

The Practice of Electroconvulsive Therapy (ECT) in a Sample of Egyptian Patients

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Abstract

Since its inception in 1938, ECT has proved effective and even life saving in certain psychiatric conditions when other treatments have been of little or no benefit. ECT is the only treatment in psychiatry that has withstood the test of time for nearly 70 years. ECT in Egypt is used in patients suffering from depression, mania, schizophrenia and catatonia which are slightly different from the literature where ECT is mainly used for depression; however, recently an abundance of literature has proved that ECT is as effective in mania as it is effective in depression. This study was carried out on 544 patients admitted to the Psychiatric Health Resort in New Cairo over a period of one year. From the 399 patients receiving ECT 273 (68%) were male and 126 (32%) were females. The 399 patients in this study received a total of 2866 ECT sessions. From these 2866 ECT sessions, 2734 sessions (95%) were given bilaterally and 132 sessions (5%) were given unilaterally. All psychiatrists should be acquainted with ECT and be able to present the treatment to the patient and the patient's relatives in a knowledgeable and scientific manner, in order to reduce the stigma and transmit the fact that it is no longer "shock" or "convulsive" treatment. Emphasis also should be that it is not a last resort treatment, but rather a first line therapy when indicated. An urgent goal of mental health care should be to provide access to ECT and eliminate the severe impediments to its use, so long as it can defend evidence based superiority over other treatments.

Introduction

This year the world celebrates 67 years of electro-convulsive therapy (ECT). There has been no other line of treatment in medicine that withstood the test of time for nearly six decades like ECT. The controversy over ECT is what enabled it to prove itself and helped it in its development to our present day as when a thing ceases to be a subject of controversy; it ceases to be a subject of interest.

Since its inception ECT has proved effective and even life saving in certain psychiatric conditions when other treatments have been of little or no benefit.

ECT was initially used to treat psychotic patients in whom schizophrenia was diagnosed. However, practitioners quickly began to discover that ECT was also useful

in other psychiatric disorders mainly severe depression.

The stigma of ECT is one of the main issues that need to be addressed worldwide, ECT is a technically advanced and effective treatment that is often misunderstood and maligned by the lay public and by psychiatrists as well. From 1938 to the 1950's an extensive use of ECT was seen. During that period of time, ECT was the major treatment, if not frequently the only biological treatment available for mental illness (Fink, 1992).

From the 1950's through the 1970's with the advent of psychotropic medications (including the development of neuroleptics and of tricyclic antidepressants), a decline in the use of ECT was seen. In the 1970's,

concern developed regarding the side effects of psychotropic medications, including the cardiovascular effects of the tricyclic antidepressants and the potential for tardive dyskinesia with neuroleptics. This concern resulted in a resurgence of interest in ECT and led to many studies and reports evaluating the effectiveness of this modality.

At the same time, the myths, misinformation, and public outcry continued. Senator Eagleton lost his vice presidential bid when he revealed that he had received ECT. In the film "One Flew over the Cuckoo's Nest", Jack Nicholson portrayed a patient receiving ECT for the wrong purpose (coercion) and in the wrong fashion (without anaesthesia or muscle relaxant). While public concern continues as a result of negative media portrayal, progress in ECT has continued with significant medical advancements (Hay, 1992). Currently, there is a surge in ECT research and publications which has helped ECT to enter the biological age of psychiatry. A journal now is available only for research in ECT and allied sciences on a quarterly basis.

The semantic issue becomes paramount. It is very inappropriate to call such treatment "Shock therapy". Fink (1979 and Ottosson 2004) has pointed out that "Shock" has a specific meaning: it is the perception of the passage of an electric current. This produces pain and discomfort. The word "Shock" denotes perceptions that do not occur under anaesthesia. This would be analogous to labelling surgery "pain therapy".

This outdated use of language leads to negative attitudes and prejudice. The words "convulsion" and "seizure" both have special meanings to the public. Convulsions

as portrayed by the mass media do not occur with modern ECT methods. "Seizure" is used in its technical sense to refer to the patterned electrical response produced by an electrical stimulus on an EEG level.

