The Use of Electroconvulsive Therapy and the Length of Stay of Psychiatric Inpatients at King Chulalongkorn Memorial Hospital, Thai Red Cross Society

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Background: *Electroconvulsive therapy (ECT) is the effective treatment in psychiatric patients. However, the controversies about the risk and benefit limit the use of this procedure. Some efficacies of ECT may be interesting to use in hospitalized patients such as rapid onset, risk reduction but it may increase the length of stay (LOS) in previous study.*

Objectives: *To study the use of ECT in hospitalized psychiatric patients in the aspect of indication , diagnosis and the length of stay.*

Material and Method: *From August to September 2004 , all 51 cases of psychiatric inpatient medical records were studied . The top five of diagnosis were schizophrenia (49%) , bipolar disorder (23.5%), acute psychosis (7.8%),depressive disorder (5.9%) and dementia (5.9%). ECT was performed in 22 cases (43.1%).*

Results: *The average length of stay was 21.5 ±14.5 days . The mean LOS of the ECT group 25.9±15.8 days was not quite longer compared with 17.8 ±12.7 days of the Non ECT group comparison between the ECT group (64 %) and the non ECT group (36 %) of schizophrenia , the LOS of each group was 27.3±16.7and 16.9±8.8 days which was also not significant . LOS of ECT of the bipolar group (20%) and the non ECT bipolar group (80%) was 10.5±4.9 and 23.0±18.3 days which was not statistically significant (p=0.39). There were 3 major indications for ECT such as a severe violence case, suicidal case, refractory case with the mean LOS of 19.9±10.9, 17.5±12.8, 43.3±21.2 and 31.7±8.3 days subsequently. The patients who had the refractory indication had a longer length of stay than other indications.*

Conclusion: *Overall average length of stay was not longer in the ECT group . The ECT group had a longer length of stay than the non ECT group in the refractory treatment case only . ECT can be used in a psychiatric ward with the efficacy of its indication without prolonged length of stay .*

Keywords: *Electroconvulsive therapy (ECT), Length of stay (LOS), Psychiatry, Diagnois, Inpatient, Thai*

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Electroconvulsive therapy (ECT) is a treatment for mental illness in which a brief application of electric stimulus is used to produce a generalized seizure. In the past ,this treatment was often administered to the most severely disturbed patients residing in large mental institutions. Even the approved efficacy but the controversy concerns about the potential for complication , the protection of the patient's rights especially the high use of ECT in Thailand[1].

Major financial constraints on health care are increasing pressure on hospitals to reduce inpatient lengths of stay[2]. Length of stay was the major contributor to total charges, which included room charges and charges for services, procedures, supplies, and investigations[3].

A study of five European countries demonstrated the vast majority of psychiatric patients (84.8%) had a length of stay of less than 3 months[4]. Despite efforts to decrease lengths of acute psychiatric hospital stays, some inpatients continue to have extended stays. Length of stay (LOS) is an important indicator of efficiency for inpatient care.

King Chulalongkorn Memorial Hospital is a 1400- bed university hospital in Bangkok ,Thailand. In 2002 ,there were 28,364 psychiatric outpatient visits. For 14 beds of psychiatric inpatient ward , there were 204 inpatient visits per year[5]. Mean overall LOS

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was 20.6 ±14.6 days. The use of inpatient psychiatric services has been correlated with certain demographic and clinical variables such as psychotic disorders, personality disorders, marital status and unemployment were related to psychiatric admissions from community care[6].

The general indication to admit psychiatric patients are violence, suicidal behavioral, refractory treatment, psychosocial, academic or research purposes. The using of electroconvulsive therapy (ECT) in the psychiatric ward has been claimed that it prolongs the length of stay.

Material and Method

Procedure

The medical records of patients admitted to the inpatient psychiatric ward, department of Psychiatry, King Chulalongkorn Memorial Hospital, the Thai Red Cross Society from August to September 2004 were analyzed in the present study. The psychiatric inpatient setting here was an unlocked ward with a mileu therapeutic environment. Diagnosis, epidemiologic data, use of electroconvulsive therapy (ECT) and the length of stay were focused. ECT here is a modified and multiple type. Every case treated with ECT was informed about the advantages and disadvantages of this method and then signed the ECT consent form before doing this procedure. There was no report of severe morbidity or mortality after 30 years experience of ECT here.

