

ORIGINAL

Patterns of Electroconvulsive Therapy in Bahrain

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ABSTRACT

This is a study of the pattern of use and the response to electroconvulsive therapy (ECT) administered in the Psychiatric Hospital between 1984 and 1987. ECT rate in Bahrain was found to be 0.67 individual applications per thousand total population. 1.48% of all psychiatric patients seen during the period of the study received ECT. 61.3% of cases who received ECT were suffering from schizophrenic illnesses, 38.7% from affective disorders. The best results were found in affective disorders; 58.8% had good improvement whereas in schizophrenics group 36.1% had good improvement. However, catatonic schizophrenics, which if singled out, gave the best results with (81%) good improvement. The female to male sex ratio is 1.3. Side effects in this study were found to be less than those reported in other studies.

The pattern of use of ECT differs in different countries. In the United States and Europe the concept of using ECT as a line of treatment in psychiatric illnesses is widely restricted and is mainly used in depression.¹⁻³ But in the developing countries, ECT is still widely used in all functional psychoses and mainly in schizophrenia due to the lack of adequate indoor treatment facilities, trained psychiatric personnel and funds.⁴

Bahrain has a unique set-up. The psychiatric services are centralised in one hospital with 180 beds. ECT is administered only in the hospital after obtaining a written consent from the patient and/or a close relative. The medicine used is Ectonus MK 4, Duopulse (constant current, unilateral and bilateral). A series of treatments usually twice per week is given and ECT involve a seizure that is induced electrically in a medically fit patient, in a safe environment under general anaesthetic. Seizures are timed to last 0.4 seconds for each treatment. ECT is administered using either unilateral or bilateral electrodes.

The aim of this study was to discern the pattern of use of ECT in Bahrain and compare the results with corresponding ones in India, Ireland, Sweden and the UK.

METHODS

All patients who received ECT in the Psychiatric Hospital during the period between January 1984 and December 1987 were included in this study. Hospital records comprising psychiatric progress notes, ECT sheets and nurses notes were studied. Patients who had received three or more ECTs were included in the final analysis as individual cases, while those who had received less than three ECTs were excluded.

Several variables were examined; they included: the

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total number of treatments and rates, socio-demographic data, number of previous ECT courses, number of previous admissions, time between admission and ECT course, diagnosis, reason for administration of ECT, outcome, type of ECT and frequency, medication with ECT, and side effects and complications.

Diagnosis was recorded according to the International Classification of Diseases ICD-9.⁵ We looked into all symptoms which influenced consultants to prescribe ECT. For the purpose of analysis and comparison with other studies, these symptoms were classified into four groups: group I included depressed mood, psychomotor retardation and suicidal tendencies; group II included: severe thought disorder, catatonic features; group III included symptoms of illness behaviour: (disturbed behaviour, delusions and hallucinations and stupor); and group IV included failure-to-respond-to-medication symptom which was determined after the failure of full daily antidepressant dose equivalent to 150 mg of Tryptizol for minimum of 3 weeks in affective disorders and major tranquiliser equivalent to chlorpromazine 200 mg t.d.s. for minimum of 10 days in schizophrenic disorders.

Outcome of ECT treatment was ascertained according to the clinical improvement reported by the doctors and nurses. Improvement was evaluated as good when patients had shown 80% or more improvement in their reported symptoms; moderate when they had shown 50-80% improvement in their symptoms; poor when they had continued to show more than 50% of their symptoms.

RESULTS

ECT was administered to 152 patients; however, only 138 had the requisite number of treatments and were included in the analysis while the remaining 14 were excluded. The 138 patients had received 176 courses of ECT and for the purpose of this study were considered as 176 distinct individual cases. Table 1 shows that the mean ECT rate in Bahrain was 0.67 individual applications per

one thousand population during the four-year period, with the highest ECT rate being 0.90 in 1985 and the lowest rate being 0.41 in 1986.⁶ The mean number of treatments in completed courses is 6.35.

The patients' ages ranged from 15 to 64 years. The commonest age group (51.1% of the total sample) was between 19 and 30 years old; 83.5% were under forty; and 92% were under fifty. The number of female cases were 98 (55.7%) and that of male cases were 78 (44.3%) with a female to male sex ratio of 1.3.

Upon diagnosis, 68 cases (38.7%) were found to be suffering from affective disorders, 108 (61.3%) from schizophrenic and related disorders. Out of the schizophrenic group, 21 (19.4%) or about one fifth were catatonics, 30 (27.8%) were paranoid and the rest included hebephrenic and residual schizophrenics (Table 2).

