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RESEARCH ARTICLE

Evaluation of adverse effects during the initial electroconvulsive therapy (ECT) session: A retrospective study from a specialist ECT unit in a mental health hospital

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ABSTRACT

Objective: This study aims to evaluate the adverse effects observed during the first electroconvulsive therapy (ECT) session at the Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery.

Method: This retrospective study included 1,449 patients who received ECT between January 1, 2015 and December 31, 2017. Data on sociodemographic characteristics, diagnoses, ECT administration details, and adverse effects were collected from patient records. Before each ECT session, patients or their legal representatives provided written informed consent. The study excluded patients with cardiovascular, hepatic, renal, or neuromuscular diseases or unstable medical conditions.

Results: During the first ECT session, some patients experienced specific adverse effects. Prolonged seizures occurred in 7.8% of patients, while inadequate seizures were observed in 12.4%. Post-anesthesia recovery issues were reported in 1.0% of patients. Additional minor complications included confusion (0.2%), agitation (0.5%), headache (0.1%), bradycardia (0.7%), and hypersalivation (1.0%). The absence of a seizure (5.4%) or inadequate seizures (12.4%) were documented as undesirable effects. No severe complications were recorded in the patient population studied.

Conclusion: While some adverse effects are common, they are generally mild and transient, making ECT a safe and effective treatment option for severe psychiatric disorders. Our findings further highlight that the safety profile is consistent across sexes, reinforcing ECT's broad applicability. Careful monitoring and management of side effects are crucial to maintaining patient safety and optimizing treatment outcomes.

Keywords: Electroconvulsive therapy, adverse effects, complications, first session

INTRODUCTION

Electroconvulsive therapy (ECT) is a highly effective treatment modality that provides rapid improvement for patients with severe psychiatric disorders, such as depression, mania, schizophrenia, and schizoaffective disorder (1, 2). Common indications for ECT include the presence of catatonia, treatment resistance, and suicidality (3). The remission rate for ECT can be as high as 95% in cases of psychotic depression, the primary

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indication for this treatment, and approximately 55–84% in non-psychotic melancholic depression (4, 5). Despite its superior efficacy, ECT is often approached with caution and is typically indicated when other treatment methods are ineffective or contraindicated, the symptoms are acute and severe, and a good response to ECT is expected (6, 7).

During the first session of ECT, patients generally report mild and transient side effects, such as dry mouth, nausea, headache, and muscle pain (8, 9). These side effects are usually mild and self-limiting (1). For instance, post-ECT headache occurs in 26% to 85% of patients and typically peaks within two hours of the treatment, subsiding within 24 hours (8, 10). Nausea can be related to anesthesia or headache and can be managed with standard antiemetics (1, 11). Generalized myalgia, resulting from muscle fasciculations due to depolarizing muscle relaxants or the convulsion itself, is also common but generally decreases in severity after the first session (1, 12).

Neurological complications are significant concerns during the first session of ECT. Patients may experience transient postictal confusion and agitation (13, 14). In rare cases, prolonged seizures (lasting more than 120 seconds) and tardive seizures can occur, which are usually managed with intravenous anesthesia or benzodiazepines (1). Additionally, ECT's cognitive side effects are a crucial consideration. These cognitive effects, often manifesting as anterograde and retrograde amnesia, generally resolve within a few weeks after treatment ends (4, 15). However, some patients may experience long-term memory loss and other cognitive dysfunctions (4). Acute cognitive adverse effects (CogAEs) occur immediately after ECT and are transient, usually resolving within an hour, whereas subacute effects, including amnesia, may persist for weeks to months (1). Chronic cognitive effects, particularly retrograde amnesia, can last for months or longer, and the extent of permanence is debated (4, 5).

Analyzing patient data from ECT sessions is essential for identifying the risks associated with this treatment and for developing strategies to mitigate these risks. The objective of this retrospective study was to evaluate the adverse effects during the first ECT session of patients treated at an official ECT training center at the Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery. These findings are expected to enhance the understanding of the overall effectiveness and safety of ECT.

METHODS

Study Design

This retrospective, cross-sectional study was conducted at Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery, a leading neuropsychiatry institution in Türkiye, serving a population of approximately 26 million. The hospital handles approximately 315,000 outpatient visits and 12,500 inpatient admissions annually. Patients requiring ECT are referred to the Bakirkoy Electroconvulsive Therapy Center, where 30–40 patients undergo modified ECT daily. The study included 1,449 patients who received ECT between January 1, 2015 and December 31, 2017.