The diagnosis of disease was reviewed and grouped in order to study the relationship between each factor. ECT would be planed for patients after the first week of inpatient evaluation of treatment in the indication of severe violence or refractory case except the high risk suicide indication which was done in the first week of inpatient visit. Generally, discharge planning was done in the second weeks of inpatient visit, the patients who fulfilled the indication of admission was discharged at the end of the 3rd week. ECT was continued as an outpatient after discharge in the cases who did not finish the course. Compared between the patients who received ECT (ECT group) and those who didn't receive ECT (non ECT group) with the length of stays of each group were performed. Indications of ECT in the ECT group were also studied for the association with the length of stay.

Statistic analysis

The length of stay of the ECT group and non the ECT group was compared using the SPSS version 11.0 Software (SPSS, Chicago, IL), frequency, number and percentage distribution with mean ± SD were described and compare the length of stay of ect and non ect groups.

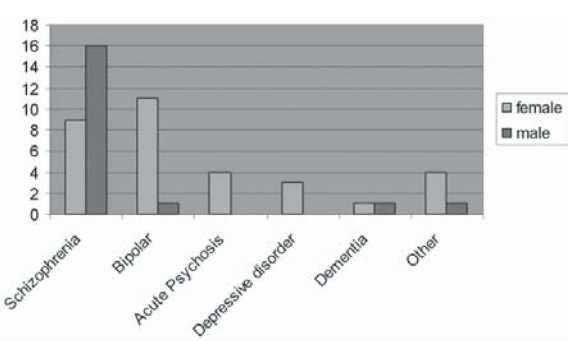
Results

The 51 inpatient cases were 32 females and 19 males. The diagnosis consisted of schizophrenia 25 (49.02%) , bipolar disorder 12 (23.53%) , acute psychosis 4 (7.84%) , depressive disorder 3 (5.88%), dementia 2 (3.92%) and 5 (9.81%) for others. Gender and mean age for each diagnosis are shown in Table 1 and Graph 1. The most common diagnois was schizophrenia. Females were more common than males in the bipolar disorder. The oldest patient was seen in the dementia group.

Each diagnosis was divided to ECT and non ECT group. 2 bipolar patients were excluded because of early discharge against medical advice. There were 16 schizophrenia, 2 bipolar, 2 acute psychosis and 2 for others in the ECT group. For non the ECT group, there were 9 schizophrenia, 8 bipolar, 2 acute psychosis and 3 for others. The mean LOS is shown in Table 2 and Graph 2. The longest length of stay was in the acute

Table 1. The demographic and clinical diagnosis of the inpatient psychiatric ward during August-September 2004

Diagnosis	Total (%)	Female	Male	Mean age (year)
Schizophrenia	25 (49.2)	9	16	35.5
Bipolar	12 (23.5)	11	1	38.1
Acute Psychosis	4 (7.84)	4	0	24.0
Depressive disorder	3 (5.88)	3	0	47.7
Dementia	2 (3.92)	1	1	75.5
Others	5 (9.81)	4	1	27.6
total	51 (100.00)	32	19	36.7



Graph 1. Gender and psychiatric diagnosis

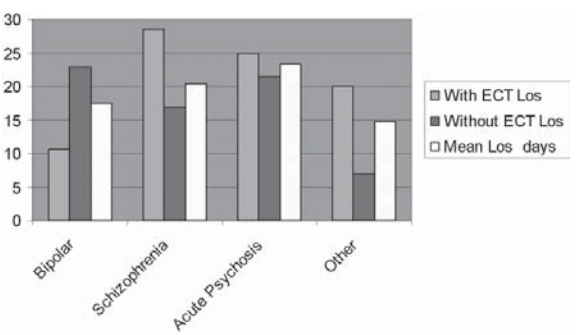
Table 2. The relation between Diagnosis, Mean LOS and ECT

Diagnosis	Mean LOS ± SD		With ECT		Without ECT	
	N	days	N	Los	N	Los
Schizophrenia	25	20.3±15.0	16	27.3±16.7	9	16.9±8.8
Bipolar	10	20.5±17.1	2	10.5±4.9	8*	23.0±18.3
Acute Psychosis	4	23.3±9.4	2	25.0±5.7	2	21.5±14.8
Others	10	17.3±11.8	2	22.5±23.3	8	14.6±9.1
Total	49	21.4±14.4	22	25.9±15.8	27	17.8±12.7