The commonest symptoms for administering ECT, were those of group I depressive disorders which included 78 cases (44.3%); followed by group IV failure to respond to other treatments which accounted for 46 cases (26.1%); then group III illness behaviour symptoms which comprised 34 cases (19.3%); and finally schizophrenic symptoms which comprised 18 cases (10.3%).

In analysing the outcome of ECT, we have found that out of affective disorders group, 40 cases (58.8%) had good improvement, 25 (36.8%) had moderate improvement and 3 (4.4%) had poor improvement. Out of the affective disorders group, 33 (71.7%) cases with manic-depressive psychosis, depressed type had good improvement. In the Schizophrenia group, 39 cases (36.1%) had good improvement, 53 (49.1%) had moderate improvement and 15 (13.8%) had poor improvement. Catatonics showed the best results with 81% good improvement (Table 2).

The majority of patients received bilateral ECT (94.9%) and 5.1% received unilateral ECT. All cases were on psychotropic drugs.

Table 1
ECT annual rates in Bahrain between 1984 and 1988

Year	Population projections (in 000's)	ECT cases	No. of shocks	*ECT rate
1984	407	44	297	0.73
1985	425	55	381	0.90
1986	441	28	183	0.41
1987	458	49	299	0.65

*ECT rate = individual applications per 1000 total population

Table 2
Diagnostic categories and outcome of ECT cases

Diagnostic categories (ICD 9)	No. of patients	outcome		
		Good	Moderate	Poor
Schizophrenic and related disorders				
Hebephrenia	19	4	8	6
Catatonic schizophrenia	21	17	4	-
Paranoid schizophrenia	30	8	19	3
Residual schizophrenia	2	-	-	2
Schizoaffective disorders	34	10	20	4
Paraphrenia	2	-	2	-
Total	108 (61.4%)	39	53	15
Affective disorders				
* MDP manic type	12	6	5	1
MDP depressed type	46	33	13	-
MDP circular currently manic	7	1	6	-
MDP circular currently depressed	2	-	1	1
Obsessional compulsive disorders	1	-	-	1
Total	68 (38.6%)	40	25	3

* MDP = Manic Depressive Psychosis

Twenty-three patients developed side effects and complications; these were as follows: headaches in 15 (8.5%), confusion in 4 (2.3%), bleeding per gum in 2 (1.1%) and manic episode in one patient (0.6%). One patient did not recover from anaesthesia after the third ECT and died two months later.

DISCUSSION

About 1.5% of all patients treated in the Psychiatric Hospital in Bahrain from January 1984 to December 1987 received ECT, a lower figure compared with 3 to 5% in the USA and Sweden, respectively.^{7,8} The mean annual rate was found to be 0.67 individual applications per thousand total population during the four-year period which is a lower rate than the corresponding ones in the UK (3.53/1000),² and Ireland (5.3/1000).¹ This can be explained by many factors. Foremost is the special set-up of psychiatric services in Bahrain where the Psychiatric Hospital is the only psychiatric institution serving the entire population. Such a set-up allows for establishment of unified policies. Secondly, the small size of the island (600 sq.km) makes the Hospital easily accessible to all patients. In addition, there is high level of public awareness of psychiatric illnesses in Bahrain. Sixty

percent of cases attending the Hospital are self-referrals which allows for earlier diagnosis and intervention.⁹ Finally, there was a certain proportion of people who refused ECT treatment.

Most of our cases (92%) were under the age of 50 compared with 38% in a UK study.² A possible explanation to the above finding is that 80% of the total hospital admissions belong to the age group of 15-44 years while the elderly constitutes only a small portion psychiatric population.⁴

Female to male sex ratio was found to be 1.3 which is lower than that of the UK (2.27),² but higher than the corresponding figure in India (0.85).⁴ This can be explained by the fact that in Bahrain females are not the breadwinners and are more tolerated by society when mentally ill as opposed to men who are shunned by society when mentally ill. This is dramatically shown in our study: although twice as many men are admitted to the Hospital, the number of women receiving ECT is higher than men. This may also reflect the severity of their conditions on referral to the hospital.⁶ Eighty-two cases (46.6%) had received ECT treatment on previous occasions compared to 60% in the UK.²

In this study we have found that 38.7% of cases who received ECT belonged to the affective disorders group compared to 83% in the UK² and 19% in India.⁴ The remainder of 61.3% belonged to schizophrenic and related disorders group compared to 13% in the UK² and 75% in India.⁴ The higher figure compared with UK can be explained by the fact that the reasons for which schizophrenics received ECT included an affective component in 33 cases (30.5%) of the schizophrenic group, illness behaviour symptoms in 20 (18.5%), failure to respond to treatment in 37 (34.3%), and schizophrenic symptoms in 18 patients (16.7%).

