مجلة جامعة بابل / العلوم الصرفة والتطبيقية / العدد (2) / المجلد (17) : 2009

The Trend Of ECT in an Iraqi Teaching Hospital

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Abstract

This study analyzes the pattern of use of electroconvulsion therapy (ECT) in Iraqi teaching psychiatric hospitals between first Jan 2008and first July 2008.ECT was used in (100)patients (9.4%) out of (940) patients admitted during the period under consideration.

About one-third of patients to whom ECT was given were schizophrenics, one-third were patients with acute psychotic disorders (according to DSM-IV criteria or ICD-10), one-fifth were depressed and the remaining with other psychiatric disorders.

Aims of Study

Until recently inadequate information has been available about certain aspects of the ECT in Iraq, particularly about the extent to which the treatment is used, the number of complications which occur, and the generally accepted indications for this treatment.

We felt that hat it would be important to clarify these issue, and for these purposes we carried out this study.

Furthermore we wanted to study the extent to which anesthesia is administered. Treatment with drugs does not have the same aura of extra ordinaries that ECT has.

This study tries to discuss the above ideas.

Introduction

History:

As early as 1785 an account was published by Oliver describing the results of administering camphor in a case of melancholia, camphor was given orally and induced an epileptic seizure which relieved the symptoms.

Laszlo Maduna commented on the apparent biological antagonism between schizophrenia and epilepsy. He noted that the two condition rarely occurred together and that if they did the epileptic fits appeared to have an ameliorating effect on the course of schizophrenia. Meduna, a Hungarian psychiatrist first used the traditional 25% camphor in olive oil, but then introduced metrazol convulsions as a treatment for schizophrenia. Metrazol is a synthetic soluble derivative of camphor which when given intravenously produces epileptic fits. Also in the 1930s, two Italians, Cerletti, and Bini, were working on inducing epileptic fits in dogs by the passage of a brief electric stimulus, they were attempting to produce sclerosis in Amons horn and then to see if it was the cause of temporal lobe epilepsy **(Bini, 1938).**

Cerletti was able to establish that there was a large difference between a convulsant and a lethal dose of electricity. He therefore wondered whether his technique could be safely applied to humans and might provide a more reliable way of inducing fits than metrazol injections. **(Michael, 2004**) Cerletti and Bini induced the first electro-convulsions in man in 1938, in a schizophrenic patient, using a stimulus of 110 volts for half second. agents such as thiopentone and methohexitone, led to the introduction of modified ETC.

This resulted in the virtual elimination of one of the main side effects of early treatment-bone fractures, particularly fractures caused by the massive muscles spasms.

Efficacy

1-Depressive Illness

There is overwhelming evidence that ECT is an effective treatment for severe depressive illness, particularly psychotic depression for which it is the most effective and rapidly acting treatment available.

There have been six studies in recent years, all carried out in U.K., five of these studies showed a clearly positive result in favor of real ECT. Thus refuting the argument that ECT works because it is a powerful placebo **(Brandon *et al.*, 1984).**

Although ECT and the antidepressant drugs are effective in similar population, a number of comparative studies has shown that ECT is significantly more effective with marked improvement generally occurring in 80-90% of the patient. **) (Theodor, 2002)**

2- Mania:-

ECT was widely used for the treatment of mania before chloropromazine became available in 1953, and was generally regarded as a highly effective . **(Uleett ,1956).**

McCabe (1976) showed that ECT-treated manic fared significantly better than untreated manic in terms of mortality, time spent in hospital and social recovery.

Small *et al* (1986) showed both treatment to be effective but suggest that ECT may have advantages in production greater and more rapid symptom relief. **(Valentine& Dunne 1980)**

The important question is not whether ECT is better than no treatment but whether it has any advantage over chlorpromazine, Haloperidol or Lithium . ECT should not be used concurrently with lithium because of increasing evidence that this may produce diminished therapeutic effect, along with increased neurophysiologic side effects **(Louis,2001)).**

