

Electroconvulsive Therapy in the Adolescent Group Case Report

Arif Onder¹, Asli Surer Adanir²,
Yakup Dogan¹, Oznur Bilac¹,
Canem Kavrurma¹

¹Manisa Mental Health and Diseases Hospital, Department
of Child and Adolescent Psychiatry, Manisa - Turkey
²Akdeniz University Hospital, Department of Child and
Adolescent Psychiatry, Antalya - Turkey

ABSTRACT

Electroconvulsive therapy in the adolescent group case report

Electroconvulsive therapy (ECT) is an effective method for the treatment of mental illnesses. Use of ECT in children and adolescents is rare although studies have shown equal efficacy as in adults with lower rate and severity of adverse effects. This paper discussed the impact of ECT usage in three adolescent patients who were diagnosed with several disorders and refractory to other treatment modalities. It was observed that all three adolescents benefited from the treatment with few adverse effects. If resistance to other modalities exists in adolescent patients, ECT should be considered and applied; and if not applicable, the patient should be referred to the centers where it is applied. In addition, we believe that such efforts that help clinicians increase their knowledge and experience on ECT and promote the conditions to implement ECT in child and adolescent psychiatry clinics will be useful.

Keywords: Adolescent, electroconvulsive therapy, treatment refractory

ÖZ

Ergen grupta elektrokonvulsif tedavi kullanımı olgu sunumu

Elektrokonvulsif tedavi (EKT) ruhsal hastalıkların tedavisinde kullanılan etkin bir tedavi yöntemidir. Yapılan çalışmalarda; çocuk ve ergenlerde erişkindekine eşit etki göstermesine, düşük yan etki sıklık ve şiddetine karşın çocuk ve ergen grupta EKT kullanımı nadirdir. Bu makalede çeşitli hastalıklarla servisimize yatan diğer tedavilere dirençli üç hastada EKT kullanımının etkilerinden söz edilecektir. Her üç olgu da incelediğinde uygulanan tedaviden ergen grupta hastaların fayda gördüğü ve düşük derecede yan etki oluştuğu gözlemlenmiştir. Ergen grubunda diğer tedavilere direnç halinde EKT tedavisi seçenekler arasında değerlendirilmeli ve uygulanmalı, uygulanmadığı durumlarda hasta uygulanabilen merkezlere yönlendirilmelidir. Ayrıca klinisyenlerin de EKT konusunda bilgi ve deneyiminin artırılması ve çocuk ve ergen psikiyatri kliniklerinde EKT yapılabilecek şartların sağlanmasına yönelik çalışmalar yararlı olacaktır.

Anahtar kelimeler: Ergen, elektrokonvulsif terapi, tedaviye direnç



How to cite this article: Onder A, Surer-Adanir A, Dogan Y, Bilac O, Kavrurma C. Electroconvulsive therapy in the adolescent group case report. Dusunen Adam The Journal of Psychiatry and Neurological Sciences 2018;31:201-204. <https://doi.org/10.5350/DAJPN2018310208>

Address reprint requests to / Yazışma adresi:
Arif Onder,
Manisa Mental Health and Diseases Hospital,
Department of Child and Adolescent
Psychiatry, Sehzadeler Mahallesi,
Manisa, Turkey

Phone / Telefon: +90-236-2314624

E-mail address / Elektronik posta adresi:
arifonder86@gmail.com

Date of receipt / Geliş tarihi:
September 2, 2017 / 2 Eylül 2017

Date of the first revision letter /
İlk düzeltme öneri tarihi:
September 29, 2017 / 29 Eylül 2017

Date of acceptance / Kabul tarihi:
October 17, 2017 / 17 Ekim 2017

INTRODUCTION

Electroconvulsive therapy (ECT) is an effective treatment method for the treatment of mental disorders (1). It is still frequently used in adult patients despite all advances in psychopharmacology since 1930's. Although studies reported similar efficacy in children and adolescents with lower rates and severity of adverse effects, the use of ECT in these patient groups is rare (2,3). The frequency of ECT use in children and adolescents was also reported as low in Turkey (4). However, the studies regarding use of ECT in adolescence began in 1980s, where it was reported

to be more effective than psychopharmacology alone in appropriate patients selected in terms of diagnosis, severity of symptoms and refractoriness to psychopharmacology (5). This article will discuss the effects of the use of ECT in three inpatients who were resistant to other treatments with various diseases.