Lack of awareness of the natural history of disorders treated by ECT in the Egyptian population make nearly 70% of families of patients believe that ECT is addictive and once they receive ECT they will continue to relapse and never get better unless they receive another course of ECT (Okasha, 2006).

The treatment itself should be given a new name that describes what is done in neutral, "unloaded" language. Words like "Shock", "Seizure" and "Convulsive" should be eliminated. Several proposed terms as "cerebroversion", analogous with "cardioversion", or "Central Stimulation" or "Central Stimulation with Patterned Response" (CSPR), in Egypt a proposal by Okasha (1988) suggested the use of "Brain Synchronization Therapy" (BST) or "Rhythm Restoration Therapy" suggested by Rakhawy (1982) all would be effective in correcting the semantic description of ECT.

Previous refusal and stigma have changed and decreased after the introduction of these new names to some university hospitals in Egypt, and families were more accepting of this treatment after they previously said that our patient can be admitted to hospital, but do not give him electric treatment.

The aim of this work is to review the practice of ECT in a selective Egyptian sample of inpatients and assess the mortality, complications and outcome of patients.

Subject and Method

The study was carried out as a retrospective descriptive study. Studying the files and retrieving the data of 544 patients admitted to the Psychiatric Health Resort in New Cairo over a period of one year. The psychiatric health resort is a private psychiatric hospital with both inpatient and out patient facilities.

Any patient receiving ECT was viewed regarding their sex, diagnosis and method of receiving ECT. All patients were included and the only exclusion criterion was not receiving ECT. All diagnoses were made according to the ICD-10 Research and Diagnostic Criteria (1993) using the ICD-10 symptom checklist (1994).

An informed consent was taken from all the patients or their relatives to be included in this study.

Patients receiving ECT were investigated routinely by complete blood count (CBC), erythrocyte sedimentation rate (ESR), fasting blood sugar (FBS), liver and kidney functions and ECG. Patients were fasting for a period of at least 6 hours before receiving the treatment. ECT was given three times weekly, bilaterally using the bitemporal electrode placement and unilaterally using d'Elia (1970) position.

Patients were given thiopental sodium and atropine by the IV route followed by succinyl choline and oxygenation. A Thymatron DG apparatus was used setting the energy dial according to age giving a charge of 100.8 - 277.2 millicolombs, a current of 0.9 ampere, a frequency of 30 - 50 HZ, a pulse width of 1.0 msec and a duration of stimulus of 1.87 - 2.20 seconds. The seizure was monitored by one channel of EEG and one channel of EMG. All

seizures fulfilled the criteria for an effective seizure.

The criteria for an effective monitored seizure are:

- A post-ictal suppression index above 70 % (Weiner, 1991).
- A seizure concordance index above 50 % (Swartz and Larson, 1986).
- A seizure energy index above 550 units (Abrams, 1992).

Results

Out of the 544 patients admitted to the Psychiatric Health Resort over a period of one year, 399 patients received ECT. The oldest patient receiving ECT was 83 years old and the youngest was 18 years old. The distribution of patient' age can be seen in Table (1). This table should act as an eye-opener that elderly people who respond to ECT better than pharmacotherapy are deprived of this treatment due to the reluctance of the attending psychiatrists to prescribe it form fear of stigma. More education is needed to correct these wrong perception both for psychiatrists, patients and their families.

From the 399 patients receiving ECT 273 (68%) were male and 126 (32%) were females as shown in figure (1).

The patients were diagnosed according to the ICD10 research and diagnostic criteria using the ICD 10 symptom checklist. The diagnoses of the patients were as shown in figure (2). 166 patients (42%) were suffering from schizophrenia, 105 patients (27%) were suffering from bipolar disorder (mania), 63 patients (16%) were suffering from depression and 60 patients (15%) were suffering from other diagnoses.

The other diagnoses for the 60 patients included 13 patients with obsessive compulsive disorder, 32 patients with mental and behavioural disorder secondary to substance abuse, 1 patient with generalised anxiety disorder, 11 patients with personality disorder, 1 patient with panic disorder and 2 patients with somatization disorder (figure 3).

