Treatment Efficacy and Quality of Life after Modified ECT in Manic Patients

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Abstract
Background: Modified Electroconvulsive therapy (ECT under general anaesthesia) is an established form of treatment in major psychiatric disorders and is widely used throughout the world (Abraham1997).It is used to reduce the risk of relapse and recurrence of illness in patients who are resistance to standard medical treatment or who require urgent treatment.
Aim: The aim of the current study was to investigate the efficacy of Modified Electo-convulsive therapy on psychopathology, quality of life and cognitive functions of manic patients.
Method: Pre –post design is used in this study. The sample consisted of 30 (n=30) patients diagnosed as mania . The sample was further randomly reallocated to two sub groups (a)Modified ECT plus Medicine (b) Medicine alone. Then the following tools such as MRS, SMMSE, BCRS, GAF, PCASEE were administered to each patient of both the groups. The patients under ECT group received a course of six ECT in a span of 21 days. Follow up assessment was made after 3 months in both the groups.
Results: After 3 months quality of life, mental state and severity of mania improved significantly in the group of patients receiving modified ECT and medication.
Conclusion: Patients received modified ECT and medicine evidenced significantly greater improvements in quality of life than the patients who received only medicines.

Key words: Modified ECT, Mania, Quality of life.

I. Introduction

Treatment outcome is the major focus of researchers specifically in schizophrenia due to chronicity of illness, wide variation in psychopathology and frequent relapse. Quality of life (QOL) is considered as one of the most important dimensions of outcome in serious mental disorders. (Narvaez et al. 2008). Several researches have been conducted to develop an understanding of the determinants of quality of life. Though early identification and treatment of mental disorders enhances QOL (Franz et al 1997) but other factors such as occupational status, social participation, psychopathology ,living environment etc. have significant influence in quality of life. Among the determinants of QOL the general psychopathology is the strongest contributor to poor QOL. (Greenet al 2001). But symptom reduction alone often does not result in meaningful improvements in QOL.

Modified Electroconvulsive therapy (ECT under general anaesthesia) is an established form of treatment in major psychiatric disorders and is widely used throughout the world (Abraham1997). It is used to reduce the risk of relapse and recurrence of illness in patients who are resistance to standard medical treatment or who require urgent treatment. An emerging literature demonstrates the importance of ECT in restoring function and health related quality of life in depressed patients (McCalleta,l 2011; McCalletal, 2006). In comparison to antidepressants, modified ECT is associated with better and faster response (Gangadher et al; 1987). Actually, mania is considered the third most common indication for ECT in psychiatric practice. (APA, 1995, Dubvobsky & Buzan1997). Mukherjee et al. reviewed 15 studies and reported the response rates of ECT in the treatment of mania. In his study 80% of patients showed remission or marked clinical improvement. Results of a study

revealed that among patients with severe mania, ECT proved to be superior to lithium (Small et al 1988). Mukerjee et al. studied the efficacy of ECT and haloperidol plus lithium in manic patients who did not show a good previous response to neuroleptics or lithium and found 77% improvement.
The aim of the current study was to investigate the efficacy of Modified Electoconvulsive therapy on psychopathology, quality of life and cognitive functions of manic patients.

II. Methodology

Sample

The study was conducted on 30 adult patients aged 20-55 years of either sex at the inpatient unit of Institute of Mental Health and Hospital Agra. The sample was further randomly divided to two groups(a)Modified ECT plus Medicine (b) Medicine alone. The following inclusion and exclusion criteria were considered while selection of sample

Inclusion and Exclusion Criteria

In the patients included diagnosis was made as per DCR- 10, patients were not not given ECT during preceding one year and Consent were taken from the family members.
Patients with any co-morbid illness , any major physical illness and mental retardation were excluded.

After taking consent and ethical clearance from the institutional ethical committee the detail demographic information of each patient was recorded in a sheet specifically designed for the study.Each patient was subjected following tools before and after 3 months of treatment.