3-Acute Schizophrenia

Although Meduna's convulsive therapy was originally introduced as a treatment for schizophrenia and Cerletti's electroconvulsive therapy were extensively used for that purpose in 1940s and 1950s, the formal evidence that it is an effective treatment for this condition has never been strong **(Abraham 1987)**. Clinical opinion appeared to be about equally divided between those who think that ECT is occasionally an appropriate treatment in acute schizophrenia, and those who think it is not. It appears that ECT does not produce greater symptomatic relief than phenothiazine, and does not reduces the length of stay in hospital or affect relapse rate **(Michael& Philip, 2004)**. Drugs plus psychotherapy or drugs alone gave the best result, psychotherapy and meliu therapy produced the worst response, and ECT was in mid way**)(Louis 2001)**. When phenothiazine plus ECT were compared with phenothiazine plus simulated ECT in schizophrenic patient the former group showed significantly greater improvement upto 8 weeks but at 12-16 week from the start of the treatment the phenothiazine plus simulated treatment group had caught up.

4-Chronic Schizophrenia

There is powerful evidence from a number of studies that ECT is not an effective treatment in this condition. Schizophrenic patients may, however occasionally develop marked depressive symptoms warranting treatment with anti depressant or ECT **(Valentine, 1980).**

Both ECT and major tranquilizer are significantly less effective with chronic schizophrenic patient, although there is evidence that some apparent non-responders to

pharmacological treatment may improve with ECT

5-Other Disorders:-

ECT has been tried with nearly every known type of mental disorder, however, except for the condition mentioned above it has not been very successful **(Theodor, 2002).**

Neurotic condition, including neurotic depression do not respond well to ECT and the same is for psychosomatic and personality disorders **(Theodor, 2002)**

There is no evidence that ECT effective in delirium tremens, organic confessional states or as an aid to narcotic drug withdrawal **(Lawrie, 2004).**

. However, quite surprising psychotically depressed patients with organic brain syndrome may be treated effectively with ECT, even without a significant increase in the level of organic impairment . This may even be the case when the symptomatology is clearly secondary to organic disease process itself whether it be senile dementia, drug induced psychosis (including withdrawal state) or general paresis. Contrary to what one might expect the side effects of ECT appear to be potentiated less by aging than are the side effects associated with antidepressant and major tranquilizer.

A number of reports have also suggested that ECT may be helpful, in cases of chronic pain **(Freeman ,1995)** and various other types of somatic dysfunction, but is possible that some of these successful cases may actually be indicative of affective disorders e.g. a depressive equivalent. ECT should not be used as a treatment of last resort, simply because all other treatments have failed, or as a means of controlling aggressive behaviour, ECT does seem to be an effective treatment in puerperal psychosis and in some schizo-affective disorders, and this reflect the affective nature of a large proportion of these illness. **(Weiner, 1979).**

Physiological Changes With ECT

Is important to know physiological changes to assess the possible risk and clinical contra –indication.

1-Cardio Vascular Effects

-Pulse Rate:

Without atropine, there is initial bradycardia followed by a rapid rise in pulse rate, toward the end of seizure the heart rate falls, there is then a secondary but less marked tachycardia subsiding over several minutes. Both the initial sudden bradycardia and the relatively bradycardia at the end of the seizure can be abolished by atropine. The tachycardia in the order of 130-190 beat per minute.

-Blood Pressure

Changes in this mirror those in the heart rate, again atropine abolished the initial and secondary falls. When muscle-relaxants are used in modified ECT the blood pressure fluctuations are smoother but systolic levels of over 200mm/Hg are still the rule.

-Cerebral and peripheral blood flow:

The former increases by approximately 200 percent and there is probably some decrease in the latter. ECT produces a large increase in blood-brain barrier permeability.

-ECG Finding :-

The incidence of transient arrhythmias, usually occurring at the end of the seizure, is rather high. These may be vagally or sympathetically induced. The incidence of vagal arrhythmia can be as high as 70% if atropine is not used.

Bankhead *et al.*, (1950) found that even with modified ECT 30% of patient had vagal

arrhythmia but all of these could be prevented if the atropine dosage were raised sufficiently

2-Eeg Changes

It should not be assumed that EEG is a totally useless investigation after a course of ECT. Some studies particularly after unilateral ECT have shown that the EEG becomes normal within a few days.

A normal EEG may therefore be helpful result in excluding certain pathologies but abnormal EEG would be difficult if not possible to interpret.

