

Original Research Article

Clinical and demographic profile of patients treated with electroconvulsive therapy from a tertiary care psychiatry hospital in North India

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ABSTRACT

Background: Electro-convulsive therapy (ECT) refers to the electrical stimulation of the brain to produce seizures for therapeutic purpose. This study was undertaken with the aim of exploring the clinical and demographic profile of patients treated with ECT from a tertiary care psychiatry hospital in north India.

Methods: It was a retrospective descriptive study of patients who were treated with ECT after admission in the inpatient psychiatry unit of Institute of mental health and neurosciences Kashmir during a period of one year (March 2017 to February 2018).

Results: A total of 70 patients received ECT during the course of one year. About 72.85% of the patients belonged to 20-39 years age group. Female patients constituted more than half of the subjects (55.71%). Review of diagnostic profile showed that majority of patients receiving ECT were suffering from Schizophrenia (35.71%), followed by bipolar affective disorder (28.57%), depressive disorder (28.57%), schizoaffective disorder (4.28%) and substance induced mood/psychotic disorders (2.85%). A significant majority of subjects (57.13%) received about 7-9 ECT sessions. No any major complications were noted during ECT treatment.

Conclusions: This study suggests that ECT, use as a treatment modality is common in adults between 20 to 39 years of age and females with Schizophrenia being the most common indications.

Keywords: Bipolar affective disorder, Electro-convulsive therapy, Schizophrenia, Seizures

INTRODUCTION

ECT refers to the electrical stimulation of the brain to produce seizures for therapeutic purpose. This seizure is effective in controlling the psychiatric symptoms. In current day practice, it is indicated for various psychiatric and neurological illnesses. Major diagnostic considerations include major depression (unipolar, bipolar), mania, acute schizophrenia, schizoaffective disorder and neurological disorders like parkinson's disease, catatonia, neuroleptic malignant syndrome. Major clinical considerations where ECT is indicated

includes: need for rapid response on medical or psychiatric grounds (suicidality, inanition), history of treatment-resistance or excessive risk of alternative treatments, severity of illness, history of positive response to ECT, patient's preference.¹

METHODS

The retrospective study was conducted at institute of mental health and neurosciences Kashmir which is one of the premier mental health institutes of north India. The study was approved and given clearance by the

Institutional ethical committee and is based on the data of inpatients who received ECT from March 2017 to February 2018.

Decision to deliver ECT was taken individually for each patient by consultant psychiatrist based on the indications for the particular case. A total of 70 patients received ECT during the mentioned period which included the patients who gave consent and received anesthetic clearance before the procedure. However the patients who did not consent were excluded.

Consenting patients underwent a thorough physical assessment and relevant investigations were done for pre anesthetic clearance. Diagnoses was based on International Statistical Classification of Disease, tenth revision (ICD-10).² Patients who were found fit were administered brief-pulse, bilateral modified ECT twice a week during the acute phase. All the patients received ECT by fixed dosing method.

Demographic and clinical details of patients who received ECT were recorded in the Performa developed for the study. The data was entered into excel sheet and tabulated. The data was analyzed using EpiInfo 7.0. Categorical variables were summarized as frequency and percentage. Continuous variables were summarized as mean and standard deviation.

RESULTS

During the study period of 1 year, a total of 70 inpatients received modified ECT at Institute of mental health and neurosciences Kashmir. The mean age of the subjects was 28.63±10.04 years. Majority (72.85%) of the patients belonged to the age group 20-39 years. Out of the 70 subjects, more than half of the subjects were female (55.56%). A detail of the distribution of subjects according to the age and sex is shown in (Table 1).

Table 1: Age and Sex distribution.

	Age group	Number (n=70)	Percentage
Age (Years)	≤19	2	2.85
	20-29	20	28.57
	30-39	31	44.28
	40-49	11	15.71
	50-59	4	5.71
	≥60	2	2.85
	Total	70	100
Sex	Male	31	44.28
	Female	39	55.71
	Total	70	100

Majority of patients receiving ECT were suffering from schizophrenia (35.71%), followed by bipolar affective disorder/mania (28.57%), depressive disorder (28.57%),

schizoaffective disorder (4.28%) and substance induced mood/psychotic disorder (2.25%) as shown in (Table 2).

Table 2: Clinical diagnosis of patients receiving ECT.

Diagnoses	Number of patients (n=70)	Percentage
Substance induced mood/psychotic disorder	2	2.85
BPAD	20	28.57
Schizophrenia	25	35.71
Depressive disorder	20	28.57
Schizoaffective disorder	3	4.28
Total	70	100

Most of the patients (57.13%) received about 7-9 cycles of ECT during the acute phase. The maximum number of ECTs given the acute phase for each individual was 10 and about 2.85% subjects received only a single cycle of ECT as depicted in (Table 3). All of the patients received modified ECT only.

Table 3: Number of ECT sessions Received during acute phase.