1. **Mania Rating Scale (MRS)** It is developed by Bech et al.(1978) and consists of 11 domains such as Motor activity, Verbal activity, Flight of thought, Voice-noise level, Hostility-destructiveness, Mood, Self esteem, Contact, Sleep, Sexual activity and Work and interest .Rating is made on o-4 point scale. It is a reliable and valid tool used widely in Indian studies.
2. **Standardised Mini Mental State Examination (SMMSE)**It is developed by Molly et al.(1991) and is a reliable and valid tool used widely in Indian studies. It consists of 30 items carrying 1 point for each correct answer 0 point for wrong answer. Total score is 30.
3. **Brief Cognitive Rating Scale (BCRS**) It is developed by Reisberg and Ferris(1988) having five axes such as concentration, Recent memory , Past memory, Orientation and Functional self care . Each axis is rated on a 7 point scale. The reliability is generally 0.9 for all five axis.
4. **Global Assessment of Functioning (GAF)** developed by Endicott et al.1976) is a procedure for measuring overall severity of psychiatric disturbances. It considers psychological, social and occupational function on a hypothetical continuum of mental health illness ranging from 0-100.
5. **PCASEE** scale is developed by Bech (1997). It has six domains such as Physical problems, Cognitive problems, Affective problems ,Social dysfunction, Economic problems and Ego problems. Each domain consists of 5 items and each item is rated on a 5 point scale. One group was under medication and the other group was exposed to modified bilateral ECT along with medication. The patients under ECT group received a course of six ECT in a span of 21 days..

III.Results

Table-1

Sample Characteristics			
Characteristics		**ECT plus Medicine**	**Medicine**
		Mania	**Mania**
Age (in years)		26.40	30.86
Age Range (in years)		18-48	19-50
Gender	Male	86.7% (13)	80% (12)
	Female	13.3% (2)	20% (3)
Education	Illiterate	20% (3)	20% (3)
	Literate	80% (12)	80% (12)
Occupation	Employed	73.3% (11)	80% (12)
	Not Employed	26.7% (4)	20% (3)
Domicile	Rural	40% (6)	60% (9)
	Urban	60% (9)	40% (6)
Marital Status	Married	46.7 (7)	66.7% (10)
	Unmarried	53.3% (8)	33.34% (5)
Family Type	Nuclear	80% (12)	60% (9)
	Joint	20% (3)	40% (6)
Mean Duration of Illness (current episode)		6.06 days	5.8 days
Family History of Psychiatric Illness		20% (3)	20% (3)

Table-2: Within Groups Analysis of Mania - Only Medicine Group: Baseline vs Three Months

Measures	Mean and S.D.		t-value	Sig.	Eta squared
	Baseline	Three Months			
Symptoms	81.46±9.72	53.26±5.18	9.81	.01	.87
Quality of Life	121.13±17.48	88.86±22.87	9.08	.01	.87
Global Assessment of Functioning	58.13±6.44	68.00±6.29	11.04	.01	.89
Cognitive Functioning	17.0±3.20	7.46±1.18	13.43	.01	.92
Mental State	12.86±4.15	23.53±4.51	9.24	.01	.85
Severity of Mania	29.53±10.82	14.66±3.81	6.40	.01	.74

Table-3:Within Groups Analysis of Mania - ECT plus Medicine Group: Baseline vs Three Months

Measures	Mean and S.D.		t-value	Sig.	Eta squared
	Baseline	Three Months			
Symptoms	76.86±17.12	40.40±4.61	9.75	.01	.87
Quality of Life	113.46±18.88	59.53±7.16	13.27	.01	.92
Global Assessment of Functioning	64.60±6.38	76.46±5.01	17.39	.01	.95
Cognitive Functioning	18.20±4.58	8.13±1.92	11.57	.01	.90
Mental State	13.53±6.22	28.86±1.84	10.87	.01	.89
Severity of Mania	27.73±7.93	10.33±2.87	9.90	.01	.87

Table-4: Between Groups Analysis of Mania:

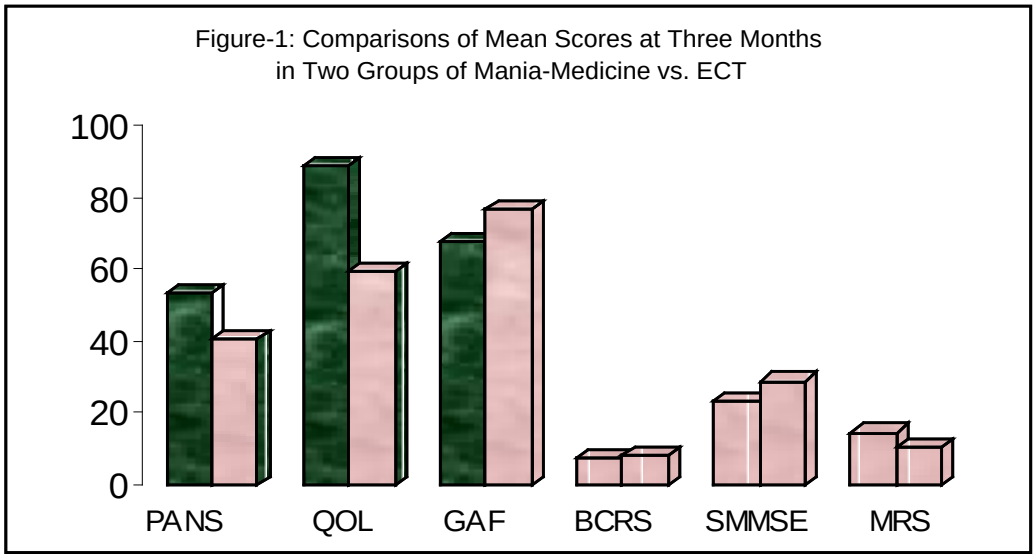
Medicine vis-à-vis ECT plus Medicine				
Measures		t-value	Sig.	Eta squared
Symptoms	Baseline (M/E)*	.90	ns	.02
	Three Months (M/E)	7.17	.01	.64
Quality of Life	Baseline (M/E)	1.15	ns	.04
	Three Months (M/E)	4.73	.01	.44
Global Assessment of Functioning	Baseline (M/E)	2.75	.01	.21
	Three Months (M/E)	4.07	.01	.37
Cognitive Functioning	Baseline (M/E)	.83	ns	.02
	Three Months (M/E)	1.14	ns	.04
Mental State	Baseline (M/E)	.34	ns	.00
	Three Months (M/E)	4.23	.01	.38
Severity of Mania	Baseline (M/E)	.51	ns	.00
	Three Months (M/E)	3.51	.01	.30
M = Only Medicine; E = Medicine plus ECT				

The two groups were similar regarding basic demographic and other characteristics.(Table-1)

In Table- 2 within group analysis was conducted through paired t-test to compare the mean scores at baseline and three months follow up on various measures of manics who received only medicine. The results shows significant improvements with very large effect sizes ranging from .74 to .92 reflecting the efficacy of treatment regimen adopted by treating clinician. The results are in expected direction.

In Table-3 within group analysis was conducted through paired t-test to compare the mean scores at baseline and three months follow up on various measures of manics who received ECT along with medicine. The results shows significant improvements with very large effect sizes ranging from .87 to .95 reflecting the efficacy of treatment regimen. The results are in expected direction.

In Table-4 Between group analysis was done through independent t-test for all the measures of manics at baseline and three months follow up. The results shows that two groups of manics were equal at baseline on every measure except on global functioning. But at three months follow up two groups differed significantly on positive symptoms, quality of life, mental state and severity of mania. The ECT and medicine group evidenced significantly greater improvements than only medicine groups. Cognitive functions remained unchanged at two time periods.



The mean scores of two subgroups of manics are plotted on the bar diagram for all the measures at three months follow up. The figure shows unequal effects between the conditions on several measures.

IV. Discussion:

The results of this study revealed that that ECT is an effective, safe treatment method for manic patients. ECT produces a rapid decline in severity of the symptoms of mania. Previous studies indicated that the presence of some factors such as agitation and high clinical severity are predictive of good treatment response to ECT(Small etal 1985) Other studies also found that the severe manic patients responded more faster to ECT than less severe manic patients(Small etal 1988 , Schnur etal 1992) .Literature regarding the application of ECT in cases of treatment-resistant bipolar disorder and refractory mania are also available(Macedo etal 2005, Nascimento etal 2006).

Reduction of symptoms and better cognitive functionings increases the understanding of self and environment. The individual uses the resourses more effectively and thereby helps himself or herself to enhance the quality of life. Though the variables such as financial condition, home environment, symptom severity, medicine compliance are directly related to quality of life, the of ECT can not be ignored as a symptom reducer indirectly contributing to quality of life. Based on this evidence, it might be reasonable to recommend Modified ECT in manic episodes .However, it is important also to interprete our findings with caution.

V. Conclusion:

Though ECT is effective in the management of treatment-resistant patients it should not be considered as the ultimate treatment. Other issues must be considered in future studies that whether ECT is a superior form of treatment than the new pharmacological options. The effectiveness and tolerability of continuation and maintenance of ECT ia also to be considered in future.

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Conflicts of interest

There are no Conflicts of interest

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