

Epilepsy, Suicidal Ideation and Their Complex Relationship: Apropos of A Clinical Case

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ABSTRACT

People with epilepsy are at an increased risk of suicide and suicidality (suicidal ideation or behavior), typically with a standardized mortality ratio between 3 and 5, making it a significant cause of premature death. Recent years have seen the recognition of suicidality as a potential complication of several drug groups, including antiepileptic drugs (AEDs). Managing cases of suicidality in patients without a psychiatric history, where the initiation of an AED is the only new factor, poses a particular challenge.

Aim: The authors report the case of a man with no psychiatric history who developed suicidal thoughts after starting eslicarbazepine for post-traumatic brain injury epileptic seizures.

Methods: The patient was monitored after starting eslicarbazepine, with regular psychiatric evaluations for mood, anxiety, and suicidal ideation. Despite suspected medication-induced suicidal thoughts, treatment continued, supplemented by anxiolytics and mood stabilizers. Collaboration with neurology ensured a comprehensive care approach.

Results: A decision was made to switch the antiepileptic to topiramate, in collaboration with the neurology team. Following this change, a significant improvement in the patient's mental health was observed, with a marked reduction in suicidal thoughts and stabilization of mood. The patient's anxiety levels also decreased, contributing to overall better clinical outcomes.

Conclusion: This case highlights the importance of careful monitoring for suicidality in patients receiving AEDs, even in the absence of psychiatric history. Prompt recognition and appropriate intervention, including potential medication adjustments and additional support for anxiety and mood stabilization, were crucial. Psychiatry-Neurology collaboration improved outcomes, integrating pharmacological, neurological and psychological factors.

Keywords

Epilepsy, Eslicarbazepine, Suicidal thoughts, Topiramate.

Introduction

Epilepsy is a neurological disorder characterized by recurrent seizures, affecting approximately 50 million people worldwide [1]. These seizures can vary in duration and severity and can manifest as either focal or generalized. Beyond the seizures, around 20% of epileptic patients face cognitive and psychological challenges that

significantly impact their quality of life [2-4]. Many individuals with epilepsy also experience mental health issues, including an increased risk of suicidal ideation. Research indicates that people with epilepsy are at a higher risk of developing suicidal thoughts or engaging in suicidal behaviors compared to the general population [5-9]. Although the relationship between epilepsy and suicidal ideation is complex and multifactorial, several contributing factors have been identified, particularly antiepileptic drugs (AEDs). Despite the increased risk of suicidal ideation and behavior as

adverse effects of AED treatment, this risk remains relatively low but not negligible [10,11]. A U.S. meta-analysis of clinical trials involving AEDs found that the risk of suicidal behavior or ideation was about twice that of patients receiving placebo. Specifically, the estimated incidence rate for suicidal behavior or ideation among patients taking AEDs was approximately 0.43%, compared to 0.22% for those taking a placebo. This corresponds to an increased risk of 0.21 percentage points, or roughly 1 additional case of suicidal ideation or behavior per 500 patients treated with AEDs. Despite this increased relative risk, the absolute risk remains low, with less than 1 in 200 patients experiencing suicidal thoughts or behavior due to AEDs [12,13]. Nonetheless, in people with epilepsy, the risk of suicidality associated with AEDs must be weighed against the risk of not treating the seizures. Discontinuing AEDs or refusing to start them for seizure control could pose a significantly greater risk and result in serious harm [2,4,8,11,14,15].

Methods and Objectives

The study employed a single-case design to investigate the interplay between epilepsy, antiepileptic drug usage, and suicidal ideation. A patient with epilepsy who developed suicidal thoughts following AED therapy was selected. Data collection encompassed a comprehensive review of medical history, psychiatric evaluations, neuropsychological testing, EEG and neuroimaging analyses, and semi-structured interviews with the patient and their family. Both qualitative and quantitative analytical methods were utilized to correlate clinical findings with existing literature, aiming to identify risk factors and inform effective management strategies. This study aims to draw attention to the diverse approaches to managing behavioral alterations in these patients through the presentation of a clinical case, considering factors such as the multiplicity of possible irritating brain foci, the diversification of neuronal functionality, and pharmacological iatrogenics.

Clinical Case

A 43-year-old man with a history of multiple unreported minor head injuries from football began neurological follow-up after presenting with partial-onset seizures and episodes that included absence seizures. Given symptoms indicative of posttraumatic epilepsy and the frequency of convulsive crises impacting his functionality, the patient was prescribed eslicarbazepine, titrated to 800 mg.