All patients with the label other diagnoses had co-morbid depression except for 8 patients from mental and behavioural disorder secondary to substance abuse group who had substance induced psychosis.

The 399 patients in this study received a total of 2866 ECT sessions. From these 2866 ECT sessions as shown in figure (4), 2734 sessions (95%) were given bilaterally using the bitemporal electrode placement position and 132 sessions (5%) were given unilaterally on the non dominant hemisphere using the d'Elia position (2.5 cms from the vertex of the head).

The patients receiving unilateral ECT had different diagnoses according to the ICD 10 as shown in figure (5). 10 patients (39%) were diagnosed with severe depression, 7 patients (27%) were diagnosed with bipolar disorder (mania), 5 patients (19%) were diagnosed with schizophrenia and 4 patients (15%) were diagnosed as other diagnoses

who suffered from co-morbid depression. From the 132 patients receiving unilateral ECT 101 patients (77%) were above the age of 50 years and 31 patients (23%) were between the ages of 20 and 49 years.

Unilateral ECT was given to the patients for 3 reasons; firstly, some patients had exams and the need to decrease the cognitive deficit especially to recent memory was necessary, secondly some patients ran their own businesses and needed be supervising their work while hospitalized and thirdly some patients from the older age bracket were suffering from early cognitive decline.

Out of the 2866 ECT sessions, as reported in the patient files, there were no mortalities, fractures or dislocations, specific complications whether cardiovascular or respiratory, or acute confusion states after the ECT sessions.

Upon discharge patients with depression showed an 80% improvement from admission, 85% improvement from admission in bipolar patients, 70% improvement from admission in patients with schizophrenia and 60% improvement in the category of patients diagnosed as other diagnoses. This improvement was evaluated comparing the on admission and on discharge Clinical Global Impression Scale (Severity).

Table (1). Distribution of patients by age

Age	Number of Patients
Below 20	17
21 - 30	129
31 – 40	111
41 – 50	71
51 – 60	33
61 – 70	22
Above 70	16

Figure (1)

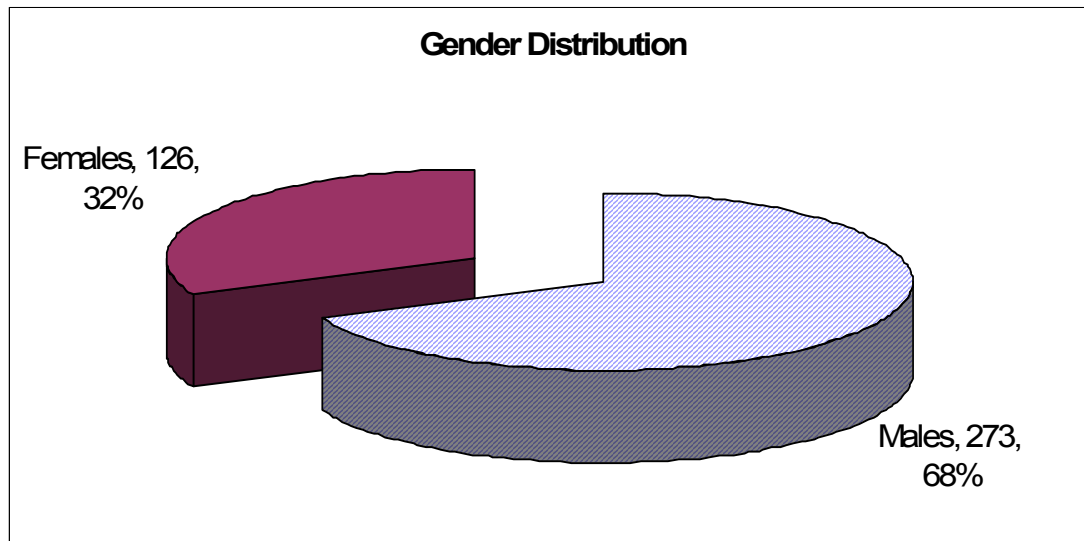


Figure (2)