In comparing the outcome of ECT treatment in the affective disorders group we have found the following: 47 cases (68.7%) with manic depressive psychosis depressed type and circular type currently depressed have shown good improvement compared with 73% in UK for psychotic depression. This finding is similar to earlier ones that affective disorders are considered the main indication for ECT.^{8,10} In the schizophrenic group, 36.1% had good improvement, 49.1% moderate improvement and 13.8% poor improvement compared with 27% recovery, 37% marked improvement in the Indian study.⁴ The better rate of improvement in Bahrain of schizophrenic patients receiving ECT is probably due to higher representation of catatonics and schizoaffectives. It is generally believed that ECT is beneficial in ameliorating catatonic symptoms and excitement.^{11,12} In addition, a percentage of schizophrenic cases who had received ECT for acute depressive symptoms (30.5%) or illness behaviour (18.5%) may have contributed to the improved result in the schizophrenic group. Combining (drugs) medication with ECT may be another contributing factor to the good results obtained in schizophrenia.¹³

ECT on out-patient basis was administered only to 5.7% of cases, which is lower than in the UK (16%) and Ireland (9%).^{1,2} The above findings might result from a tendency to admit patients who require ECT due to available bed facilities, therefore only few cases receive ECT as out-patients.

Most cases 167 (94.9%) have received bilateral ECT while the remaining 5.1% received unilateral ECT. The corresponding figures for bilateral and unilateral ECT treatment in the Swedish study were 2% and 49% respectively, and the rest received both unilateral and bilateral ECT.⁸ Our higher rates may be explained by the tendency to give bilateral ECT to younger people, (below the age of forty) who represent 83.5% of our sample and in whom memory disturbances are less likely to occur. In addition, it has been reported that bilateral ECT has a more rapid onset and this is more effective.⁸

Twenty-three cases (13.1%) have developed side effects which is less than 65%, the result of a Swedish study; this may be due to under-reporting.⁶ However, similar side effects such as headaches, transitory memory

disturbances, and fear of treatment found in our study were similar to those reported by others.

CONCLUSION

The rate of use of ECT in Bahrain for treatment of affective disorders is lower compared to that in UK and other European countries. However, there seems to be more of tendency to use it for schizophrenic illness which is similar to India and developing countries and is mainly used to treat the affective and illness behaviour component of the schizophrenic illness.

REFERENCES

1. Latey RH, Fahy TJ. Electroconvulsive therapy in the Republic of Ireland 1982: a summary of findings. *Br J Psychiatry* 1985;147:438-9.
2. Pippard J, Ellam L. Electroconvulsive treatment in Great Britain. *Br J Psychiatry* 1981;139:563-8.
3. Royal College of Psychiatrists. Memorandum on the use of electroconvulsive therapy. *Br J Psychiatry* 1977;131:261-72.
4. Shukla GD. Electroconvulsive therapy in a rural teaching general hospital in India. *Br J Psychiatry* 1981;139:569-71.
5. WHO. Mental disorders: glossary and guide to their classification in accordance with the ninth revision of the international classification of diseases. Geneva: World Health Organization, 1978.
6. Central Statistics Organisation. Statistical abstract 1988. Bahrain: Central Statistics Organisation, 1989;36.
7. American Psychiatric Association. Electroconvulsive therapy. Task Force Report 14. Washington DC: American Psychiatric Association, 1978.
8. Frederiksen SO, D'Elia G. Electroconvulsive therapy in Sweden. *Br J Psychiatry* 1979;134:583-7.
9. Psychiatric Hospital. Annual Reports: Bahrain Psychiatric Hospital 1984-87.
10. Dodwell D, Goldberg D. A study of factors associated with response to electroconvulsive therapy in patients with schizophrenic symptoms. *Br J Psychiatry* 1989;154:635-9.
11. Abraham KR, Kulhara P. The efficacy of electroconvulsive therapy in the treatment of schizophrenia. A comparative study. *Br J Psychiatry* 1987;151:152-5.
12. Kendell RE. The present status of electroconvulsive therapy. *Br J Psychiatry* 1981;139:265-83.(85 ref.)
13. Kelly DHW, Sargent W. Present treatment of Schizophrenia: A controlled follow up study. *Br Med J* 1965;1:147-50.
14. Wing JK, Hailey AM, eds. Evaluating a community psychiatric service. London: Oxford University Press; 1972.