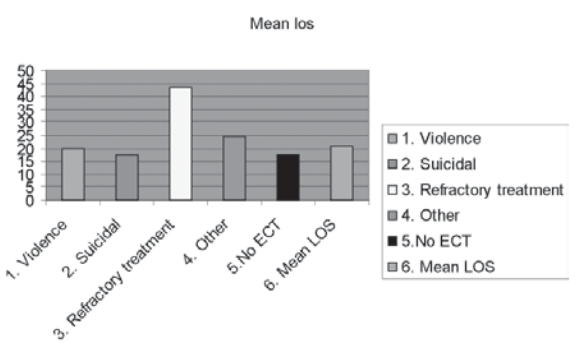
* Not including 2 cases who discharges themselves against medical advice

psychosis group whereas the shortest length of stay group was seen in the others.

There were 4 major indications for ECT as describes in Table 3 and Graph 3. The mean LOS was 19.9±10.9, 17.5±12.8, 43.3±21.2, 31.7±8.3 days for severe violence, sucidal, refractory treatment and other indications. The mean LOS for the ECT group was 25.1±15.9 days compared with 17.8±12.7 days of the Non ECT group. Mean overall LOS was 21.4±14.4 days. The common side effects of ECT were headache, transcient amnesia and dental complications.



Graph 2. Compare LOS each diagnosis with or without ECT



Graph 3. Mean LOS and indication of ECT

Table 3. Indication of ECT and LOS

ECT group Indication of ECT	N	Mean LOS
1. Severe violence	9	19.9±10.9
2. Suicide	6	17.5±12.8
3. Refractory treatment	4	43.3±21.2
4. Others	3	31.7±8.3
Total	22	25.1 ±15.9

Discussion

The present study indicates that the ECT group did not have longer length of stay than the Non ECT group. The use of ECT, major tranquillizers antidepressants and mania symptom increased the length of hospitalization[7].

The length of stay

Psychiatric inpatients, who may not be discharged from the acute ward then occupied acute ward beds and prolonged the length of stay[8]. Possible predictors of length of stay (LOS) were: age; sex; place of residence: diagnosis, use of electroconvulsive therapy; co morbidities; symptoms at admission, medications, marital status, and response to treatment[9].

The study demonstrates that while 74% of one-time patients with short stays used only a fifth (18.0%) of the bed days, the highest users were not the long-term users, but instead the 22.9% occasional extended-stay patients who used 70.0% of the total bed days[10].

According to the efficientcy of care, one study showed the mean observed LOS was 2 days longes than predicted for the group of records with inefficient care, whereas for the group with acceptable efficiency, observed mean LOS was 4 days lower than predicted[11].

Psychiatric diagnosis and Length of stay

Schizophrenia: Psychiatric disorders had variable ranges of length of stay[12]. The present study

shows the length of stay of Schizophrenia with no longer LOS in the ECT group. However, in this group, there were 4 refractory schizophrenic patients who had 43.3±21.2 days of stay which was statiscally longer than other indications (p=0.008). The detection and early management of cormobidity substance related disorder in major psychiatric diagnosis especially Schizophrenia showed a reduction of length of stay[13].

Bipolar disorder: Mean LOS of bipolar disorder was 20.5±17.1 days compared with 14.8 days in one study in the United States[14]. According to LOS of bipolar with ECT , there were 10.5±4.9 days LOS compared with 23.0±18.3 days of non ECT. This finding was the same as the previous study in Brazil which had similar LOS in ECT and non-ECT admissions (12, 13 days)[15] The predictors of ECT prescription in bipolar disorder were history of previous admission, psychotic features, female gender and married .

Acute psychosis: There was no difference between length of stay of the ECT or non ECT in this diagnosis. ECT is an effective treatment for psychoses even when complicated by acute delirium[16].