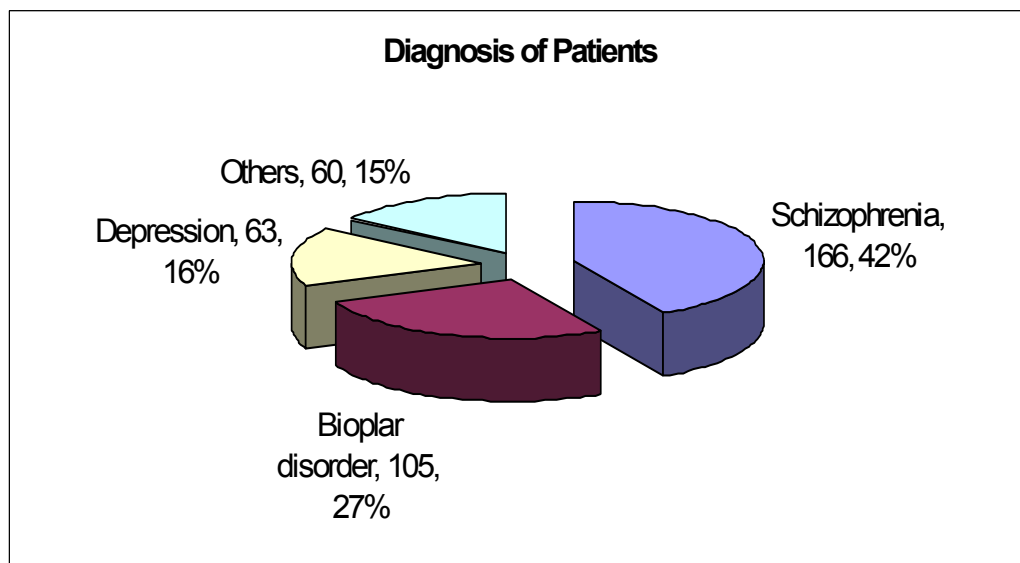


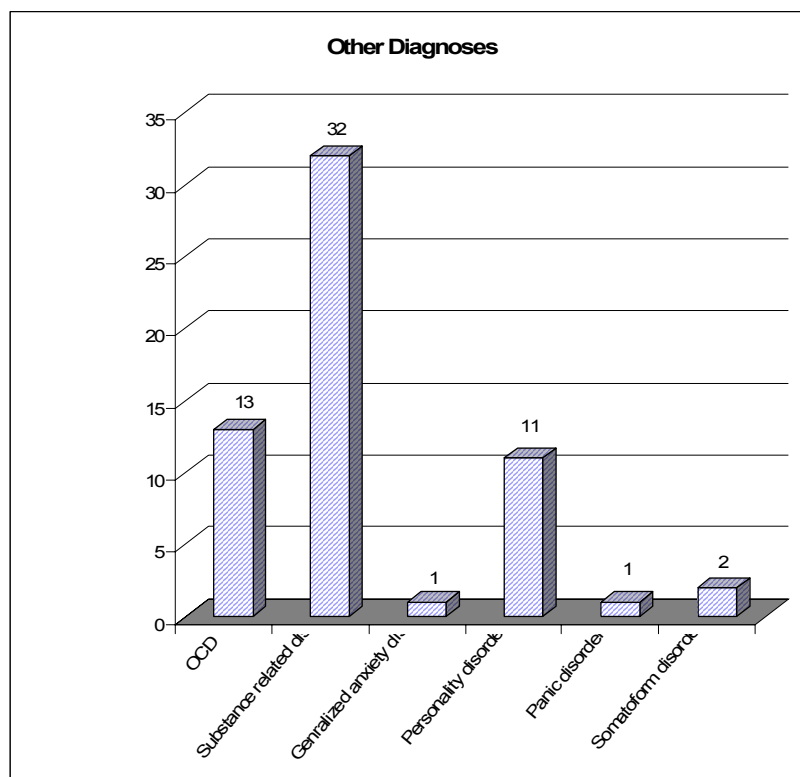
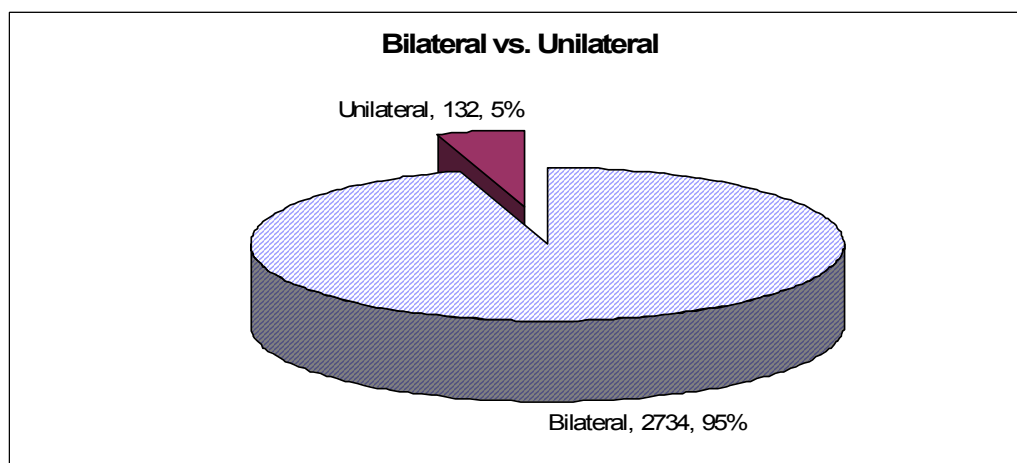
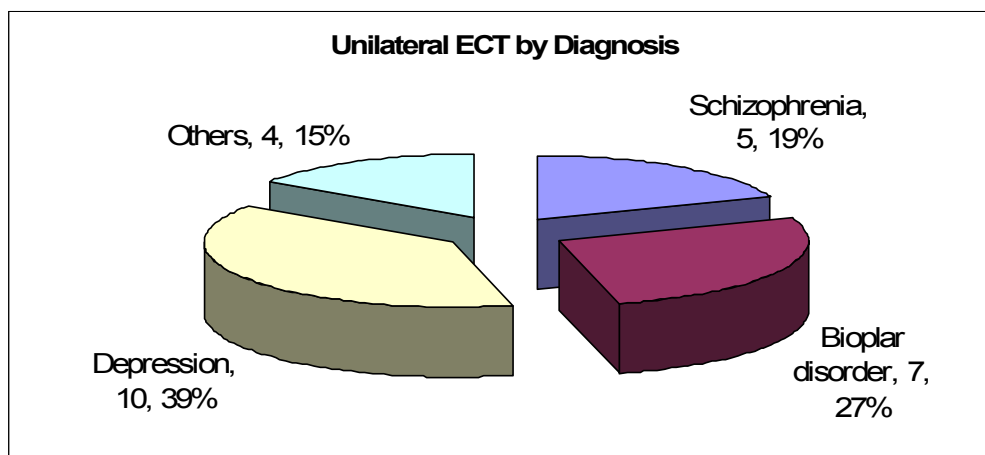
Figure (3)**Figure (4)**

Figure (5)

Discussion

In this study, is to review the practice of ECT in a selective Egyptian sample of inpatients and assess the mortality, complications and outcome of patients.

Some countries like the United States and countries in Europe are reluctant to use ECT despite the evidence of the efficacy of this treatment. ECT was used in patients suffering from depression, mania and schizophrenia which are slightly different from the literature where ECT is mainly used for depression as reported by the Royal College of Psychiatrists (1995). However, recently an abundance of literature has proved that ECT is as effective in mania as it is effective in depression (American Psychiatric Association (2002). The American Psychiatric Association task force on ECT (2001), reported that ECT was underused and that there are many indications for ECT other than mood disorders and schizophrenia.

Out of the 399 patients 273 were male 126 female, the lower rate of female patients is

consistent with the culture in Egypt and most developing countries where families prefer not to admit female patients for fear of stigma or because it might jeopardise their chances of getting married.

