



СРПСКИ АРХИВ
ЗА ЦЕЛОКУПНО ЛЕКАРСТВО
SERBIAN ARCHIVES
OF MEDICINE

Address: 1 Kraljice Natalije Street, Belgrade 11000, Serbia

+381 11 4092 776, Fax: +381 11 3348 653

E-mail: office@srpskiarhiv.rs, Web address: www.srpskiarhiv.rs

Paper Accepted*

ISSN Online 2406-0895

Case Report / Приказ болесника

Zagorka Gojković¹, Zvezdana Stojanović^{1,2}, Jasmina Maksić³, Nevena Jovanović²,
Nikolina Petrović^{2,*}

Electroconvulsive therapy in a young adult patient with treatment-resistant depression and electroencephalogram epileptiform activity

Електроконвулзивна терапија код младог одраслог болесника са терапорезистентном депресијом и електроенцефалографском епилептиформном активношћу

¹Military Medical Academy, Clinic of Psychiatry, Belgrade, Serbia;

²University of Defense, Military Medical Academy, Faculty of Medicine, Belgrade, Serbia;

³Military Medical Academy, Clinic of Neurology Belgrade, Serbia

Received: March 4, 2025

Revised: April 19, 2026

Accepted: April 19, 2026

Online First: May 13, 2026

DOI: <https://doi.org/10.2298/SARH250304035G>

* **Accepted papers** are articles in press that have gone through due peer review process and have been accepted for publication by the Editorial Board of the *Serbian Archives of Medicine*. They have not yet been copy-edited and/or formatted in the publication house style, and the text may be changed before the final publication.

Although accepted papers do not yet have all the accompanying bibliographic details available, they can already be cited using the year of online publication and the DOI, as follows: the author's last name and initial of the first name, article title, journal title, online first publication month and year, and the DOI; e.g.: Petrović P, Jovanović J. The title of the article. *Srp Arh Celok Lek*. Online First, February 2017.

When the final article is assigned to volumes/issues of the journal, the Article in Press version will be removed and the final version will appear in the associated published volumes/issues of the journal. The date the article was made available online first will be carried over.

*Correspondence to:

Nikolina PETROVIĆ

University of Defense, Faculty of Medicine, Military Medical Academy, Crnotravska 17, 11000 Belgrade, Serbia

Email: nvojnovic007@gmail.com

Electroconvulsive therapy in a young adult patient with treatment-resistant depression and electroencephalogram epileptiform activity

Електроконвулзивна терапија код младог одраслог болесника са терапорезистентном депресијом и електроенцефалографском епилептиформном активношћу

SUMMARY

Introduction Electroconvulsive therapy (ECT) causes a seizure which is different from a convulsion in epilepsy. Despite this, ECT remains a challenge in patients with comorbid epileptiform activity. Our aim was to indicate the importance and safety of the ECT in young adult with treatment-resistant depression (TRD) and EEG (electroencephalogram) epileptiform activity.

Case report A 21-year-old female patient scheduled for ECT due to TRD and suicidal behavior (SB). During the preparation for ECT, EEG epileptiform activity were noticed, and upon the anticonvulsant medication administration, the patient received the acute ECT, combined with quetiapine XR 600 mg/d, duloxetine 60 mg/d and pregabalin 450 mg/d, since the disease was life threatening. We noted a significant increase in the stimulus dose, i.e. elevation in the convulsive threshold during ECT. The clinical outcome was without adverse events and with a reduction of the depression severity. The continuation of the maintenance ECT, psychopharmacotherapy and psychotherapy was planned.

Conclusion ECT is the most effective therapy for TRD, while the presence of EEG epileptiform activity is not a contraindication for ECT, with the advantage of the ECT Thymatron IV device, as a 4-channel digital EEG machine, allowing us to record and analyze EEG.