No. of ECT sessions received	Frequency (n=70)	Percentage
1	2	2.85
2	3	4.28
3	2	2.85
4	6	8.57
5	8	11.42
6	6	8.57
7	12	17.14
8	16	22.85
9	12	17.14
10	3	4.28
Total	70	100

DISCUSSION

Age of patients in this study ranged from 16-61 years with the mean age of 28.63±10.04 years. More than half (72.85%) of the patients receiving ECT belonged to the age group 20-39 years which is consistent with the studies done by Sherchan et al and Abraham et al.^{3,4} This corroborates with the fact that majority of the psychiatric morbidities, including depression; bipolar disorder and schizophrenia have an onset in this age group. In countries such as the United States, patients treated with ECT are mostly elderly, perhaps because elderly subjects have greater medical co-morbidity, take more concurrent medicines, and tolerate antidepressant drugs less well.⁵ In Asian sample, approximately 73% of patients were aged 18 to 44 years.⁵ A study conducted by Damm et al. confirmed the effectiveness of ECT irrespective of age.⁶

Though not contraindicated, ECT is not commonly used in extremes of age. Grover S et al. concluded that Electroconvulsive therapy is used less frequently in children and adolescents compared to the older patients.⁷ ECT in adolescents is mostly used for psychotic disorders especially schizophrenia.⁸

Gender of a patient has no role in ECT treatment. However, many studies report that majority of patients receiving ECT are females (up to 70%). In a study done by Schweder et al. the male-female ratio of patients receiving ECT was 1:2.⁹ A systematic review by Leiknes et al. also confirmed the predominance of patients receiving ECT to be females.¹⁰ Our study is consistent with the findings of these studies with predominance of female patients (55.71%). In a retrospective chart review conducted by Bloch et al. to see the gender differences in electroconvulsive therapy, it was found that depressed female patients underwent significantly fewer antidepressant drug trials than males before being referred to ECT.¹¹

A similar gender difference was found in the treatment of patients suffering from schizophrenia: female patients underwent fewer pharmacological antipsychotic trials than males before being referred to ECT. ECT was significantly more effective in female patients than in male patients suffering from schizophrenia.

The number of ECT treatments delivered to a particular patient varies according to the diagnosis and clinical improvement. In general, textbooks recommend that the course of treatment of major depressive disorder can take 6-12 treatments, manic episode can take 8-20 treatments, schizophrenia can take more than 15 treatments, catatonia and delirium can take as few as 1-4 treatments.¹² However, it is not so high in practice. In our study, majority (57.13%) of subjects received 7-9 cycles of ECT. About 2.47% patients received a single ECT treatment.

Monitoring of seizure duration remains an important part of ECT practice. The mean seizure duration in our study was 26.13 ± 5.79 seconds (maximum 45 seconds and minimum 12 seconds). For an ECT to achieve a therapeutic response, it is necessary to induce a generalised tonic-clonic seizure. It is also noted that ECT that fails to induce a seizure and immediate termination of a seizure after induction does not result in clinical improvement.¹³ On the contrary; some of the latest research suggests that the length in time of the seizure activity or the tonic-clonic convulsion is not related to clinical effectiveness. The effectiveness of ECT is related to the quality of seizure activity and cannot simply be related to its length in time alone. One of the important parameters in predicting clinical response is the degree to which electrical stimulus exceeds the seizure threshold.¹⁴

ECT was originally used for treating patients with schizophrenia. However, studies subsequently proved

ECT's effectiveness in major depressive disorder thus changing the trend of its use in developed countries. Studies from developed countries show that significantly higher number of patients receiving ECT suffering from mood disorder especially depression. This is in contrast to the findings from Asian studies which show that schizophrenia is the commonest diagnosis among patients receiving ECT.¹⁵ A survey of practice of ECT in India showed that patients with schizophrenia received ECT most frequently (36.5%), followed by patients with major depression (33.5%), mania (17.9%) and a similar trend has also been reported for Asian countries by the same group of authors.⁵ The finding of our study was consistent with the finding of these surveys as majority of patients receiving ECT in our study were suffering from Schizophrenia.

Out of 70 patients enrolled in this study, 2(2.85%) of the subjects receiving ECT were suffering from Substance induced Mood/Psychotic disorders. Though not commonly used to treat these conditions, ECT can be used to control agitation and psychosis in this group of patients. There are few case reports available in the current literature regarding this off-label use of ECT. Bruce et al. used ECT to treat steroid induced depressive psychosis.

Similarly, Dwight et al were successful in treating organic psychosis in Huntington's disease by using ECT. Dinwiddie et al. reported three cases of PCP-associated psychosis that did not respond to at least 2 weeks of antipsychotic treatment but subsequently responded rapidly to ECT.¹⁶ Thus, concluded that ECT should be considered as a treatment early in the course of drug-associated psychoses in which an adequate trial of antipsychotic medication has not been effective. ECT may reasonably be considered for certain life-threatening conditions, particularly when other treatment options have been exhausted or when the patient has a history of a positive response to ECT. Though, it has been used in various conditions, a detailed study should be conducted to conclude whether it's really appropriate to use ECT in such conditions.¹⁷

The important limitation of this study is that sample size is small hence it is difficult to generalize the findings of this study.

CONCLUSION

This study suggested that use of ECT treatment was common among adult patients and females. The most common indication for ECT was Schizophrenia which was consistent to the findings of other Indian studies.

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