In the sleep EEG, ECT appears to increase rapid eye movement (REM) sleep, to decrease REM latency, and to reduce total sleep time. Interestingly anti-depressant therapy has opposite effect, it decreases REM sleep and the timing of decrease and therapeutic improvement seem to be related **(Frederikson and D'elia , 1979).**

3- Biochemical changes

The main theory of depressive illness proposes that depression occurs when the level of biological amines (5-hydroxytryptamine-5HT, Dopamine, and nor-adrenaline) at reactor sites within the brain are reduced or sensitivity to them of post-synaptic receptors decreases. It is suggested that antidepressant drugs work by increasing amine levels at these sites. (**Lawrie, 2004).**

4-Endocrine effect

ECT has a number of endocrine effects. The adrenaline cortex responds rapidly and plasma cortizol levels are increased after a single treatment, the rising lasting for 2-4 hours. Rises also occur in adenocorticotrophic hormone, growth hormone and prolactin levels . **(Louis ,2001).**

Mode of Action of ECT:

As normally given ECT is a complex package, involving the administration of 3 different drugs (atropine, anesthetics, muscle relaxants), all with profound physiological effects, the passage of an electrical current across the head a period of unconsciousness and considerable medical and nursing attention. It may also have a highly charged emotional significance for the patient. In principle therefore, the therapeutic effect could be a function of any one, or any combination of these elements **(Abraham, 1987).**

Cerletti subsequently developed his electroconvulsive therapy with the equally intention of inducing seizure in a more reliable and less distressing manner. So it was assumed from the beginning that the seizure itself was the therapeutic agent.

Studies carried out on unmodified ECT clearly demonstrate that anesthetics and muscle relaxants drugs are not essential and that they probably do not diminish the antidepressant effect of ECT.

Otosson (1960) showed that more powerful electrical stimulation did not have any increased effect and that electrical stimulation that elicited no fit or very limited fit was less effective. He also produced some tentative evidence that the cumulative duration of convulsive activity through a course of treatment was positively correlated with the clinical out come**) (Lawrie, 2004).**

There is no evidence that ECT works by inducing fears, by punishing the patient in accordance with his depressive view of himself or by memory impairment that it produces

Risks and side effects of ECT

The risks and side effects of ECT can be due to seizures, the electrical stimulus itself, the modifying anesthetic and relaxant drugs through their effect on cardiovascular, cerebrovascular and metabolic functioning**) (Michael and, Philip, 2004).**

Death associated with ECT is an extremely rare event, it is about one per 10-000 patients, when death does occur, it is usually due to cardiac arrest produced by vagal stimulation, coronay thrombosis is the second most frequent and others include: pneumonia, cerebral haemorrhage and pulmonary embolism (**Theodor, 2002).**

Orthopedic complication as mid thoracic spinal fractures, fractures of long bones, jaw dislocation and fat embolism secondary to long bone fractures were almost exclusively associated with unmodified ECT

Other major complications are all rare occurring in less than one in 500 treatments, they include, myocardial infarction, congestive heart failure, cardiac arrhythmias, pulmonary embolism, aspiration pneumonia, prolonged apnea, cerebrovascular accidents, status epilepticus, bladder rupture, bleeding from peptic ulcer, subconjunctival and nasal hemorrhages Epilepsy occurring after ECT is rare, although it is reported. In fact ECT is an anticonvulsant and fit threshold rises as a course of ECT progresses (**Benjamin, 2003).**

The most common complaints of patients under present method of ECT administration (modified ECT) are muscles ache, memory disturbance, and headaches . Both animal and human studies have revealed that with adequate oxygenation and muscle relaxant, no measurable anoxic effect occur, however, marked cerebral anoxia may occur, if the induced convulsions are not modified by muscle relaxants and oxygen (**Frederikson *et al.*, 1979).**

Memory Disturbances

Of all deficits associated with ECT difficulty with memory has received by far the most huge attention, both by psychiatrists and lay press.

It has been well established that many patients undergoing electrically or chemically induced seizures develop an acute amnestic syndrome similar to that experienced by patients with: grandmal epilepsy, closed head injury, hippocampal lesions, diencephalic, tumours, Karasakoff's syndrome . It consists of both anterograde component (most noticeably for recent events) and difficulty in retaining newly learned information i.e. antegrade deficits Both antegrade and retrograde amnesia diminish in severity over a period of a few weeks after completion of a course of ECT, although the issue of persistent memory loss remains largely unresolved**2) (Bini, 1938; Theodor., 2002)** .