Keywords: depression; ECT; EEG; young adults; suicidal behavior

САЖЕТАК

Увод Електроконвулзивна терапија (ЕКТ) изазива напад који се разликује од конвулзија код епилепсије. Упркос томе, ЕКТ остаје изазов код болесника са коморбидном епилептиформном активношћу. Наш циљ је био да укажемо на значај и безбедност ЕКТ у лечењу терапорезистентне депресије (ТРД) код младе одрасле особе којој су утврђене електроенцефалографске (ЕЕГ) абнормалности са епилептиформном активношћу.

Приказ болесника Болесница, стара 21 годину, која је због ТРД и суицидалног понашања (СП) планирана за ЕКТ. Током припреме за ЕКТ су установљене ЕЕГ абнормалности са епилептиформном активношћу, а пацијенткиња је након укључивања антиконвулзива примила акутни ЕКТ, комбиновано са кветиапином *XR 600 mg/d*, дулоксетином *60 mg/d* и прегабалином *450 mg/d*, јер је болест била опасна по живот. Приметили смо значајно повећање дозе стимулус, односно пораст конвулзивног прага током ЕКТ. Клинички исход је био без нежељених догађаја, уз редукцију тежине депресије. Планирано је да се настави лечење ЕКТ одржавања, психофармакотерапијом и психотерапијом.

Закључак ЕКТ је најефикаснија терапија за ТРД, а присуство ЕЕГ абнормалности нису контраиндикација за ЕКТ, уз додатну предност ЕКТ *Thymatron IV* (*Somatics Inc.*, Венеција, ФЛ, САД) апарата који је 4-канална дигитална ЕЕГ машине, која нам омогућава да снимимо и анализирамо ЕЕГ.

Кључне речи: депресија; ЕКТ; ЕЕГ; млади одрасли; суицидално понашање

INTRODUCTION

In the era of technological advancement, depression is one of the leading mental health problems among young adults. The prevalence of treatment-resistant depression (TRD) in young adults is as high as 40% and is associated with a higher risk of suicide [1, 2]. Young

adults with depression often use deliberate self-harm which is an important risk factor for suicide attempts [3].

ECT (electroconvulsive therapy) reduces the severity of depression faster and more significantly vs. antidepressants [4, 5]. In adolescents younger than 18 years with depression and suicidal behavior (SB), the effectiveness of ECT is increasing with age, and with more than 8 ECT sessions in a series (acute ECT) [6, 7].

It is important to keep in mind that ECT causes a seizure which is different from a convulsion in epilepsy, namely there is no abnormal connection and therefore does not lead to the appearance of spontaneous epileptic activity. Despite this, ECT remains a challenge in patients with epilepsy comorbid epileptiform activity [8, 9].

Our aim was to indicate the importance and safety of ECT in a young adult patient with TRD and EEG abnormal waveforms.

CASE REPORT

A 21-year-old female patient has been treated for depression since the age of 18, and the diagnosis of recurrent depressive disorder was established based on the ICD-10 (International Classification of Diseases, Tenth Revision) criteria at the age of 19. The course of treatment is characterized by frequent hospitalizations (six in total) due to maintenance of depression and SB (deliberate self-harm using a razor blade – approximately 50 new and 100 old scars in the area of breasts, abdomen, upper legs, forearms; and deliberate self-poisoning using medications and alcohol) (Figure 1).

She has mostly been prescribed two or more psychiatric medications: antidepressants (duloxetine 30–60 mg/d, fluoxetine 20–40 mg/d, sertraline 50 mg/d, escitalopram 10–20 mg/d), antipsychotics (olanzapine 5–20 mg/d, cariprazine 3 mg/d, aripiprazole 15 mg/d, chlorpromazine 150 mg/d, clozapine - missing data, quetiapine 50–600 mg/d), mood stabilizers (lithium carbonate 600–1200 mg/d, valproate 500 mg/d), benzodiazepines and non-benzodiazepines (clonazepam 1 mg/d, pregabalin - missing data), psychostimulants (methylphenidate 18–36 mg/d).