CASE 1

E.A. was a 16-year-old male patient. He was admitted to our outpatient clinic with complaints of aggression, hyperactivity, decreased sleep, increased speech, and talking to the walls. Medical history noted

that he was living in a residence since five years of age with no psychiatric complaint ever till 10 days ago, when his complaints started with aggressiveness. Physical examination showed increased speech, grandiosity, increased psychomotor activity, and accelerated association of ideas. The patient was interned with the diagnosis of manic episode of bipolar disorder. His Young Mania Rating Scale (YMRS) score was 36. After no therapeutic benefit in two months to initial valproic acid 1000mg/day, quetiapine 800mg/day, lorazepam 5mg/day, and additional risperidone 6mg/day, haloperidol 20mg/day, and chlorpromazine 100mg/day; all drugs were discontinued except risperidone and ECT was begun upon approval by neurologists and anesthesiologists. Bifrontal bilateral application started with 40% electric dose, and was increased by 20% at every session to reach at 160%. The initial YMRS score of 30 prior to ECT became 22 after 6 sessions. ECT was terminated at the eighth session, when YMRS score reduced to 4 points. No adverse effects except episodes of short-term amnesia was detected during the ECT. The patient was followed up by Clinical Global Impression-Severity of Illness (CGI-SI) and Clinical Global Impression-General Improvement (CGI-GI) scales. While CGI-SI decreased from 6 to 1, CGI-GI score was 1. After 1 week of follow-up, the patient was discharged with risperidone 6mg/day and quetiapine 600mg/day. There was no new episode after nine months of follow-up in our outpatient setting.

CASE 2

O.C. was a 15-year-old girl, who left the school at 7th grade. While being followed up for a long while by a university hospital with the diagnosis of mild mental retardation and psychosis, she was referred to our clinic because of the refusal to take food and fluid, staying in the same position for a long time, severely decreased speech, inactivity, repetitive aimless movements with an onset of three weeks ago. Her medical history showed special education for mental retardation since her first year of education.

Additionally, she had complaints of self-talking, imaginations, and introversion for 2 years. Upon diagnosis of schizophrenia, she was using olanzapine 20mg/day, which was titrated to 30mg about one month ago due to increased complaints. She did not respond to the questions during her mental state examination, where it was observed that she sat on the chair while bent forward with no movement except continuous head shaking. Her affect was limited and psychomotor activity was almost absent. The content of the thought could not be evaluated. Family history showed a consanguineous marriage in her parents (son and daughter of brothers), where other siblings also had mental retardation. The patient was interned to our clinic with the diagnosis of catatonia. Laboratory tests and neurological examination showed no abnormal finding, olanzapine treatment was rapidly tapered with starting of lorazepam 7.5mg/day. After 1 week of no improvement, ECT was initiated after anesthesia and neurology consultation. Bifrontal bilateral application started with 40% electric dose, and was raised by 20% at every session to reach at 160%. At the end of third session where the dose was 80%, oral food intake was restored with accompanying disappearance of typical posture and stupor. ECT was continued for 12 sessions due to persistence of residual symptoms of schizophrenia. The dose was escalated up to 180%. No adverse effect was seen during ECT. The CGI-SI score declined from 7 to 5 during the treatment. The CGI-GI score was 3. As no additional benefit was observed at the twelfth session, the patient was discharged with quetiapine 600mg/day and aripiprazole 30mg/day to be followed up in outpatient setting.

CASE 3

M.G. was a 15-year-old male patient. After hospitalization in a university hospital twice in last three months, he was referred us with the diagnosis of depression with psychotic features due to unhappiness, anhedonia, aggressiveness, somatic complaints, fears, refractory suicidal thoughts, and

aggressive behaviors during hospitalization. Mental state examination showed the mood to be depressive and the affect be limited. The amount of speech was reduced, giving short answers to questions. Psychomotor activity was decreased. The content of the thought revealed delusions of harm from his family. He was diagnosed with major depression with psychotic features. Due to no response to previously started fluoxetine 60mg/day, alprazolam 2mg/day, sertraline 150mg/day, risperidone 1mg/day, aripiprazole 10mg/day, and 13 sessions of transcranial magnetic stimulation, the patient was switched into venlafaxine 225mg and aripiprazole 20mg. One-month course of this regimen provided no improvement with maintenance of suicidal thoughts and delusions. Neurology and anesthesia consultations approved initiation of ECT. Bifrontal bilateral application started with 40% electric dose, and was escalated by 20% at every session to reach at 160%. The Beck depression scale score, which was 32 before ECT, dropped to 16 by repeated ECT applications. No adverse effect except headache during ECT was described. The CGI-SI score decreased from 6 to 3. The CGI-GI score was 2. Upon regression of suicidal thoughts and delusions, the patient was discharged with partial remission at a dose of 225mg/day of venlafaxine.

DISCUSSION

Although ECT has been shown to be efficacious and safe in clinical situations such as major depression, bipolar disorder, and schizophrenia in adolescents (6,7), it was less frequently preferred in this population compared to that in adults in western societies due to several factors such as concerns regarding potential adverse effects on developing brain, lack of experience, and families' negative perceptions toward ECT. On the other hand, considering the warning by U.S. Food and Drug Administration regarding increased suicidal thoughts and behavior among adolescents due to antidepressants (8,9), and serious adverse effects of psychotropic drugs such as tardive dyskinesia, weight gain, elevated blood glucose and