Before each ECT session, patients or their legal representatives were thoroughly informed about the procedure, and written consent was obtained. In emergencies, ECT was administered with the written agreement of two psychiatrists. All medications that might interfere with ECT, such as sedatives, antipsychotics, and anticonvulsants, were discontinued before treatment. Inclusion criteria required that patients had received ECT during the specified date range. All patient records from this period were thoroughly reviewed, and no files were excluded based on the specifics of the ECT procedure included in the study. Repeated ECT sessions for the same patient were not counted in the total number of patients. Additionally, the study did not distinguish between patients who had previously undergone ECT and those receiving it for the first time. Patients with significant hepatic or renal impairment, neuromuscular disorders, or other unstable medical conditions were excluded from the study. However, patients with medically controlled conditions such as hypertension, were included. Records of 1,449 patients meeting these criteria were analyzed for relevant data.

This cross-sectional study was approved by the medical ethics committee of the University of Health Sciences, Istanbul Physical Therapy and Rehabilitation Training Research Hospital (protocol number: 2020-31).

Assessment Protocol

Patients underwent thorough clinical and psychiatric evaluations following ECT to identify side effects as per institutional protocols. These evaluations were conducted by two expert physicians: an anesthesia specialist and a psychiatry specialist. The anesthesia specialist focused on monitoring and assessing any medical side effects related to the anesthesia and

the overall procedure, while the psychiatry specialist evaluated psychiatric and cognitive effects post-ECT. Data collected from patient records included sociodemographic details, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) diagnoses, scale scores, medical evaluations, hospitalization duration, prior ECT history, and specific ECT administration details such as indications, stimulus parameters, seizure duration, and adverse events. Detailed records on diagnoses, total hospitalizations, and average hospital stay duration during the study period were also maintained.

Electroconvulsive Therapy Procedure

ECT procedures at the institution adhere to the American Psychiatric Association and the Royal College of Psychiatrists guidelines. Pre-ECT evaluations include physical examinations conducted by a physician and an anesthesiologist. After evaluations, the necessary forms are completed, and the patient is scheduled for the procedure, which is conducted after a 6-hour fasting period. Bitemporofrontal ECT is administered using a brief-pulse square-wave ECT device (Thymatron IV). Patient data such as weight, height, heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), and body temperature are recorded before ECT. Cardiovascular effects are monitored using a noninvasive digital monitor, and ventilation is maintained with a mask. A pulse oximeter is used to monitor oxygen saturation and pulse. ECT electrodes are placed bilaterally frontotemporally, with stimulus dosage adjusted by the "half-age method." If the seizure duration is less than 25 seconds, a higher intensity is used (16).

Anesthesia Management for Electroconvulsive Therapy

ECT sessions were performed under general anesthesia, primarily using propofol. Anesthesia was induced with 1.0 mg/kg propofol intravenously (IV) over 5 seconds, followed by either 0.5 mg/kg succinylcholine or 0.3 mg/kg rocuronium IV over 5 seconds, with a 10-ml saline bolus. In the succinylcholine group, the electrical stimulus was delivered via bifrontotemporal electrodes 90 seconds after administration. In the rocuronium group, suprathreshold electrical stimulation was given 60 seconds after propofol administration and 120 seconds after rocuronium administration. For patients receiving rocuronium, 100 mg sugammadex was infused with a 10-ml saline bolus immediately post-seizure. Electroencephalography (EEG) seizure duration was recorded, and motor seizure activity was timed. Patients were ventilated with 100% oxygen until spontaneous respiration resumed. HR, mean arterial pressure, oxygen saturation (SpO_2), electrocardiogram (ECG) changes, and respiratory rate were monitored throughout the procedure and recovery. Cardiovascular effects were measured during preparation and 15 minutes postictally. Patients were monitored until they could breathe adequately, open their eyes, and respond to verbal commands. Typically, patients returned to their clinic within an hour post-ECT. The Clinical Global Impression-Improvement (CGI-I) scale was used within a week after the ECT session to assess improvement, with scores of 1 and 2 considered improved, 3 partly improved, and 4 or greater not improved (17).

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences version 29. Descriptive statistics were used to summarize the data, including means and standard deviations for continuous variables, and frequencies and percentages for categorical variables. To compare continuous variables between groups, a Student's t-test was applied, while chi-square tests were used to analyze categorical variables. A p-value of less than 0.05 was considered statistically significant for all tests.