Due to TRD and high suicide risk, the patient was referred to the Clinic of psychiatry MMA for acute ECT. She was admitted with the following therapy: duloxetine 60 mg/d, pregabalin 450 mg/d, and quetiapine XR 600 mg/d, and this therapy was continuously maintained during acute ECT. Among other medications, she had desmopressin 120 mg/d, prescribed by a urologist for nocturnal enuresis. Due to recent deliberate self-harm, she was surgically examined and antibiotic therapy (trimethoprim sulfamethoxazole) was prescribed for seven days. With a body mass index (BMI) of 33.1 kg/m², a hygienic-dietary regimen was implemented in accordance with the dietician instructions.

It should be noted that she is unemployed, childless and that she lives with her sister. At the age of two, she was observed at the Institute for Maternal and Child Health Care in Belgrade, due to a head injury as the result of the fall. An EEG was performed - normal findings. A computed tomography (CT) of the head showed discrete brain edema. During growing up, nocturnal enuresis, nail biting and thumb sucking were present. The patient's mother informed us that, during the school period, patient had episodes of staring at one spot or at another student, for couple of seconds during which she seemed "absent". Since she was 12 years old, due to nocturnal enuresis classified as primary enuresis, the urologist prescribed her desmopressin at a dose of 120 mg/d. She was subjected to verbal abuse and social

isolation by her peers because of her physical appearance. Her mother punished her physically, with frequent verbal insults, while her father was absent and uninterested. She does not abuse psychoactive substances and alcohol. Heredity is present: father with alcohol use disorder, brother being treated for bipolar disorder (BD), sister for anxiety-depressive disorder, two uncles committed suicide.

Preparation for ECT, description of ECT and ECT treatment

In accordance with the guidelines for ECT preparation [9] the following diagnostic procedures were performed: blood tests (complete blood count, metabolic panel, thyroid hormones) - test results were within the reference ranges; chest X-ray, electrocardiography, fundoscopy - unremarkable; Magnetic Resonance Imaging (MRI) of the brain – normal finding; EEG (see text below). She was examined by a cardiologist and an anesthesiologist prior to induction into general anesthesia (GA).

The EEG showed a generalized SWC (spike-wave complex) like activity with an anterior maximum for about 1 s during hyperventilation and spontaneously at the end of the recording, i.e., there are interictal borderline to specifically generalized epileptiform discharges.

The EEG after sleep deprivation indicated, that, during wakefulness and sleep, SWC series of 3 Hz lasting up to 5–6 s became more frequent with a maximum over the frontal regions and, more dominantly on the right side. Due to recorded EEG abnormalities, nocturnal bedwetting, and data about episodes of staring, the neurologist introduced anticonvulsant medication lamotrigine, with a gradual increase in the dose to 150 mg/d, desmopressin was removed from the therapy.

The following clinical scales were performed: Hamilton Depression Rating Scale 21 (HAM-D 21) score 32; Childhood Trauma Questionnaire (CTQ) total score 62, emotional abuse score 21, physical abuse was 18; Mini-Mental State Examination (MMSE) score 30.

The patient signed an informed consent for ECT and for GA. For ECT we utilized Thymatron System IV device (Somatics, INC), and brief pulses (0.5 ms), the electrodes were placed bi-temporal. Setting the stimulus dose was based on the “half-age” method [10]. Acute ECT was applied three times a week in GA. The patient received a total of 20 ECT sessions in acute ECT, with a recorded increase from the initial to final dose of the stimulus, 50.4 mC vs. 200.1 mC, respectively (Figure 4).

A more significant reduction in depressive symptomatology was recorded after 5th ECT session (HAM-D 21 score was 21), however therapy continued until 20th ECT session, i.e., until HAM-D 21 score was 11. There were no changes in cognitive functioning.

The combined administration of ECT and psychopharmacotherapy (quetiapine XR 600 mg/d, duloxetine 60 mg/d and pregabalin 450 mg/d), along with an anticonvulsant medicine, resulted in the termination of nocturnal enuresis and reduction in the severity of depression and SB. BMI at the end of hospital treatment was 29.4 kg/m², i.e., she lost 10 kg.