Contraindication of ECT:

There are no absolute contra-indication to ECT. Each case must be assessed on its merits and the clinical question must be asked:- which will cause the greater risk to this patient, continuation of his depressive illness or ECT? whenever possible ECT should not be given to some one with raised intracranial pressure, cerebral aneurysm or a history of cerebral hemorrhage. Recent myocardial infarction (within three months), aortic aneurysm and acute respiratory infection are also relative contraindication**.**

ECT can safely be given to woman during any stage of pregnancy, to patent with cardiac pacemakekers and to epileptics. Since the introduction of the modified ECT there are no orthopedic contraindication to the treatment. Most anesthetists now agree that MAOI do not need to be stopped before general anesthesia.

Preparing the patient for ECT

ECT is a major and effective treatment in psychiatry. It should be properly administered and supervised and a senior psychiatrist should take a continuing interest in the treatment in each hospital. It should not be given in side rooms of wards or in open wards with only screen pulled around to shield the patient. The minimum requirement is a suite of 3 rooms: a pleasant and comfortable waiting room with sound isolation between it and a large properly equipped treatment room, and a comfortable recovery room

1- Medical workup

2 -Informed consent

3- testing for cerebral dominance

Administration of ECT

(1) premeditation and anesthesia:

ECT normally involves the administration of atropine short acting barbiturates anesthetics and muscle relaxants. **(Brandon *et al.*,1984).**

-Atropine:

Anticholinergic agent will decrease the morbidity due to both cardiac arrhythmias and aspiration. The drug can be given I.V. immediately after anesthetics rather than sub-cutaneously 30-60 minutes beforehand and the subject thus spared the discomfort of dry mouth and the attendant risk of drinking.

-Anesthetics:

The use of muscle relaxation which ECT has necessitated the use of extremely fast acting general anesthetics such as methohexitol which is preferable to thiopental in view of its more rapid action and lesser cardiac toxicity.

- Muscle relaxants:

ECT should always be given with the fit modified by a short acting muscle relaxant. Suxamethonium 30-60mg I.V. given through the same needle as anesthetic but from a separate syringe, is the drug of choice. The aim is to relax the patient as completely as possible without abolishing all signs of convulsions. It is occasionally possible to mistake the muscle twitching that occurs during depolarization. For a well modified fit, one should make sure that this stage is over and the patient is fully relaxed before applying the elements .

2)The Electrical Stimulus:)

ECT should never be given with a machine which delivers an untimed stimulus and where the duration of stimulus depends on how long the operator presses the treatment button **(Brandon *et al.*,1984)**

The amount of electrical energy that the patient receives depends on the duration and type of stimulus, and the resistance across the patient's head [19]. With typical resistance of about 500 ohms, a patient receives approximately 36 joules of electrical energy per application . **(Uleett *et al.*,1956).**

Cerletti originally induced seizures with alternative current of 110 volts for half a second, and most ECT machines have been used ever since on some modification of main alternating current. (i.e. a biphasic sinusoidal wave form, with a frequency of 50 or 60 cycle/second, and voltage of between 110 and 260 volts) (**Valentine &. Dunne 1980).**

(3) Electrode placements

When it was first introduced ECT give with one electrode on either side of the head interior to the pinna of the ear and this bilateral placement is still more widely used than

any other. **(Brandon *et al.*, 1984)** The idea of putting both electrodes on the same side, usually over the nondominant hemisphere in order to minimize confusion and memory disturbances, was first tried out in 1940s, but excited little interest until the 1960s, probably because of suspicions that temporary disturbances of memory might be necessary for a therapeutic effect

(4) Number And Frequency Of Treatments:

During the last 20 years there has been a steady reduction both in frequency of administration of ECT and the total number of treatments given in the course. This is partly due to an increasing recognition that memory disturbance and confusion are unrelated to the therapeutic effect, and therefore to be avoided, and partly to an increasing restriction of the treatment to depression, which has long been recognized usually to require a shorter course than schizophrenia. In most hospitals, it is now customary for ECT to be given two or some times three times a week, with an interval of not less than 48 hr between successive treatments, however, it is difficult to be confident that this practice is preferable to, say, one or four treatments a week

In determining how many treatments to be given in a course of ECT, it is usually appropriate to go by the patients clinical response than by a fixed number of treatments. There is no benefit from giving one or two extra-treatment after full recovery had been achieved. However, some studies showed that extra-treatments should be given to prevent relapse