lipids especially in long-term use (10), ECT seems to be a cheap, practical, effective and safe treatment alternative for the adolescent patients. The unfavorable influence of long-term hospitalization on the social and educational life of a child plus the additional burden on the public costs further indicated the importance of ECT utilization in cases refractory to psychopharmacological treatment. In fact, a review in 2013 including 39 studies reported ECT as an efficacious treatment option with low and mild adverse effects for adolescents with various psychiatric disorders (5). The American Academy of Child and Adolescent Psychiatry handbook on the use of ECT in adolescents published in 2004, recommended ECT in appropriate patients considering the diagnosis, severity of symptoms, and unresponsiveness to pharmacotherapy criteria (7). The criteria include (1) the presence of a disease where ECT is indicated (such as major depression, mania, schizophrenia, etc.); (2) permanent and disabling nature of the disease symptoms; and (3) unresponsiveness to two different psychotropic medications. Furthermore, ECT is recommended to be considered early if (1) the patient does not receive appropriate pharmacotherapy due to side effects; (2) the patient is too inactive to take the medication, or (3) waiting for the time required for the response to pharmacotherapy is likely to be life-threatening for the patient.

Our case series showed that these cases met the criteria of the diagnosis, symptom severity, and psychopharmacologic unresponsiveness, where ECT provided marked benefit and few adverse effects in all three patients, consistent with the literature.

In conclusion, ECT is an effective treatment with a low side effect profile in medical refractory cases. If resistance to other modalities exists in adolescent patients, ECT should be considered and applied; and if not applicable, the patient should be referred to the centers where it is possible. In addition, we believe that such efforts that help clinicians increase their knowledge and experience on ECT and promote the conditions to implement ECT in child and adolescent psychiatry clinics will be useful.

Contribution Categories		Author Initials
Category 1	Concept/Design	A.O., Y.D., C.K., O.B., A.S.A.
	Literature review	A.S.A., A.O., Y.D., C.K., O.B.
	Data analysis/Interpretation	A.O., A.S.D., Y.D., C.K.
	Case follow-up (if applicable)	A.O., Y.D.
Category 2	Drafting manuscript	A.O., Y.D., C.K., O.B., A.S.A.
	Critical revision of manuscript	A.O., Y.D., C.K., O.B., A.S.A.
Category 3	Final approval and accountability	A.O., Y.D., C.K., O.B., A.S.A.
Other	Technical or material support	A.O.
	Supervision	A.O., Y.D., C.K., O.B., A.S.A.
	Securing funding (if applicable)	N/A

Informed Consent: Written consent was obtained from the patients.

Peer-review: Externally peer-reviewed.

Conflict of Interest: Authors declared no conflict of interest.

Financial Disclosure: Authors declared no financial support.

REFERENCES

- Singh A, Kar SK. How Electroconvulsive therapy works?: Understanding the neurobiological mechanisms. *Clin Psychopharmacol Neurosci* 2017; 15:210-221. **[CrossRef]**
- Grover S, Malhotra S, Varma S, Chakrabarti S, Avasthi A, Mattoo SK. Electroconvulsive therapy in adolescents: a retrospective study from north India. *J ECT* 2013; 29:122-126. **[CrossRef]**
- Bloch Y, Levcovitch Y, Bloch AM, Mendlovic S, Ratzoni G. Electroconvulsive therapy in adolescents: Similarities to and differences from adults. *J Am Acad Child Adolesc Psychiatry* 2001; 40:1332-1336. **[CrossRef]**
- Saatcioglu O, Tomruk NB. Practice of electroconvulsive therapy at the research and training hospital in Turkey. *Soc Psychiatry Psychiatr Epidemiol* 2008; 43:673-677. **[CrossRef]**
- Lima NN, Nascimento VB, Peixoto JA, Moreira MM, Neto ML, Almeida JC, Vasconcelos CA, Teixeira SA, Júnior JG, Junior FT, Guimarães DD, Brasil AQ, Cartaxo JS, Akerman M, Reis AO. Electroconvulsive therapy use in adolescents: a systematic review. *Ann Gen Psychiatry* 2013; 12:17. **[CrossRef]**
- Rey JM, Walter G. Half a century of ECT use in young people. *Am J Psychiatry* 1997; 154:595-602. **[CrossRef]**
- Ghaziuddin N, Kutcher SP, Knapp P, Bernet W, Arnold V, Beitchman J, Benson RS, Bukstein O, Kinlan J, McClellan J, Rue D, Shaw JA, Stock S, Kroeger Ptakowski K; Work Group on Quality Issues; AACAP. Practice parameter for use of electroconvulsive therapy with adolescents. *J Am Acad Child Adolesc Psychiatry* 2004; 43:1521-1539. **[CrossRef]**
- Friedman RA, Leon AC. Expanding the black box - depression, antidepressants, and the risk of suicide. *N Engl J Med* 2007; 356:2343-2346. **[CrossRef]**
- Newman TB. A black-box warning for antidepressants in children? *N Engl J Med* 2004; 351:1595-1598. **[CrossRef]**
- Lambert M, Conus P, Eide P, Mass R, Karow A, Moritz S, Golks D, Naber D. Impact of present and past antipsychotic side effects on attitude toward typical antipsychotic treatment and adherence. *Eur Psychiatry* 2004; 19:415-422. **[CrossRef]**