Ethics: The patient gave her informed consent and the study was approved by the Ethics Committee of the Military Medical Academy (MMA) (Decision No. 19/2025).

DISCUSSION

The use of ECT in psychiatric patients with comorbid epilepsy may be considered a serious clinical challenge [9, 11, 12]. Accordingly, a study from 2006. reported that ECT is safe to

use in patients with epilepsy and that no dose adjustments of anticonvulsant medications are necessary [13], and ECT can also be used for the treatment of refractory epilepsy and status epilepticus [14, 15]. There are studies stating the contradictory results, that after ECT there was a tendency to epilepsy [16, 17]. However, our experience so far, as in other researches, did not establish this [14, 15, 18]. The main disadvantage of the “half-age” method which we used is that it is not possible to know the individual seizure threshold, i.e., whether the stimulus dose is sufficiently above the convulsive threshold to ensure the effectiveness of ECT. In our patient, a significant increase in the stimulus dose, i.e., a raise in the convulsive threshold is evident.

Despite the fact that ECT shows a response rate of 50 % to 90 % in young adults with TRD with suicidal ideation or psychotic symptoms, its use in practice remains low [2, 19]. Our patient was diagnosed with recurrent depression at the age of 19, and was referred for ECT at the age of 21. Explanations for this discrepancy can be partly explained by the small number of ECT centers in Serbia. Namely, ECT was only applied at the MMA Clinic of Psychiatry in Belgrade, until 2016, when ECT center at the Clinic of Psychiatry, Clinical Center Kragujevac was open [18]. Another possible explanation is a common belief about the association of ECT with cognitive impairments. By using reliable methods of cognitive testing (computerized neuropsychological tests), it has been shown that the deficit of cognitive functions improves during the treatment of depression with ECT [20-22], therefore, the effect of ECT is the same as in the adult population [2].

Due to the severity of the clinical presentation, it was not possible to discontinue the use of psychopharmacotherapy in our patient, which is in accordance with the results of the positive effects of ECT in combination with antidepressants and antipsychotics, while lamotrigine of all mood stabilizers raises the seizure threshold the least [23].

This presentation also aims to emphasize the importance of EEG in psychiatry, namely, our patient had an EEG performed immediately after a traumatic brain injury (TBI) and as part of preparation for ECT. After TBI, EEG epileptiform activities were determined in 16 % of patients [24], however EEG changes are not uniform, that is, they depend on the severity and location of TBI and can gradually develop over time (if serial recording is performed), which was not done in our patient [25]. In patients with BD, it has been shown that abnormal EEG with epileptiform activity is possible predictor of lithium resistance [26]. Also, EEG is important for treating TRD, considering that treatment-resistance can occur in patients with epilepsy, that is, EEG can contribute to more effective treatment strategies for TRD, which was the case in our patient [27, 28]. The development of artificial intelligence indicates that deep learning methods based on EEG help in the early detection of patients with depression vs. healthy subject, with accuracy from 90 % to even 99.24 % [29].

In conclusion, the increase in mental health problems in young adults in recent decades, especially depression, requires comprehensible guidelines for the TRD therapy in this population. When choosing a treatment, one should always consider the risk and benefit of the proposed treatment, and the fact is that ECT is still the most effective therapy for TRD. ECT, in addition to being effective, is also a safe therapy for TRD, and the presence of EEG abnormalities is not a contraindication for ECT, with the advantage of the ECT Thymatron System IV device, as a 4-channel digital EEG machine, allowing us to record and analyze EEG.

Conflict of interest: None declared.