If unilateral ECT was given four times a week instead of twice, the time needed for recovery was reduced by an average of eleven or twelve days without any increase in memory disturbance . **(Brandon *et al.*,1984)**

The attempt to hasten recovery by reducing the interval between successive seizures reached its logical conclusion in the practice of inducing several seizures in succession during a single period of anesthesia, so called multiple ECT(MECT)

Seizures characteristics:

The behavioral manifestation of the seizure are attenuated, but generally not completely suppressed by the muscle relaxant. Concurrent with passage of stimulus current, there is a very short period of muscular contraction, representing the direct effect of electrical current upon neuronal, and muscular systems. Following this at a latency of 1-15 seconds, is the tonic phase of the generalized seizure. Under the muscular relaxation provided by the modified ECT, this is usually manifested most clearly by plantar extension. The tonic phase persists for 5-20 seconds, generally becoming replaced by generalized clonic contractions, which are initially rapid and erratic but eventually reach a frequency of around of two or three per second. The duration of clonic phase ranges widely from as little as a few second up to more than a minute, depending on a number of factors, including degree of anesthesia. Occasionally, convulsive movements may only be present unilaterally, particularly with unilateral ECT, these suggest an incomplete, and thereby probably less effective seizure.

If seizure manifestation do not occur within 15 seconds 937,10), a one-step increase in any of the factors that determine stimulus intensity should be quickly made and the patient restimulated, this may be repeated a third time if necessary, and it may be necessary to provide additional anesthesia or muscle relaxants. If there is still no seizure, further attempts should be postponed until the next session. If the seizure duration is less than 25 seconds, the stimulus intensity should be increased at the next treatment session.

A seizure length of 25-60 second can be considered adequate. A seizure duration of greater than 60 seconds may occur regularly for some patients, even with only slightly suprathreshold stimulus intensity. In some cases, however, a prolonged seizure may indicate that the stimulus intensity should be decreased at the next treatment session **(Brandon *et al.*,)1984.**

Postictal management

Recovery of spontaneous breathing occurs within a minute or two following termination of the seizure, and the recovery of consciousness shortly thereafter. If the patient experiences a prolonged apneic state post ictally, either the dose of muscle relaxant was too large or apseudocholine esterase deficiency is present. If there is delayed return of consciousness, the anesthetic dose should be reduced for the next treatment. Occasionally the post anesthetic delirium similar to that often seen in surgical recovery rooms, will occur but usually does not require pharmacological intervention **(Lawrie: , 2004).**

Public attitude to ECT

It is difficult to psychiatrists, particularly those who see the beneficial effect of ECT on severe depression every week, to understand the wide spread apprehension and suspicion which the treatment sometimes arouses in other people. Unfortunately, most lay men have never heard of diathermy needle or the cardiac defibrillator.

Cerletti, himself was well aware of this from the beginning, as he said some years later: "the idea of submitting man to convulsive electrical discharges was considered utopian, barbaric and dangerous, in every one's mind was the spectre of electric chair"

The irony is that ECT was introduced as an alternative to other chemical means of inducing convulsions, which did not evoke these unfortunate association, and supplanted them because for the patient himself it was less frightening and unpleasant than they were.

For the majority of patients, ECT is no more unpleasant than many other minor medical procedures,… though it is often viewed with apprehension before hand. **(Valentine & Dunne , 1980).**

Methods and Materials

All subjects who received ECT in Baghdad and Ibn-Rushd and Al-Rashad teaching psychiatric hospital between 1st May 2006 and 1st November 2006 were included in the study.

AGE:

The patients ages ranged from 16 -67 years, mean age was 32 years. They have been divided into six age groups as shown in table one

Group	Age (years)	number of patients	percent
Group one:	15-24 years were	19 patients	(19%)
Group two:	25-34 years were	36 patients	(36%)
Group three:	35-44 years were	30 patients	(30%)
Group four:	45-54 years were	9 patients	(9%)
Group five:	55-64 years were	4 patients	(4%)
Group six:	65-74 years were	2 patients	(2%)

The commonest age group was between 25-34 years, they were 36 patients (36%), and the next common was between 35-44 years, they were 30 patients (30%). 85% of our patients were under the age of 45.