After four months on this medication, the patient was brought to the emergency department by his wife and referred to psychiatry due to suicidal ideation. The patient's medical history was significant only for posttraumatic epilepsy diagnosed four months prior. Eslicarbazepine 800 mg was the only medication he had been using. No previous documented psychiatric evaluations were found. His wife reported a change in behavior over the past four months, characterized by social isolation, anorexia, irritability, and frequent marital conflicts, culminating in daily arguments over the past month and affecting his work performance as a textile merchandiser. The day before, he had expressed suicidal thoughts to a coworker, who alerted his wife. In the emergency department, the patient exhibited laconic speech and deferred to his wife

for reporting events. A non-contrast computerized tomography (CT) scan of the head and neck performed a week earlier was unremarkable for acute fracture, intracranial hemorrhage, or edema; the electroencephalogram (EEG) demonstrated greater temporal slowing and sharp waves in the right temporal region. On mental status examination, the patient expressed suicidal ideation with a structured plan (intending to hang himself from a tree near his house with access to a rope), displayed affective flattening, and lacked emotional mobility. No psychotic symptoms were noted.

Given the clinical presentation, the patient was voluntarily admitted to the psychiatric service for evaluation and stabilization. The patient denied consuming illicit substances and alcohol, only mentioning smoking tobacco (about 10 cigarettes per day). Admission biochemical parameters, including complete blood count, ionogram, liver, kidney and thyroid function tests, and routine urine analysis, were unremarkable.

During psychiatric ward admission and prior to the introduction of psychopharmacology, a thorough evaluation with a detailed assessment over the past six months was conducted due to the absence of prior psychiatric or family history and no evidence of precipitating factors. This evaluation revealed that the onset of symptoms coincided with the introduction of the antiepileptic medication. At this stage, despite the suspicion of possible iatrogenicity from eslicarbazepine, the authors decided to maintain the medication at the 800 mg dosage. Collaboration with the neurology department was requested, and treatment with mirtazapine was initiated, titrated up to 30 mg. Additionally, diazepam 10 mg twice daily was prescribed to manage anxiety symptoms. On the third day of hospitalization, the patient still exhibited structured suicidal ideation, albeit with reduced underlying irritability and anxiety. At this juncture, he was assessed by the Neurology team, which supported the possibility of this being a side effect of eslicarbazepine. It was decided to switch the medication to topiramate, titrating up to 100 mg, with the rationale of its indication in this epileptic case and evidence of its low absolute risk. On the tenth day of hospitalization, with an improvement in mood and a reduction in the intensity of suicidal ideation, coupled with the patient expressing regret for his actions, and considering the supportive family environment and the patient's own willingness, he was discharged with an outpatient follow-up appointment scheduled with Psychiatry, being at this point medicated with mirtazapine 30 mg daily, diazepam 5 mg twice daily, and topiramate 100 mg daily.

The patient continued to undergo psychiatric assessments every two weeks for the two months following discharge, with continued positive progression, reduction in suicidal ideation, and a euthymic mood with affective resonance. During this period, the patient had already discontinued diazepam and remained on mirtazapine 30 mg and topiramate 100 mg. Given the favorable progression, psychiatric assessments were spaced out to one month, and the patient remained psychopathologically stable six months after discharge. After the ninth month of treatment, considering the stability and moderate weight gain (approximately 8%), it was decided to begin reducing the mirtazapine dose and suspending it in the eleventh month of treatment. At the last reassessment

appointment, eighteen months after hospitalization, the patient maintained psychopathological stability, being medicated only with topiramate 100 mg (maintaining follow-up in Neurology consultations, with stability of the epileptic condition).

Discussion

This clinical case underscores the heightened risk of suicidality in epilepsy patients, particularly following the initiation of AED. Despite the low absolute risk, the potential for AED-induced suicidal ideation necessitates vigilant monitoring and prompt intervention [16,17]. The successful management of the patient's behavioural changes through a multidisciplinary approach, incorporating pharmacological adjustments, psychiatric support, and close neurology collaboration, highlights the importance of a comprehensive treatment strategy [3,8,13]. Effective management requires careful consideration of the benefits and risks of AED therapy, and clinicians must remain alert to the signs of suicidal ideation, even in patients with no prior psychiatric history. By fostering close cooperation between psychiatry and neurology, healthcare providers can optimize outcomes, ensuring long-term stability and improved quality of life for epilepsy patients.

Conclusion

Individuals with epilepsy are more likely to develop suicidal thoughts or behaviours compared to the general population. Meta-analyses indicate that patients taking certain AEDs have an increase in the risk of suicidal behaviour or ideation compared to those receiving a placebo, although the absolute risk remains low [3,6,13,19]. In this regard, effective management of behavioural alterations in epilepsy patients requires a multidisciplinary approach, integrating pharmacological, neurological, and psychological factors. Close collaboration between psychiatry and neurology is essential for optimizing outcomes. Gradual medication adjustments and careful monitoring can lead to long-term stability and improved quality of life. The authors reinforce the need of clinicians to be vigilant for signs of suicidal ideation in patients treated with AEDs and consider potential iatrogenic causes.

Disclosure Statement

The authors declare no conflicts of interest related to this case report. Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. The patient provided informed consent for the publication of this case, and all identifying information has been anonymized to protect the patient's privacy. The authors did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors for this work.

Author Contributions

BS and JR contributed for the conception and design of the study; BS contributed for the acquisition and analysis of data; BS contributed for the drafting of the manuscript; BS, ZS and JR contributed for the revising the manuscript for important intellectual content and performing the literature review.

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