

# THE USE OF ELECTROCONVULSIVE THERAPY IN THE UNIVERSITY HOSPITAL, KUALA LUMPUR — A STUDY OF 31 PATIENTS

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## SUMMARY

*Thirty-one (31) patients undergoing electroconvulsive therapy (ECT) over a three-week period in October 1982 in the Psychiatric Unit, University Hospital, Kuala Lumpur, were studied. The main indications for ECT in these patients were poor response to drug therapy, depression with suicidal ideation, and aggression, which together accounted for 87 percent of all patients started on ECT during this period. The majority of patients (86 percent) showed some improvement, and 73 percent improved by the third ECT. The most common side-effects experienced by patients were memory disturbance (45 percent) and post-ECT headache (45 percent). No serious side-effects were encountered.*

## INTRODUCTION

Electroconvulsive therapy (ECT) is the most

widely used form of somatic therapy for psychiatric illness today. First introduced by Cerletti and Bini in 1937,<sup>1</sup> ECT has in the past been hailed by its advocates as a great advance in the treatment of psychiatric illness, and condemned by its opponents as a brutal exploitation of helpless victims. Over the last forty years, the sphere of usefulness of ECT has gradually been delineated. The popularity and extent of the usage of ECT, however, continues to vary from centre to centre. In the University Hospital, Kuala Lumpur, ECT using bipolar electrodes and given under anaesthesia has been used in the Psychiatric Unit since 1967. The objective of this study is to determine, over a limited period of three weeks, the indications, patients' response, and side-effects seen in patients undergoing ECT in this Unit.

## MATERIALS AND METHODS

In this Unit, ECT using bipolar electrodes, is given (under anaesthesia) three times weekly. All patients receiving ECT during the period from 4th October, 1982 to 22nd October, 1982 were studied with respect to indications and side-effects of ECT. Of these, patients who actually started on a course of ECT during this period were studied to determine their response to therapy. All patients in this group were on concurrent drug therapy.

Each patient was assigned to a final-year medical student undergoing clerkship in Psychiatry. Patients were followed-up till discharged or till the end of the study, and a questionnaire on each patient was completed by the student concerned.

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Indications for ECT were determined by asking the doctor whose care the patient was under. Side-effects were determined by going through a checklist with the patient within forty-eight hours after each ECT. Any patient who complained of a particular side-effect at least once during the course of ECT were noted. Response to ECT was determined by assessing the mental status of patients, and cross-checking with the ward staff's observations in the case-notes after each ECT. A 'response' was defined as 'significant improvement' in at least one of the following target symptoms: violence or aggression, depressed mood, suicidal ideation, hallucinations, delusions, social withdrawal, irrational, irrelevant or incoherent speech.

An example of what constituted a significant improvement is as follows: On admission — 'Patient tried to strangle himself. Talking incessantly and irrationally, reluctant to be admitted. Spitting indiscriminately, shouting, restless. Had to be nursed under restraint.' After second ECT - 'Patient was much calmer. Able to ask staff some relevant questions. Out at day-space most of the time.'

## RESULTS

Thirty-one patients received ECT during the study period of which 22 actually started on a course during this period (the rest having started earlier). The mean age of patients was 28.1 years, with a range of 15 to 39 years. Of the thirty-one patients, seventeen were Chinese, eight were Malays and six were Indians. There were fourteen male and seventeen female patients.

## INDICATIONS

Table I shows a comparison between the psychiatric diagnoses of patients on ECT and all patients admitted into the Psychiatric Unit over the study period. The majority (29 out of 31) of patients had a diagnosis of schizophrenic disorder. However, these patients were started on ECT for different reasons, as shown in Table II. The main indication for starting ECT was a poor response to medication, followed by depression with suicidal ideation, and aggression, which together accounted for 87 percent of all patients. The majority of patients (87 percent) undergoing ECT had their first ECT within ten days of admission, as shown in Table III. Of the thirteen patients who were started on ECT within three days of admission, eleven (85

**TABLE I**  
COMPARISON BETWEEN PSYCHIATRIC DIAGNOSES OF PATIENTS ON ECT AND ALL PSYCHIATRIC ADMISSIONS OVER THE SAME PERIOD

Diagnosis	Patients on ECT	All psychiatric admissions
Schizophrenic disorder	29	34
Bipolar disorder	-	2
Major depression	2	2
Brief reactive psychosis	-	2
Adjustment disorder with depressed mood	-	4
Conversion disorder	-	1
Total	31	45

**TABLE II**  
INDICATIONS FOR ECT

Indications	Patients	
	Number	Percentage
Poor or no response to medication	15	48.4
Depression and suicidal ideation	8	25.8
Aggression	4	12.9
Poor compliance in chronic schizophrenia	2	6.5
Catatonia	1	3.2
Severe withdrawal	1	3.2
Total	31	100.0%

**TABLE III**  
DURATION FROM ADMISSION TO START OF ECT : 'NEW' AND 'RELAPSE' CASES

Duration (days)	'New' cases	'Relapse' cases	Total number	Percentage
1 - 3	2	11	13	42
4 - 10	4	10	14	45
More than 10	2	2	4	13
Total	8	23	31	100

percent) were relapse cases, i.e. they had been admitted for the same illness at least once before.