RESULTS

Table 1 presents the sociodemographic and clinical characteristics of 1,449 patients undergoing ECT. The mean±SD age was 34.69±11.07 years, with an average education level of 7.4±3.66 years, and a mean weight of 72.96±12.03 kg. The cohort comprised 66.8% males and 33.2% females. A majority were not married (71.3%), and a substantial portion reported smoking (62.1%) and substance use (18.2%), while alcohol use was less common (12.3%). Medical history was reported by 15.9% of the patients. According to the American Society of Anesthesiologists (ASA) classification, 30.5% were ASA I, 67.1% were ASA II, and 2.4% were ASA III. ECT was administered within 3 days of hospitalization for 83.4% of the patients.

Diagnoses included schizophrenia (34.0%), bipolar disorder with mania (25.7%), and major depressive disorder (17.8%), among others. ECT was primarily indicated due to the failure of pharmacotherapy (83.2%) and elevated suicide or homicide risk (11.6%). A history of ECT was reported by 35.5% of the patients, and 75.5% did not discontinue psychotropic

Table 1: Sociodemographic and clinical characteristics of patients using electroconvulsive therapy

Variables	Data (n=1449) Mean±SD, n (%)
Age	34.69±11.07
Education levels (years)	7.4±3.66
Weight (kg)	72.96±12.03
Sex	
Male	968 (66.8)
Female	481 (33.2)
Marital status	
Not married	1033 (71.3)
Married	416 (28.7)
Smoking (yes)	900 (62.1)
Alcohol use (yes)	178 (12.3)
Substance use (yes)	264 (18.2)
History of anesthesia (yes)	113 (7.8)
Medical history (yes)	231 (15.9)
ASA classification	
I	442 (30.5)
II	972 (67.1)
III	34 (2.3)
IV	0 (0)
V	1 (0.1)
ECT administered post-hospitalization	
Within 3 days	1209 (83.4)
After 3 days	240 (16.6)
Diagnosis	
Psychotic disorder, not otherwise specified	204 (14.1)
Schizophrenia	492 (34.0)
Mania (bipolar disorder)	372 (25.7)
Catatonia	35 (2.4)
Major depressive disorder	258 (17.8)
Other	88 (6.0)
Indications for ECT	
Unresponsive to other treatments (failure of pharmacotherapy)	1206 (83.2)
Failure of pharmacotherapy + elevated suicide/homicide risk, agitation	168 (11.6)
Failure of pharmacotherapy + catatonia	61 (4.2)
Poor oral intake	14 (1.0)
New indication during hospitalization	
Psychosis	31 (2.1)
Depression	1 (0.1)
Mania	216 (14.9)
Poor oral intake	39 (2.7)
History of ECT (yes)	515 (35.5)
Psychotropic medications discontinued before ECT	
Benzodiazepines	260 (17.9)
Anticonvulsants	51 (3.5)
Benzodiazepines and anticonvulsants	10 (0.7)
Chlorpromazine	5 (0.3)
Lithium	25 (1.7)
Clozapine	3 (0.2)
None	1094 (75.5)
Number of ECT sessions (lifetime)	7.56±2.96
Duration of hospitalization before First ECT (days) (min–max)	10.66±8.68 (0–65)

SD: Standard deviation; ECT: Electroconvulsive therapy; ASA: American Society of Anesthesiologists.

Table 2: Medical values associated with anesthesia procedure in pre- and post-electroconvulsive therapy

	Pre-electroconvulsive therapy Mean±SD/n (%)	Post-electroconvulsive therapy Mean±SD/n (%)
Systolic blood pressure (mm Hg)	125.10±16.26	132.40±19.73
Diastolic blood pressure (mm Hg)	75.27±10.81	81.70±14.01
Pulse rate (bpm)	83.15±15.06	87.57±16.63
Fever (°C)	36.49±0.31	36.71±0.30
Blood oxygen saturation (%)	96.98±1.72	97.79±1.40
Clinical global impression	–	2.47±0.70
Pseudocholinesterase values (U/mL)	8.51±2.26	
Anesthesia medications dose (mg)		
Propofol	60.67±11.93/1449 (100.00)	
Succinylcholine	34.41±8.20/1407 (97.10)	
Rocuronium	20.13±4.70/42 (2.89)	

SD: Standard deviation.

medications before ECT. The average number of lifetime ECT sessions was 7.56±2.96, and the average duration of hospitalization before the first ECT session was 10.66±8.68 days.