REFERENCES

1. Thapar A, Eyre O, Patel V, Brent D. Depression in young people. *Lancet*. 2022 Aug 20;400(10352):617-631. [DOI: 10.1016/S0140-6736(22)01012-1] [PMID: 35940184]
2. Menculini G, Cinesi G, Scopetta F, Cardelli M, Caramanico G, Balducci PM, et al. Major challenges in youth psychopathology: treatment-resistant depression. A narrative review. *Front Psychiatry*. 2024 Jul 11;15:1417977. [DOI: 10.3389/fpsy.2024.1417977] [PMID: 39056019]
3. Sinha D, Srivastava S, Mishra PS, Kumar P. Predictors of deliberate self-harm among adolescents: Answers from a cross-sectional study on India. *BMC Psychol*. 2021 Dec 18;9(1):197. [DOI: 10.1186/s40359-021-00705-4] [PMID: 34922635]
4. Goldberg JF. Electroconvulsive therapy: still the gold standard for highly treatment-resistant mood disorders. *CNS Spectr*. 2022 Oct;27(5):525-526. [DOI: 10.1017/S1092852921000110] [PMID: 33517939]
5. Nygren A, Reutfors J, Brandt L, Bodén R, Nordenskjöld A, Tiger M. Response to electroconvulsive therapy in treatment-resistant depression: nationwide observational follow-up study. *BJPsych Open*. 2023 Feb 14;9(2):e35. [DOI: 10.1192/bjo.2023.5] [PMID: 36786152]
6. Ren H, Wang X, Zhang Z, Zhong X, Luo Q, Qiu H, et al. Electroconvulsive therapy for adolescents with severe depressive episode and suicidality: retrospective comparison between responders and non-responders. *Child Adolesc Psychiatry Ment Health*. 2024 Jan 20;18(1):13. [DOI: 10.1186/s13034-023-00701-z] [PMID: 38245725]
7. Zhang JY, Li J, Wang N, Xie XH, Zeng L. Hybrid electroconvulsive therapy in an adolescent with major depressive disorder: a case report. *Front Psychiatry*. 2025 Jan 17;15:1487983. [DOI: 10.3389/fpsy.2024.1487983.] [PMID: 39896996]
8. Takamiya A, Bouckaert F, Laroy M, Blommaert J, Radwan A, Khatoun A, et al. Biophysical mechanisms of electroconvulsive therapy-induced volume expansion in the medial temporal lobe: A longitudinal in vivo human imaging study. *Brain Stimul*. 2021 Jul-Aug;14(4):1038-1047. [DOI: 10.1016/j.brs.2021.06.011] [PMID: 34182182]
9. Gralawicz A, Święcicki Ł, Antosik-Wójcińska AZ, Konopko M, Kurkowska-Jastrzębska I, Sienkiewicz-Jarosz H, et al. ECT in an Adolescent With Schizophrenia and Seizures: Case Report. *Front Psychiatry*. 2021 Nov 12;12:646466. [DOI: 10.3389/fpsy.2021.646466] [PMID: 34867497]
10. American Psychiatric Association Task Force on Electroconvulsive Therapy: The Practice of Electroconvulsive Therapy: Recommendations for Treatment, Training, and Privileging. Washington, DC, American Psychiatric Association. 2001.
11. Schachter SC. Seizure Disorders. In: Papadakis MA, McPhee SJ, Rabow MW, Miller NH, editors. *Current Medical Diagnosis & Treatment 2026*. New York, NY: McGraw Hill; 2026.
12. Alkhotani A, Abualela H. Psychiatric comorbidities in patients with drug-resistant epilepsy. *Egypt J Neurol Psychiatry Neurosurg*. 2026;62(1):26. [DOI: 10.1186/s41983-026-01086-4]
13. Lunde ME, Lee EK, Rasmussen KG. Electroconvulsive therapy in patients with epilepsy. *Epilepsy Behav*. 2006;9(2):355-9. [DOI: 10.1016/j.yebeh.2006.06.013] [PMID: 16876485]
14. Tan HJ, Tee TY, Husin M, Khoo CS, Woon LS. A case series of super-refractory status epilepticus successfully treated with electroconvulsive therapy. *Epileptic Disord*. 2020;22(6):828-833. [DOI: 10.1684/epd.2020.1233] [PMID: 33337333]
15. Ong MJY, Lee VLL, Teo SL, Tan HJ, Trinko E, Khoo CS. Electroconvulsive Therapy in Refractory and Super-Refractory Status Epilepticus in Adults: A Scoping Review. *Neurocrit Care*. 2024 Oct;41(2):681-690. [DOI: 10.1007/s12028-024-02003-4] [PMID: 38769254]
16. Rasmussen KG, Lunde ME. Patients who develop epilepsy during extended treatment with electroconvulsive therapy. *Seizure*. 2007;16(3):266-70. [DOI: 10.1016/j.seizure.2006.12.002] [PMID: 17185006]
17. Bryson A, Gardner H, Wilson I, Rolfe T, Archer J. Temporal lobe epilepsy following maintenance electroconvulsive therapy-Electrical kindling in the human brain? *Epilepsia*. 2016;57(11):e216-e220. [DOI: 10.1111/epi.13565] [PMID: 27666327]
18. Stojanović Z, Simić K, Tepšić Ostojić V, Gojković Z, Petković-Ćurčin A. Electroconvulsive therapy in the Fourth Industrial Revolution (Review). *Biomed Rep*. 2024 Jul 8;21(3):129. [DOI: 10.3892/br.2024.1817] [PMID: 39070111]
19. Chen K, Ren L, Yang Y, Liang K, Zhou Y, Lv F, Du L. Effect of electroconvulsive therapy on depression among adolescents and its relationship with family function. *Medicine (Baltimore)*. 2025 Feb 14;104(7):e41607. [DOI: 10.1097/MD.00000000000041607] [PMID: 39960914]
20. Rummel L, Göke K, Philipsen A, Hurlmann R, Kiebs M. Role of stimulus dose on neuropsychological functioning after electroconvulsive therapy in patients with major depressive disorder. *Front Psychiatry*. 2024 Sep 26;15:1443270. [DOI: 10.3389/fpsy.2024.1443270] [PMID: 39398962]