SEX:

There were 54 males(54%) and the other 46 patients (46%) were females.

Number And Frequency

ECT was given twice per week and the number of treatment per course ranges from two to twelve(the mean was 5, and the mode was 6).

Electrodes Placement

Bilateral ECT(bitemporal electrode placement) was exclusively used in all patients.

Consent

The consent of the patient or one of his relatives was routinely taken at the time of admission.

Results

ECT was given to patients with the following disorders shown in **Table 2:**

Number Of Patents	Percentage Of Patents	Diagnosis
34	34%	Schizophrenic Relapse
32	32%	Acute Psychosis
20	20%	Affective Disorders
14	14%	Other Psychiatric Disorders

Table 2

The total number of patients with schizophrenic relapse were 34 patients, 20 patients were presented with florid psychosis, 8 patients were presented with affective symptoms, and 6 patients were presented with aggressive behaviour. The results were shown in **Table 4**.

The total number of patients with affective disorders were 20 patients, 6 patients were manic-depressive, 13 patients were severe depression and one patients were neurotic depression. The results were shown in **Table 3.**

The number of patients with other psychiatric disorders were 14 patients, 4 patients were obsessive compulsive neurosis, 3 patients were conversion with depressive feature, 3 patients were puerperial psychosis, 2 patients were mentally retarded with psychosis and the last 2 patients were alcoholics with delusion of infidelity and epilepsy with psychosis. The results were shown in **Table 5**.

AGE:

Patients were distributed on age group as follows:

Schizophrenic relapse patients were most common in age group between 35-45 years, they were 12 patients (27.2%), the next common were 15-24 years, they were 10 patients (22.7%).

In acute psychotic patients, the commonest age group was between 25-34 years, they were 16 patients (50%), and the next common was 15-24 years, they were 8 patients (25%).

Patients with affective disorders, the commonest age group was 35-44 years, they were 8 patients (40%), and the next common was 25-34 years, they were 6 patients (30%). The results show in **Table 6**.

Sex:

Patients were distributed on sex as follows:

In schizophrenic relapse, male patients were more, they were 20 patients (58.8%) and the female were 14 patients (41.2%).

In acute psychosis, they were about equally distributed on both sexes.

In affective disorders, female patients were more than males; they were 12 patients (60%) and the males were 8 patients (40%).

Complications

The commonest side effect was memory impairment, following unmodified ECT severe confusion and excitement were frequent.

Complication were more with modified ECT. No death or bone fracture were reported in relation to ECT, very few complication including tooth damage, prolonged apnea cyanosis due to secretion and fewer cases of vomiting and allergic reaction.

Table 1: Age distribution of cases who were treated with ECT

Age Groups In Years	Number Of Cases	Percentage
15-24	**26**	**26%**
25-34	**33**	**33%**
35-44	**31**	**31%**
45-54	**7**	**7%**
55-64	**2**	**2%**
65-74	**1**	**1%**

Table 2: the diagnosis of patients who were treated with ECT

Diagnosis	Number	Percentage
Schizophrenic Relapse	**34**	**34%**
Acute Psychosis	**32**	**32%**
Affective Disorders	**20**	**20%**
Other Disorders	**14**	**14%**
Schizophrenic Relapse With Aggressive Behaviour	6	17.7%

Table3: the presentation of patients with affective disorders who were treated with ECT

Diagnosis	Number of cases	percentage
Manic-depressive	**6**	**30%**
Severe depression (endogenous depression)	**13**	**65%**
Neurotic depression	**1**	**5%**

Table 4: the presentation of patients with schizophrenic relapse who were treated with ECT

Diagnosis	Number Of Cases	Percentage
Schizophrenic Relapse With Florid Psychosis	20	58-8%
Schizophrenic Relapse With Affective Symptoms	8	23.5%

Table 5: the diagnosis of patients with other disorders who were treated with ECT

Diagnosis	Number of cases	percentage
Obsessive compulsive neurosis	4	28.6%
Conversion (hysteria) with depression	3	21.45%
Purperial psychosis	3	12.45%
Mental retardation with psychosis	2	14.3
Epilepsy with psychosis	1	7.15%
Alcoholism with psychosis	1	7.15%