Table 2 presents the medical values associated with the anesthesia procedure pre-ECT and post-ECT. The mean systolic blood pressure increased from 125.10±16.26 mmHg pre-ECT to 132.40±19.73 mmHg post-ECT. Similarly, diastolic blood pressure rose from 75.27±10.81 mmHg pre-ECT to 81.70±14.01 mmHg post-ECT. The pulse rate also showed an increase, rising from 83.15±15.06 bpm pre-ECT to 87.57±16.63 bpm post-ECT. A slight rise in body temperature was observed, from 36.49±0.31°C pre-ECT to 36.71±0.30°C post-ECT. Additionally, blood oxygen saturation improved from 96.98±1.72% pre-ECT to 97.79±1.40% post-ECT. The mean post-ECT Clinical Global Impression-Improvement score was 2.47±0.70. The mean pseudocholinesterase levels were 8.51±2.26 U/mL. Propofol was used as the anesthesia induction agent in all patients (typical dose 1 mg/kg), with an average dosage of 60.67±11.93 mg. Succinylcholine was used as a muscle relaxant in 97.1% of patients, averaging 34.41±8.20 mg, while in 2.89% of patients, rocuronium was administered at 20.13±4.70 mg.

Table 3 summarizes the effects observed following the first session of ECT. In 87.8% of the sessions, no adverse effects were observed. Among the undesirable effects, 5.4% of the sessions had no seizure occurrence, and 12.4% experienced inadequate seizures (lasting less than 25 seconds). Adverse effects included prolonged seizures (lasting over 120 seconds) in 7.8% of the cases, as well as myoclonic/tonic contractions (0.0%), post-anesthesia recovery issues (1.0%), confusion (0.2%), agitation (0.5%), amnesia (0.1%), headache (0.1%), tachycardia (0.1%), bradycardia (0.7%), hypertension (0.1%), hypotension (0.1%), hypersalivation (1.0%), dental fracture or avulsion (0.1%), rash or flushing (0.3%), and hypoglycemia (0.1%).

Table 3: Descriptive data on adverse effects following electroconvulsive therapy

	First session n (%)
No adverse effect	1271 (87.8)
Undesirable effects	
No seizure	78 (5.4)
Inadequate seizure (<25 sec)	179 (12.4)
Adverse effects	
Prolonged seizure (>120 sec)	113 (7.8)
Myoclonic/tonic contraction	1 (0.0)
Post-anesthesia recovery	14 (1.0)
Confusion	3 (0.2)
Agitation	7 (0.5)
Amnesia	1 (0.1)
Headache	2 (0.1)
Tachycardia	2 (0.1)
Bradycardia	10 (0.7)
Hypertension	2 (0.1)
Hypotension	2 (0.1)
Hypersalivation	15 (1.0)
Dental fracture/dental avulsion	1 (0.1)
Rash/flushing	4 (0.3)
Hypoglycemia	1 (0.1)
Total	1449 (100.0)

Table 4: Comparison of sociodemographic and clinical characteristics by sex in patients undergoing electroconvulsive therapy

	Sex		t/χ^2	p
	Male (n=968) Mean±SD, n (%)	Female (n=481) Mean±SD, n (%)		
Age	32.6±10.26	38.9±11.43	-10.583	<**0.001**
Weight (kg)	73.32±11.67	72.23±12.71	1.584	0.103
ASA	1.78±0.45	1.59±0.585	6.316	<**0.001**
Presence of adverse effects (yes)	115 (11.9)	63 (13.1)	0.442	0.506
Smoking (yes)	710 (73.3)	190 (39.5)	156.419	<**0.001**
Alcohol use (yes)	157 (16.2)	21 (4.4)	41.987	<**0.001**
Substance use (yes)	248 (25.6)	16 (3.3)	107.108	<**0.001**
History of anesthesia (yes)	71 (7.3)	42 (8.7)	0.872	0.350
History of ECT (yes)	359 (37.1)	156 (32.4)	3.038	0.081
ECT administration within 3 days (yes)	820 (84.7)	389 (80.9)	3.424	0.064
Number of ECT sessions (lifetime)	7.66±3.25	7.37±2.27	1.784	0.075
Diagnosis			124.717	<**0.001**
Psychotic disorder, not otherwise specified	154 (15.9)[a]	50 (10.4)[b]		
Schizophrenia	378 (39.0)[a]	114 (23.7)[b]		
Mania (bipolar disorder)	191 (19.7)[a]	181 (37.6)[b]		
Catatonia	21 (2.2)[a]	14 (2.9)[a]		
Major depressive disorder	139 (14.4)[a]	119 (24.7)[b]		
Other	85 (6.1)[a]	3 (0.6)[b]		
Indications for ECT			31.380	<**0.001**
Unresponsive to other treatments (failure of pharmacotherapy)	771 (79.6)[a]	435 (90.4)[b]		
Failure of pharmacotherapy + elevated suicide/homicide risk, agitation	131 (13.5)[a]	37 (7.7)[b]		
Failure of pharmacotherapy + catatonia	56 (5.8)[a]	5 (1.0)[b]		
Poor oral intake	10 (1.0)[a]	4 (0.8)[a]		