## RESPONSE

Fig. 1 shows the number of ECTs each patient had during the period of study, and when significant improvement (as defined earlier) was first noted, 45 percent of patients (10 out of 22) showed improvement after the second ECT and 73 percent after the third ECT. Of the three patients who had not shown any response by the end of the

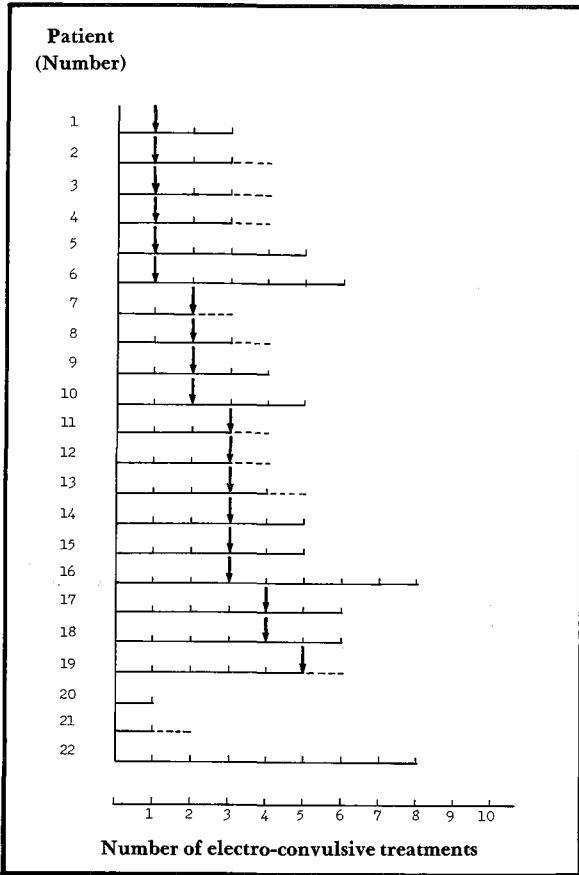


Fig. 1 Patient's response to ECT.

Footnote: (1) Dotted lines indicated that the course of ECT was not completed by the end of the study.

(2) Arrows indicate first significant improvement (see text).

study, one had been transferred to Hospital Bahagia after the first ECT, another had only the first ECT before the end of the period of study, and only one did not show any improvement even after the eighth ECT.

#### SIDE-EFFECTS

Table IV shows that the most common side-effects seen were memory disturbance and post-ECT headache which were both experienced by 45 percent of patients. Dizziness and post-ECT confusion were the other common side-effects noted. One patient lost a tooth during the seizure and three patients did not complain of any side-effects. Side-effects could not be determined in two patients as they were irrational or incoherent. No serious side-effects e.g. fractures or cardiovascular complications were seen.

TABLE IV  
SIDE-EFFECTS EXPERIENCED BY PATIENTS AFTER ECT

Side-effects	Number	Percentage (of 31 patients)
Headache	14	45.2
Memory disturbance	14	45.2
Dizziness	10	32.3
Confusion	8	25.8
Nausea	2	6.5
Vomiting	1	3.2
Others :		
Drowsiness	3	9.7
: Body ache or discomfort	3	9.7
: Jaw ache	2	6.5
: Chest and neck pain	1	3.2
: Avulsed tooth	1	3.2
No side-effects	3	9.7
unable to communicate	2	6.5