21. Maric NP, Stojanovic Z, Andric S, Soldatovic I, Dolic M, Spiric Z. The acute and medium-term effects of treatment with electroconvulsive therapy on memory in patients with major depressive disorder. *Psychol Med.* 2016;46(4):797-806. [DOI: 10.1017/S0033291715002287] [PMID: 26493090]
22. Stojanovic Z, Andric S, Soldatovic I, Dolic M, Spiric Z, Maric NP. Executive function in treatment-resistant depression before and after electroconvulsive therapy. *World J Biol Psychiatry.* 2017;18(8):624-632. [DOI: 10.3109/15622975.2016.1174299] [PMID: 27072874]
23. Zolezzi M. Medication management during electroconvulsant therapy. *Neuropsychiatr Dis Treat.* 2016 Apr 19;12:931-9. [DOI: 10.2147/NDT.S100908] [PMID: 27143894]
24. Ianof JN, Anghinah R. Traumatic brain injury: An EEG point of view. *Dement Neuropsychol.* 2017;11(1):3-5. [DOI: 10.1590/1980-57642016dn11-010002] [PMID: 29213487]
25. Kadri A, Apriani N. Electroencephalography Findings in Traumatic Brain Injury. *The Open Neurology Journal.* 2022; 16: e1874205X2206100. [DOI: 10.2174/1874205X-v16-e2206100]
26. Ikeda A, Kato N, Kato T. Possible relationship between electroencephalogram finding and lithium response in bipolar disorder. *Prog Neuropsychopharmacol Biol Psychiatry.* 2002;26(5):903-7. [DOI: 10.1016/s0278-5846(02)00203-8] [PMID: 12369264]
27. Shin HR, Kim M, Park KI. Electroconvulsive therapy and seizure: a double-edged sword? *Encephalitis.* 2023 Oct;3(4):103-108. [DOI: 10.47936/encephalitis.2023.00059] [PMID: 37621189]
28. Scott AJ, Sharpe L, Hunt C, Gandy M. Anxiety and depressive disorders in people with epilepsy: A meta-analysis. *Epilepsia.* 2017;58(6):973-982. [DOI: 10.1111/epi.13769] [PMID: 28470748]
29. Saeedi A, Saeedi M, Maghsoudi A, Shalhaf A. Major depressive disorder diagnosis based on effective connectivity in EEG signals: a convolutional neural network and long short-term memory approach. *Cogn Neurodyn.* 2021 Apr;15(2):239-252. [DOI: 10.1007/s11571-020-09619-0] [PMID: 33854642]