Depressive disorder: No patient received ECT in this setting .However ,the short-term most successful somatic treatments of severe refractory depressives referred to an affective disorders service over a 10-year period were the very-high-dose antidepressants usually augmented with lithium and often combined with ECT, were the most effective somatic treatments[17]. Compared with Schizophrenic and Affective disorder , the groups did not differ in their discharge placements, or in their length of stay[18]. Patients with personality disorder such as borderline type have a poorer acute response to ECT[19].

Dementia: In this setting, the average age was 75.5 years and the length of stay was 19 days. The LOS of over 12% of the inpatients dementia was 26 days or more (average LOS 14.1). Factors significantly associated with longer LOS were: receiving electroconvulsive therapy (ECT), higher Brief Psychiatric Rating Scale (BPRS) positive symptoms scores, falling, pharmacology complications, multiple prior psychiatric hospitalizations, requiring court proceedings to continue hospitalization or medicate against will, consultation delays and not performing ECT on weekends[20]. Despite a higher level of physical illness and cognitive impairment, even the oldest patients with severe major depression tolerated ECT in a manner similar to that of younger patients and demonstrate similar or better acute response[21].

Indication of ECT and Length of stay

Severe violence: There are few studies about the efficacy of ECT of this indication. A wide variety of medications for the pharmacological treatment of aggression have been recommended: typical and atypical antipsychotics, benzodiazepines, mood stabilizers, beta-blockers and selective serotonin reuptake inhibitors (SSRIs). Clozapine was recommended to be the first choice in aggression treatment[22]. The mean length of stay was estimated in the overall group in violent patients. Providing a safe and therapeutic environment for patient recovery significantly reduced the use of restraints and seclusion[23]. There was no report for impact of violent inpatients at that time

Suicide: There were 6 patients who received and had a good response to ECT with this indication. The length of stay of this group was 17.5±12.8 days. There was no quite different length of stay with non-suicide indications (p=0.18). Compared between expressed suicidal intent in depressed patients was rapidly relieved with ECT[24]. Several variables were associated with a higher risk for suicide risk, including length of stay less than 14 days, poorer continuity of care, and lack of readmission within 6 months[25].

Refractory treatment: ECT combined with neuloleptic were effective in improving psychopathology and quality of life in patients refractory to antipsychotic medication alone.

The refractory cases usally consist of the case form outpatient service and may need a longer length of stay. In the present study, this group had 43.3±21.2 days of stay which was statically different from the other indication (p=0.08).

Discharge against medical advice: There were 2 cases of Bipolar disorder in this setting who were discharged against medical advice, one case wanted folk healer treatment and one wasn't satisfied with the ward environment. Patients who leave hospital against medical advice represent a high-risk population: they suffer a greater incidence of mental illness and substance abuse[26].

Conclusion

The use of ECT in psychiatric inpatients was not different from outpatients. Generally the patients who received ECT treatment had a longer length of stay in contrast with no statistical difference in the present study. The length of stay also had no statistical difference in any diagnosis with or without ECT. However, the most common indication using ECT in this setting was a refractory case which may need a

prolonged length of stay. ECT was safe in the management of patients at risk. The efficacy of ECT for severe violence should be investigated in the future.

The impact of discharge planning on readmission rates, hospital length of stay, health outcomes and cost is uncertain[27]. Implementing psychiatric interventions on a medical ward effects on patients' quality of life improvement and shorthens the length of hospital stay[28].

Limitations: Only one university hospital was included in the present study. The study may need longer period of duration .

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การรักษาผู้ป่วยจิตเวชด้วยไฟฟ้า และระยะเวลาครองเตียงของผู้ป่วยในโรงพยาบาลจุฬาลงกรณ์สภากาชาดไทย

เดชา ลลิตอนันต์พงศ์

ที่มาและเหตุผล: การรักษาด้วยไฟฟ้า เป็นวิธีการรักษาที่มีประสิทธิภาพในการรักษาผู้ป่วยจิตเวช อย่างไรก็ตาม เป็นวิธีที่มีทั้งข้อดีและผลข้างเคียงจากการรักษา ทำให้เป็นวิธีที่ไม่ได้รับความนิยมอย่างแพร่หลาย ข้อบ่งชี้ในการรักษาด้วยไฟฟ้า ในผู้ป่วยในจิตเวช ได้แก่ ได้ผลเร็ว การลดความเสี่ยง การศึกษาที่ผ่านมา พบว่า ทำให้ระยะเวลาครองเตียงนานขึ้น