#### DISCUSSION

The indications for the use of ECT in psychiatric illness have long been a controversy.<sup>2</sup> Gill and Lambourn,<sup>3</sup> in a survey of 52 psychiatrists in Wessex, England found that ECT was thought to be most useful in depressive psychosis and catatonic schizophrenia. The effectiveness of ECT in depressive illness has been shown by many studies.<sup>2,4,5,6</sup> Published evidence for its effectiveness in catatonic schizophrenia is however less conclusive.<sup>2,6</sup> The use of ECT in other forms of schizophrenia has received a wide spectrum of comments and opinions. A memorandum by the Royal College of Psychiatrists<sup>4</sup> stated that 'ECT has no general value comparable with neuroleptics in the treatment of schizophrenia.' Others have gone further to say that 'to use ECT for schizophrenia is an assault on the patient and on his individuality.'<sup>7</sup> On the other hand, some authors have advocated using ECT in combination with phenothiazines early on in the majority of cases of acute schizophrenia.<sup>8</sup> The use of ECT in schizophrenics is not extensive. Eastwood and Peacock,<sup>8</sup> in a study of three Toronto Hospitals, found that only 15 percent of patients receiving ECT were schizophrenics, while the figure reported by the American Psychiatric Association Task Force<sup>10</sup> is 17 percent.

In this study, patients on ECT had a diagnosis of either schizophrenia disorder or major depression. However, it should be noted that schizophrenics form the largest group of patients admitted to this unit, and of the thirty-four patients admitted over

this period with a diagnosis of schizophrenic disorder, only nineteen (56 percent) were started on ECT. The majority of schizophrenics started on ECT were those with either poor response or poor compliance to medication, and most of these were relapse cases. The fact that relapse cases comprised 85 percent of those who received ECT within three days after admission seems to indicate a tendency to prescribe ECT too early in such circumstances.

A smaller proportion of schizophrenics were started on ECT because of depression, withdrawal, aggression or catatonia. The early use of ECT has been found to reduce the length of hospitalization, with a corresponding reduction in the cost of treatment, especially in developing countries.<sup>11</sup> While this study was too short to assess this aspect of the use of ECT here, the average duration of stay in this Unit for the month of October, 1982 was noted to be only seventeen days.

The response seen in patients after ECT was remarkable (Fig. 1). Both patients with major depression showed improvement after the second ECT, and all but three of the schizophrenics had significant alleviation of their symptoms by the fifth ECT.

The association of these target symptoms and signs with a favourable outcome is in agreement with the study by Gill and Lambourn.<sup>3</sup> ECT was found to be especially useful in reducing violence and depression while awaiting the onset of action of drugs given concurrently. However, the frequency of relapse and the duration between relapses of patients on such treatment is an area which warrants further investigation.

In assessing the response of patients, an element of subjectivity was introduced by the method adopted. An attempt has been made to minimise this by cross-checking with the ward-staff's daily observations in the case-notes of patients. The other draw-back of this study is that it is uncontrolled, and the question arises whether the response seen in patients is due to ECT, concurrent drug therapy, the therapeutic effect of admission to hospital or a combination of these. However, many of these patients had a poor response to drugs to start with, and the fact that the majority of patients showed an early response in the ward, before drugs start to act, makes it more likely that the improvement seen was due to ECT, at least in the early phase of treatment. The combination of ECT with drug therapy using up to 750 mg. chlorpromazine daily

has been demonstrated to be safe.<sup>12</sup> Turek<sup>13</sup> showed that combined therapy was superior to drug therapy alone although Taylor and Fleminger<sup>14</sup> suggested that these benefits are short-lived in those who have previously shown poor response to drugs.

Side-effects seen in patients are similar to those found in other studies. Freeman and Kendell<sup>15</sup> noted memory impairment and headache in 67 percent and 48 percent of patients respectively, while Ihezue and Ebigo,<sup>11</sup> in a Nigerian study, found memory disturbance and headache in 45 percent and 19 percent of patients respectively. Bilateral ECT was routinely used in both these studies, as was the case in the present study. Memory impairment appears to be of three types:<sup>2</sup> a retrograde amnesia for remote events, a retrograde amnesia for the period immediately before ECT and an anterograde amnesia. In retrospect a simple test of recent memory at various intervals after ECT could have been designed to obtain further information. Fracture or avulsion of teeth was seen in three out of six-hundred and ninety patients in the Nigerian study<sup>11</sup> and in one patient in this study. It is likely that this could have been avoided with proper examination and dental treatment prior to starting ECT. No serious complications were encountered and generally ECT has been accepted as a safe and effective procedure.<sup>2,6</sup>

## ACKNOWLEDGEMENTS

We would like to thank Associate Professor M.P. Deva and Dr. N. Rajagopal for their assistance and advice, our colleagues Ariffin Mohamad, Abdul Razak, Chan Teck Ming, Karunanithi V., Misbah Hanoom, Mohd. Anis, Murli N., Noor Zaini, Wasli Abdullah and Wan Azman for their invaluable help in data collection, and Miss Susheela Ponniah for typing the manuscript.

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