Figure 1. Deliberate self-harm in our patient with treatment-resistant depression

Paper accepted

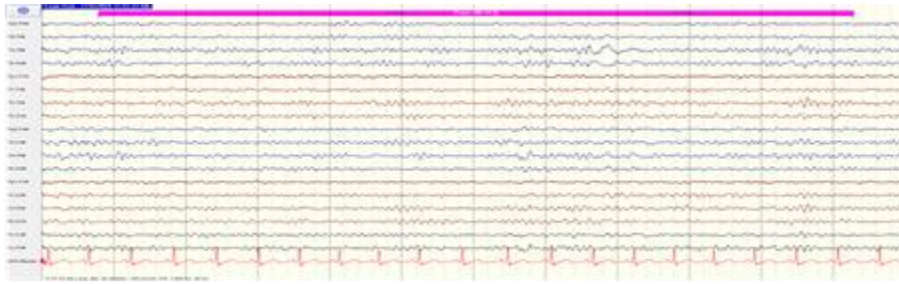


Figure 2. Abnormal electroencephalogram with epileptiform activity in our patient with treatment-resistant depression

Paper accepted

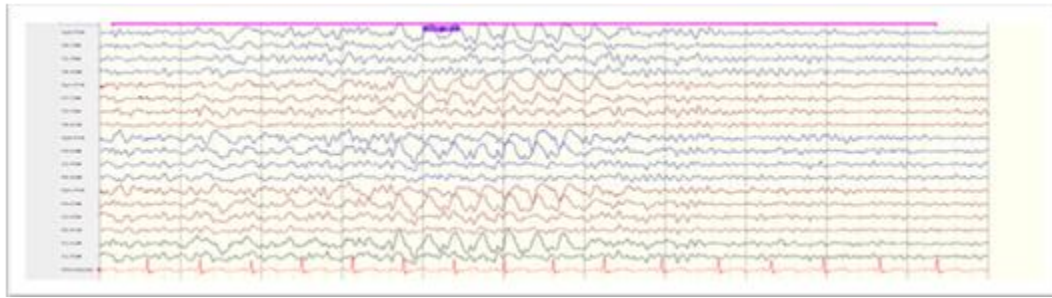


Figure 3. Abnormal electroencephalogram with epileptiform activity after sleep deprivation in our patient with treatment-resistant depression

Paper accepted

ECT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Treatment No.																					
Days since ECT initiation	0	2	5	7	9	12	14	16	19	21	23	26	28	30	36	39	41	43	46	48	
CD (mC)	50.4	50.6	75.0	75.1	74.8	100.2	99.1	150.4	151.0	175.7	200.9	200.2	199.5	199.5	199.6	199.3	200.1	201.2	200.8	201.1	
SD (s)	5.6	5.6	4.2	4.2	4.2	5.6	5.6	5.6	5.6	6.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	
Frequency (Hz)	10	10	20	20	20	20	20	30	30	30	30	30	30	30	30	30	30	30	30	30	
EMG	14	14	13	19	15	13	9	12	15	17	13	13	12	10	12	12	10	12	13	13	
EEG	/	12	31	22	/	22	9	19	45	24	23	15	17	18	17	14	12	15	14	14	
PSI (%)	/	19.4	92.8	64.9	/	<10	27.1	82.2	41.6	90.7	93.2	87.4	40.1	96.4	81	95.4	96.6	78.9	96.2	95.8	

CD - Charge Delivered ; SD - Stimulus Duration; EMG – Electromyography; EEG - Electroencephalography; PSI – Postictal Suppression Index;

Figure 4. Acute electroconvulsive therapy in our patient with treatment-resistant depression and abnormal electroencephalogram with epileptiform activity