT during postpartum period

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10	Patient 11	Patient 12	Patient 13
Age	30	24	34	26	28	28	24	28	25	33	22	24	24
Diagnosis as per ICD-10	F 32.3	F 32.2	F 32.2	F 23.0	F 20.0	F 32.3	F 31.5	F 20.3	F 32.2	F 31.2	F 31.2	F 32.3	F 32.3
Time to onset/relapse/ exacerbation of symptoms after the childbirth (in days)	60	60	90	30	23	28	25	120	150	30	60	15	60
Primipara/multipara	Primipara	Primipara	Primipara	Primipara	Primipara	Primipara	Primipara	Multipara	Primipara	Multipara	Primipara	Primipara	Multipara
Gender of the child	Male	Male	Female	Male	Female	Male	Female	Female	Male	Male	Female	Male	Male
Baseline rating on scale	HDRS-29	HDRS-28	HDRS-24	BPRS-78	PANSS-128	HDRS-27	HDRS-30	BFCRS-18	HDRS-28	YMRS-29	YMRS-32	HDRS-30	HDRS-29
Post ECT rating on the scale	HDRS-4	HDRS-5	HDRS-6	BPRS-35	PANSS-67	HDRS-6	HDRS-6	BFCRS-0	HDRS-7	YMRS-3	YMRS-4	HDRS-5	HDRS-6
Antipsychotics used during ECT	Olanzapine	-	Olanzapine	Olanzapine	Olanzapine	Olanzapine	Haloperidol	Olanzapine	-	Chlorpromazine	Olanzapine	Olanzapine	Olanzapine
Antidepressants used during ECT	Venlafaxine	Fluoxetine	Escitalopram	-	Escitalopram	Escitalopram	Escitalopram	-	Venlafaxine	-	-	Escitalopram	Escitalopram
Mood stabilizer used during ECT	-	-	-	-	-	-	Lithium	-	-	-	Lithium	-	-
Benzodiazepines used during ECT	Clonazepam	-	-	Lorazepam	Lorazepam	Lorazepam	-	-	Clonazepam	Lorazepam	Lorazepam	Clonazepam	Lorazepam
Total number of ECT sessions	10	5	6	5	11	12	7	8	8	3	5	6	9
Mean charge in Millicoulombs	100.8	77	48	72	174.54	192	100	240	156	152	158	60	90.66
Mean seizure duration in seconds	40.8	53	52	55	38.36	35.45	35	32.3	45	27.6	33	41.33	40.66
ECT-related complications	-	-	Memory disturbances	-	Aches and memory disturbances	Aches and memory disturbances	Memory disturbances	Aches	Aches	-	Aches	Aches	Aches

HDRS – Hamilton depression rating scale score; BPRS – Brief psychiatric rating scale score; PANSS – Positive and negative syndrome scale total score; YMRS – Young mania rating scale score; BFCRS – Bush Francis Catatonia Rating scale

postpartum period.^[2,14,19,20,23] Present study adds to the limited literature on this topic.

The present study showed that in a span of about 13.5 years, female patients comprised of about 45% of total patients receiving ECT and of them, only 2.24% received ECT during the postpartum period. Previous studies regarding the percentage of females receiving ECTs have also shown that only half of the subjects receiving ECTs are females^[22] and more females than males are referred for ECT.^[26] However, these findings are contrary to some of the studies that have shown females to form a very small proportion of patients receiving ECT.^[23] Studies have also shown that about 20% of the females receiving ECTs are usually in their postpartum period^[23] and the diagnosis is more often postpartum psychosis^[20] and postpartum depression.^[2,14] In contrast, in our sample, females receiving ECT in the postpartum period formed only a very small proportion of all patients receiving ECT and females receiving ECT. These differences possibly reflect differences in the patient profile seen at various centers and possible cultural differences in acceptance of ECT.

Existing literature suggests that most patients who develop postpartum onset psychiatric syndromes are primipara and that these disorders are mostly seen during the third decade of life. These findings possibly suggest that primipara females in the third decade of life are possibly at greater risk of developing psychiatric disorders.^[2,27,28] Most of our patients who received ECT were also in their third decade of life and primipara (after their first childbirth). A few studies had detected an association of birth of a female baby with the development of postpartum psychosis.^[19] However, in the present study, most of the subjects had given birth to a male baby. These findings possibly suggest that postpartum onset of the psychiatric syndrome has more to do with the biological, hormonal changes rather than just the psychosocial issues.

Most patients in the present study who received ECT had postpartum onset illness, mainly postpartum depression. Overall, depression was the most common reason for the use of ECT and in more than half of the cases and depression was associated with psychotic symptoms. Existing literature on the use of ECT in postpartum psychiatric disorders also suggests that depression is the most common reason for the use of ECT in the postpartum psychiatric syndromes.^[9,29,30] Existing literature suggests that depression, suicidality, and catatonia are the most common indications for the use of ECT in patients with postpartum psychiatric syndromes.^[18,20,23] In the present study too, similar indications were noted for giving ECT. Further, in

about more than two thirds of our cases, ECT was considered as a treatment option to achieve early treatment response. Previous studies also suggest that ECT is considered during the postpartum to achieve early treatment response.^[2,20,25-27]

All our patients had significant improvement with the mean number of 7.3 ECTs. Existing data also suggest that patients with postpartum depression and psychosis respond rapidly to ECT with an early and complete remission of symptoms.^[2,21,22,27] These findings suggest that ECT should be considered as an option for management of severe postpartum onset disorders or for patients with severe mental disorders experiencing a relapse in the postpartum period.

The main adverse effects reported by some of our patients were aches and pains and cognitive disturbances, which were self-limited. These are common adverse effects of ECT in any age group, and similar findings have been reported by previous studies among patients receiving ECT for postpartum mood and psychotic disorders.^[9,14]

Small sample size and retrospective nature of data are the obvious limitations of the present study, and prospective studies with a large sample are required to address the safety and efficacy of ECT in the postpartum period. No formal standardized instrument was used for assessment of cognitive functions, and these were enquired based on subjective complaints of memory disturbances by the patients.

CONCLUSION

To conclude, the present study suggests that ECT is a safe and effective treatment option in managing postpartum onset psychiatric syndrome or patients experiencing relapse or exacerbation of severe mental disorders during the postpartum period.

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Conflicts of interest

There are no conflicts of interest.

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