Table 6: Distribution of age group on cases who were treated with ECT

Age groups in years	Schiz-relapse		Acute psychosis		Affective disorders	
	No.	No.%	No.	No.%	No.	No.%
15-24	11	32.4%	8	25%	--	--
25-34	9	26.4%	16	50%	6	30%
35-44	12	35.2%	6	18.8%	8	40%
45-54	2	6%	1	3.1%	4	20%
55-64	--	--	1	3.1%	1	5%
65-74	--	--	--	--	1	5%

Table 7: Sex distribution of cases who were treated with ECT

sex	Schizophrenic relapse		Acute psychosis		Affective disorders	
	No.	No. %	No.	No. %	No.	No.%
Males	20	58.8%	16	50%	8	4o%
females females	14	41.2%	16	50%	12	60%

Discussion

The pattern of use of ECT differs in different countries, the American psychiatric association survey in 2001 showed that the indication for it in the USA were in order of frequency, severe depression, manic excitement and schizophrenia, the Swedish and Denmark pattern were similar to that in USA . **(D'elia and Raotma ,1975).**

While ECT is going out of vogue in the west, it continues to be important in the Iraqi psychiatric practice.

* our own percentage in the present study was 9.4% and our pattern of use differs from the western one in that about one-third of the cases treated with ECT has been schizophrenics, one-third were acute psychosis and only one-fifth depressives.

In addition, the number of ECT treatment were much decreased after the war 2003, comparison was made before, during the year 2004 the number of patients admitted were 1850 patients and the number of ECT treatment which were given 2351 treatments, while in 1994 the number of patients admitted were 1726 and the number of ECT treatments were 3567.

So there were about 50% decreased in the number of treatments after the war 2003. This decrease in ECT use was probably due to increased drugs availability resulted from the effect of drugs which in turn led to low relapse rates.

ECT has more rapid effect than drugs, where it is effective and it quickly restores the patients earning capacity, a great advantage to the family, particularly in circumstances of war, where his or her day to day earning may be the only source of subsistence for a whole family.

The ECT is inexpensive, simple and convenient, and our patients, by and large, prefer a short course of ECT rather than a long-term regular medication with drugs which may be uncertain in their effect because of the problem of non-compliance.

In Britain, female to male sex ratio was 2.27 **(Gelder& Cowen, 2004)** . In our sample, and as shown in **Table 7**, it is clear that both sexes were equal in acute psychosis, male proportion was higher in schizophrenic relapse, while female proportion was higher among patients with affective disorders, and this goes with the fact that schizophrenia is equal n both sexes, while affective disorders are more in females, in addition, low female proportion in our sample may be because of cultural factors which lead to restriction of admission of females in our society.

* ***Regarding age***, most of our patients were below the age of 5, they were most common in age group 25-3, they were 36 patients (36%), next common age group was 35-44 they were 0 patients (30%).

This age distribution can be explained by the fact that most of patients in our sample were schizophrenics, and schizophrenia is more common in these age groups. In addition, some psychiatrists are careful in prescribing ECT for very young or very old patients.

In Britain two-third of the patients who received ECT were over the age of 50 **(Gelder & Cowen, 2004)** this because depression is more demonstrable in their samples, and ECT has less side effects than drugs in this age group.

***In Denmark**, **Britain** and **Sweden**, unilateral ECT was commonly used n more than half of the patients who were treated**) (Theodor, 2002)**

In Iraq, ECT is exclusively given bilaterally, this technique should be reviewed, since unilateral ECT causes less memory impairment, putting into consideration that a longer

course may be needed, so this may justify the use of bilateral ECT to shorten the period needed for admission, and unilateral ECT used more in older age group which is much less in our sample.

* **In Sweden**, ECT session were given twice weekly and the same were in Denmark **(Gelder & Cowen, 2004)**, in Britain some centers gave it three times and others two times weekly. In our study it is usually given twice a week to shorten the stay of patient in the hospital.

* **In Sweden**, **Denmark** and **Britain**, all ECT treatments were given under general anesthesia, anesthesia administered by anesthetists, anesthetic nurse and psychiatric doctor, except for critical patients where anesthesia was administered by anesthetist . **(Gelder & Cowen, 2004).**

In India, most of ECT treatments were given without anesthesia, probably due to limited number of anesthesiologists . **(Gelder & Cowen, 2004)**

In our study 100 patients (100%) received unmodified ECT. This was probably due to limit number of anesthetists and shortage anesthetic drugs.