SD: Standard deviation; t: Independent samples t-test; χ^2: Chi-square test; p<0.05 indicates statistical significance (bolded in the table). ECT: Electroconvulsive therapy; ASA: American Society of Anesthesiologists. Superscripts with different letters indicate a statistically significant difference.

Table 4 compares the sociodemographic and clinical characteristics of male and female patients undergoing ECT. Female patients were significantly older than male patients (38.9±11.43 years vs. 32.6±10.26 years, p<0.001), and male patients had higher ASA scores (p<0.001). While no significant difference was found regarding adverse effects, male patients had higher rates of smoking, alcohol use, and substance use (all p<0.001). Diagnostically, schizophrenia and psychotic disorder, not otherwise specified (NOS), were more common in males, whereas female patients had higher rates of mania and major depressive disorder (p<0.001). Additionally, female patients were more likely to undergo ECT due to treatment resistance, while male patients were more frequently treated for elevated suicide or homicide risk and catatonia (p<0.001).

DISCUSSION

In this study, adverse effects observed during the first session of electroconvulsive therapy at the Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery were examined in detail. This study stands out due to its large sample size of 1,449 patients, which is significantly larger than many previous studies and provides a more comprehensive overview of ECT-related adverse effects. Focusing on a single center with a high volume of ECT procedures ensures consistency in protocol application and reduces variability, enhancing the reliability and generalizability of the findings. One key finding is that 12.2% of patients experienced adverse effects, with prolonged seizures (lasting over 120 seconds) being the most common

at 7.8%. Importantly, no serious adverse events were observed. This study also demonstrated a similar safety profile for both male and female patients, with no significant differences in adverse effects between sexes. This finding aligns with the complication rates of 5–10% reported in the study by Moksnes and Ilner (18) and the 15.19% rate of mild adverse events reported by Hajak et al. (19). Additionally, in the study by Hajak et al. (19) the rate of serious events requiring medical intervention following 3,106 ECT sessions over three years was reported as 0.097%, supporting our finding of no serious complications requiring medical intervention.

This study confirms that electroconvulsive therapy shows a similar safety profile for both sexes, which aligns with previous studies that demonstrate no significant differences in adverse effects across sexes (20). However, there are notable sex differences in diagnoses and treatment indications. Men more frequently received ECT due to agitation or elevated suicide or homicide risk, likely linked to their higher rates of alcohol and substance use, factors often exacerbating psychiatric conditions (21). On the other hand, women were more often treated for mood disorders, including bipolar disorder and major depressive disorder, as seen in studies indicating higher prevalence rates of these disorders in females. These findings emphasize the importance of sex-tailored psychiatric care.

Our study included a total of 1,449 participants with a mean age of 34.69±11.07 years. In the literature, the mean ages reported in various studies span a wide spectrum, including 34.87±11.24 years and 70.6±4.34 years (19, 22). Regarding sex distribution, 66.8% of the patients were male and 33.2% were female, with male and female patients represented in different proportions across various studies (2, 6, 18, 19, 23). Additionally, in our study, the rates of smoking, unmarried status, and substance use were 62.1%, 71.3%, and 18.2%, respectively. These risk factors are common sociodemographic characteristics observed in patients undergoing ECT and are reported at similar rates in the literature (17). Furthermore, the high rate of unmarried patients may be associated with factors such as lack of social support and loneliness, which can complicate the treatment of psychiatric disorders.

When examining cardiovascular complications, we observed bradycardia (0.7%), tachycardia (0.1%), hypertension (0.1%), and hypotension (0.1%). These findings are consistent with the cardiovascular complication rates reported by Shah et al. (9). Additionally, Hajak et al. (19) reported similarly low rates of cardiovascular complications. The effect of anesthetic agents on these complications should be taken into account, as the use of propofol and succinylcholine may influence hemodynamic responses and increase the risk of cardiovascular complications (24, 25). In our study, serious complications such as hypertension and arrhythmias were not observed post-anesthesia, indicating the safety of the anesthesia protocols used.