Many treatment algorithms developed over the years stated that ECT was used as last resort treatment for patients who were not responding to pharmacotherapy or psychotherapy. Recently all these algorithms state the efficacy of ECT and the importance of using it patients to reach faster response and allow our patients to have a better quality of life.

Egypt and most developing countries have many economic and financial problems which necessitate finding a treatment which has a rapid onset of action, shorter duration of stay in hospital, leads to the use of lower doses of pharmacotherapy and is cheap compared to the newer generations of antipsychotics and antidepressants. ECT is one of the main answers.

In a study conducted in Egypt by Okasha and Ramy (2006) to review the economical

aspects of using ECT in mania, carried out on 60 patients in both a university hospital and a private psychiatric hospital, it was found that patients receiving ECT for the treatment of mania compared to patients not receiving ECT had a shorter hospital stay at 19 days versus 38 days and the cost of hospitalization was 4845 EGP (850 USD) compared to 8464 EGP (1485 USD) in the non ECT group. The cost of treatment as well as the duration of stay in hospital are critical factors in psychiatric health care in Egypt, where the turn over is high in hospitals in order to accommodate patients in need for hospitalization and at the same time decreasing the cost of hospitalization, which is essential due to budget constraints, noting that unfortunately, the majority of patients pay for these services out of their pockets in Egypt.

Similarly the use of ECT in patients with co-morbid severe depression with other axis I diagnoses such as OCD, panic and substance abuse was effective in the alleviation of depression and improving the symptoms of the primary diagnosis with pharmacotherapy, this does not mean that ECT should be used as a first line treatment for these disorders.

From the 2866 ECT sessions there were no mortalities which are in agreement with the literature which states that the mortality rate with ECT is 1/10000 ECT sessions (Royal College of Psychiatrists, 1995). There were also no cardiovascular or respiratory complications or acute confusion states which are common with the use of non-modified ECT (Beyer et al., 1998).

The group of patients receiving unilateral ECT was in an attempt to decrease the cognitive deficit that patients may suffer with bilateral ECT mainly as recent memory affection.

Developing countries should not follow the steps of developed countries when it comes to algorithms in treatments, but should create their own guidelines for treatment which in more reality based according to their needs and economical situation. It should be the first line treatment for severe depression (psychotic depression), acute mania and excited or agitated schizophrenia.

All psychiatrists should be acquainted with the state of art in giving ECT and be able to present the treatment to the patient and the patient's relatives in a knowledgeable and scientific manner, in order to reduce the stigma and transmit the fact that it is no longer "shock" or "convulsive" treatment. Emphasis on the fact that it should not be the last resort treatment as stated in some treatment algorithms, but rather a first line therapy when indicated.

According to the World Psychiatric Association ethical guidelines known as the "Madrid Declaration", any psychiatrist who is not abreast of knowledge and with holds treatment from a patient is unethical (Okasha et al., 2000). That is to say withholding an effective treatment like ECT from a patient can be considered as unethical.

Based on the evidence derived from randomized controlled trials and extensive clinical experience for nearly 70 years, ECT is, presently, the most effective treatment for certain psychiatric disorders. In consideration of what can be achieved, the most transient memory disturbance is a moderate price. The benefit to risk ratio of ECT is usually favourable.

Principles of biomedical ethics, endorsed four principles of ethics. Without ranking their importance, the principles are

beneficence (doing good), nonmaleficence (not doing harm), autonomy (respect for the individual) and justice (being fair) (Beauchamp and Childress, 2001). Ottosson and Fink (2004) state that in most cases the use of ECT is in agreement with the principles of beneficence, nonmaleficence, and respect for autonomy. Sadly, the principle of justice is far from satisfied.

An urgent goal of mental health care should be to provide access to ECT and eliminate the severe impediments to its use, so long as it can defend evidence based superiority over other treatments.

Limitations of the study

The study was carried out in a selective group of patients who required admission in a private hospital which is not representative of the whole Egyptian patient sample; future studies should also include university and state hospitals. In depth study of prognosis of different patient diagnoses should be carried out in future studies as well as studies on ECT given on out patient basis.

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