Conclusion

ECT is still a commonly used form treatment, about 9.4% of patients admitted in to hospital for psychiatric care in Al-Rashad and Ibn-Rushd and Baghdad centers were given ECT. The figure is higher than 3% and 5% of USA and Sweden and the same as Denmark 10% and lower than 14.3% of cases of India.

To conclude, ECT is a very useful and reasonably safe form of treatment in all functional psychosis, particularly in developing countries.

Very strong evidence against it would be required before four decades of useful experience were to be thrown away for emotional reasons.

Suggestions

I feel that the following suggestions should be taken into consideration:

1. Although ECT is not a hazardous, irreversible or not fully established treatment, and should not be left to inexperienced or junior staff, and in certain circumstances [as in medico-legal cases or in patients with impaired insight coming alone), it is better to be by two psychiatrist's opinions.
2- The overall small risk of ECT ought to lead to consideration of more frequent use of this form of treatment in out-patient settings.
3- In each hospital a consultant should take a full and clearly understood responsibility of ECT clinic for and for the teaching and training for the junior doctors in the theory and practical administration of ECT. He should be available to all staff concerned with giving ECT, personally involved in the clinic and seen to be interested, knowledgeable and effective.
4. Each clinic should keep a register of every patient who attends for ECT: name, identifying information, dates of attendance, number of ECT in this and previous courses, difficulties and complications. This is necessary for the safety of the procedure, for statistical purposes and to deal with any inquiries which may arise later, possibly long after the termination of courses of treatments.
5. Reasonable explanation should be given to patient and his relatives, and taking their consent before doing ECT.
6. The treatment should not be given in stick courses of fixed length. The individual patient's progress should be subjected review and the number of treatments considered

accordingly.

7. An anesthetist should be available during ECT sessions in each psychiatric hospital, however, where anesthetic and resuscitative facilities are inadequate, direct ECT is safer than the modified form.
8. There should be a sufficient appreciation of patient's needs to be treated quietly, unhurriedly, with kindness and respect and, as far as possible, in privacy. There should be few people in the treatment room and no unguarded chatter.
9. Unilateral ECT should be considered especially in old age groups.

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Appendix (1) **(1)ملحق رقم**

Sociodemo graphic data **استمارة المعلومات الإحصائية و الاجتماعية**

الرقم **\التاريخ**

الاسم **\العمر** **\الجنس** **\الديانة**

القومية **\الحالة الزوجية** **\التحصيل العلمي** **\المهنة **

العنوان

عدد أفراد العائلة

الأب **\الأم** **\الأخوة ** **الأخوات**

عدد الأطفال **\تسلسل المريض** **\أخرى **

(2) Appendix Semi-structured interview (2) ملحق رقم

-1اسم المستشفى \اسم الجناح \عدد المرضى الكلي في الجناح \عدد المرضى الذين يعالجون ب(ECT)

-2التشخيص\

-3تاريخ الدخول الحالي \تاريخ الدخولات السابقة\

-4الصدمات الكهربائية -:نوع الجهاز \اسم الشركة \اسم البلد\

\Sin wave \Constant wave\

طريقة إعطاء ECT

-5أول مرة \متكررة \عددها\

-6موافقة المريض \موافقة ذوي المريض \بدون موافقة \موافقة شفهية \موافقة تحريرية\

-7يومياً \بين يوم و آخر \يومين في ألأسبوع \

-8بدون تخدير \تخدير عام \

-9فحوصات \أو بدون فحوصات \

فحوصات \اشعة \تخطيط قلب \فحص سكر \فحص يوريا \مفراس دماغ \تحليل كريات الدم \تحليل سفلس \

-10أحادي الجانب \ثنائي الجانب\

-11مع الأدوية \بدون الأدوية\

الأدوية -:مضادات الذهان \مضادات الاكتئاب \مضادات الصرع \أدوية مهدئة \أخرى \

-12تجرى في عيادة \ ECTبدون عيادة \ECT

عيادة ECTمجهزة \اوكسجين \اميوباك \ Sucker\أدوية طوارئ \غرفة إضافية \ Defibrillator \طبيب باطنية \

-13 هل حدثت وفاة أثناء إجراء إعطاء \ECT، سبب الوفاة \

-14ملاحظات أخرى\