Regarding seizure duration, 12.4% of the patients experienced insufficient seizure duration, and 7.8% had prolonged seizures. The literature documents various complications related to seizure duration. In a review by Andrade et al. (1), it is recommended that intravenous anesthesia or benzodiazepines be used to manage suboptimal seizure durations during ECT. Similarly, Canbek et al. (22) highlighted the importance of managing seizure duration. Myoclonic contractions, another observed complication during ECT, are typically short-lived and manageable with anesthesia (1). Seizure duration can be optimized by adjusting the current application during ECT or modifying the dosage of administered medications, allowing for patient-specific adjustments to be made in subsequent sessions.

Cognitive side effects of ECT were another significant aspect observed in our study. Some patients experienced temporary memory impairments. In a previous study by Fraser et al. (26), it was noted that cognitive impairments following ECT are generally temporary but may have longer-term effects in some patients. Similarly, Antosik-Wochsinka et al. (23) reported that cognitive side effects of ECT are usually temporary and do not cause long-term issues for the majority of patients. In our study, confusion (0.2%), agitation (0.5%), and amnesia (0.1%) were observed at low rates. These side effects are typically short-lived and resolved quickly after ECT.

Finally, rare adverse effects such as hypersalivation (1%), headache (0.1%), and hypoglycemia (0.1%) were observed in our study. These adverse effects are often related to anesthesia protocols or the ECT procedure itself (1). Headache is a common post-ECT side effect, typically mild and short-lived. Hypersalivation may result from the use of anesthetic agents or increased salivation during seizures. Hypoglycemia may occur due to increased energy expenditure and metabolic changes during ECT. Managing these conditions requires consideration of both pharmacological and non-pharmacological treatment options.

This study has several limitations. The absence of

neuromuscular monitoring restricted the evaluation of muscle relaxants and seizure quality. Similarly, the lack of bispectral index (BIS) monitoring for hypnotic agent titration prevented consistent control of anesthesia depth. The retrospective design also limited the ability to assess seizure duration variables, and incomplete data for some sessions further constrained the findings. Additionally, the cognitive adverse effects observed were primarily based on clinical judgment, as no specific assessment tool was used. This represents a limitation of the study, as a more objective evaluation of cognitive adverse effects would require standardized cognitive assessment scales. Moreover, the evaluation was conducted after the first session of ECT, which may limit the understanding of how these adverse effects could develop or change over subsequent sessions. This approach was taken to focus on the initial response to ECT; however, future studies should consider assessing multiple sessions to capture the full spectrum of potential adverse effects. The study also did not include a comparison of different anesthetic agents, as propofol was used as the standard hypnotic agent and succinylcholine as the preferred muscle relaxant. However, succinylcholine is occasionally difficult to obtain due to it being sourced internationally, and in cases where patients had pseudocholinesterase levels below 5,000 IU, rocuronium was used as an alternative for medical necessity. These factors precluded a thorough comparison of anesthetic agents. Furthermore, being conducted at a single center may limit the generalizability of the results due to varying protocols and patient populations. Future research should address these limitations with prospective, multicenter studies and comprehensive monitoring.

CONCLUSION

Our study at the Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery reveals that while 12.2% of patients experienced adverse effects during their first ECT session, most were mild and transient, with no serious complications observed. Furthermore, the comparable safety profile between male and female patients underscores the broad applicability of ECT across different demographic groups. The findings align with existing literature, emphasizing the importance of careful monitoring and management of side effects to ensure patient safety. These results support the continued use of ECT as a valuable treatment option, provided that thorough patient evaluation and adherence to established protocols are maintained.

Contribution Categories		Author Initials
Category 1	Concept/Design	C.O., H.G.
	Data acquisition	C.O.
	Data analysis/Interpretation	C.O., H.G.
Category 2	Drafting manuscript	C.O., H.G.
	Critical revision of manuscript	C.O.
Category 3	Final approval and accountability	C.O., H.G.
Other	Technical or material support	C.O.
	Supervision	C.O.

Ethical Approval: The Istanbul Physical Therapy and Rehabilitation Training and Research Hospital Ethics Committee granted approval for this study (date: 02.07.2024, number: 2024-31).

Conflict of Interest: The authors declare that they have no conflict of interest.

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