วัตถุประสงค์: การศึกษาการรักษาด้วยไฟฟ้า ในผู้ป่วยในจิตเวช ในแง่มุมของ ข้อบ่งชี้ วินิจฉัย และระยะเวลาครองเตียง

วิธีการศึกษา: รวบรวมข้อมูลจากเวชระเบียนผู้ป่วยใน จำนวน 51 ราย ที่ได้รับการรักษาแบบผู้ป่วยใน ระหว่างเดือนสิงหาคม ถึง กันยายน พ.ศ. 2547 วินิจฉัยที่พบบ่อยที่สุด 5 โรค ได้แก่โรคจิตเภท (ร้อยละ 49) โรคอารมณ์แปรปรวนชนิดสองขั้ว (ร้อยละ23.5) โรควิกลจริต ชนิดเฉียบพลัน (ร้อยละ 7.8) โรคซึมเศร้า (ร้อยละ 5.9) และโรคสมองเสื่อม (ร้อยละ5.9) ผู้ป่วยจำนวน 22 รายได้รับการรักษาด้วยไฟฟ้า (ร้อยละ 43.1)

ผลการศึกษา: ระยะเวลาครองเตียงเฉลี่ยคือ 21.5±14.5 วัน ผู้ป่วยที่ได้รับการรักษาด้วยไฟฟ้า มีค่าเฉลี่ยของวันครองเตียง คือ 25.9±15.8 วัน ซึ่งไม่แตกต่างกันกับกลุ่มไม่ได้รับการรักษาด้วยไฟฟ้า มีระยะเวลาครองเตียงเฉลี่ย 17.8 ±12.7 วัน เมื่อเปรียบเทียบระหว่างกลุ่มผู้ป่วยโรคจิตเภทที่ได้รับการรักษาด้วยไฟฟ้า (ร้อยละ 64) และกลุ่มผู้ป่วยโรคจิตเภทที่ไม่ได้รับการรักษาด้วยไฟฟ้า (ร้อยละ 36) ก็มีระยะเวลาครองเตียงเฉลี่ย 27.3±16.7 และ 16.9±8.8 วัน กลุ่มผู้ป่วยโรคอารมณ์แปรปรวนชนิดสองขั้ว ที่ได้รับการรักษาด้วยไฟฟ้า (ร้อยละ 20) และกลุ่มผู้ป่วย โรคอารมณ์แปรปรวนชนิดสองขั้ว ที่ไม่ได้รับการรักษาด้วยไฟฟ้า (ร้อยละ 80) มีระยะเวลาครองเตียงเฉลี่ย 10.5±4.9 วัน และ 23.0±18.3 วัน ข้อบ่งชี้ที่พบบ่อย 3 กรณีในการรักษาด้วยไฟฟ้า คือ ผู้ป่วยก้าวร้าวอย่างรุนแรง ผู้ป่วยคิด ฆ่าตัวตายและกลุ่มที่ดื้อต่อการรักษาและอื่น ๆ โดยมีระยะเวลาครองเตียง 19.9±10.9, 17.5±12.8, 43.3±21.2 และ 31.7±8.3 วัน ตามลำดับ ผู้ป่วยกลุ่มที่มีข้อบ่งชี้ดื้อต่อการรักษามีระยะเวลาครองเตียง นานกว่า ข้อบ่งชี้อื่น

สรุป: กลุ่มผู้ป่วยที่ได้รับการรักษาด้วยไฟฟ้า ไม่ได้มีระยะเวลาครองเตียงนานกว่ากลุ่มที่ไม่ได้รับการ รักษาด้วยไฟฟ้า กลุ่มผู้ป่วยที่ได้รับการรักษาไฟฟ้า ที่มีข้อบ่งชี้ดื้อต่อการรักษาจะมีระยะเวลาครองเตียงนานกว่า กลุ่มที่มีข้อบ่งชี้อื่น การรักษาด้วยไฟฟ้าสามารถใช้ได้ในผู้ป่วยใน และมีประสิทธิภาพ ตามข้อบ่งชี้ โดยไม่ทำให้ระยะเวลาครองเตียงนานขึ้น