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### Seizure to Drug Induced Schizophrenia: A Rare Case of Keppra-Induced Psychosis

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# Seizure to Drug Induced Schizophrenia: A Rare Case of Keppra-Induced Psychosis

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## Background

Levetiracetam is a broad-spectrum antiseizure medication and is approved as adjunctive therapy to treat focal-onset seizures in children and adults with epilepsy. Levetiracetam has a wide margin of safety and patient-friendly pharmacokinetics that distinguish it from other currently available antiepileptic drugs.

Most common side effects are fatigue, somnolence, dizziness, and upper respiratory infection.

Neuropsychiatric symptoms are reported. Psychotic symptoms, paranoid ideation, hallucinations, and behavioral problems (including aggressive behavior, agitation, anger, anxiety, apathy, confusion, depersonalization, depression, emotional lability, hostility, dyskinesia, irritability, neurosis, and personality disorder) may occur in adult and pediatric patients.

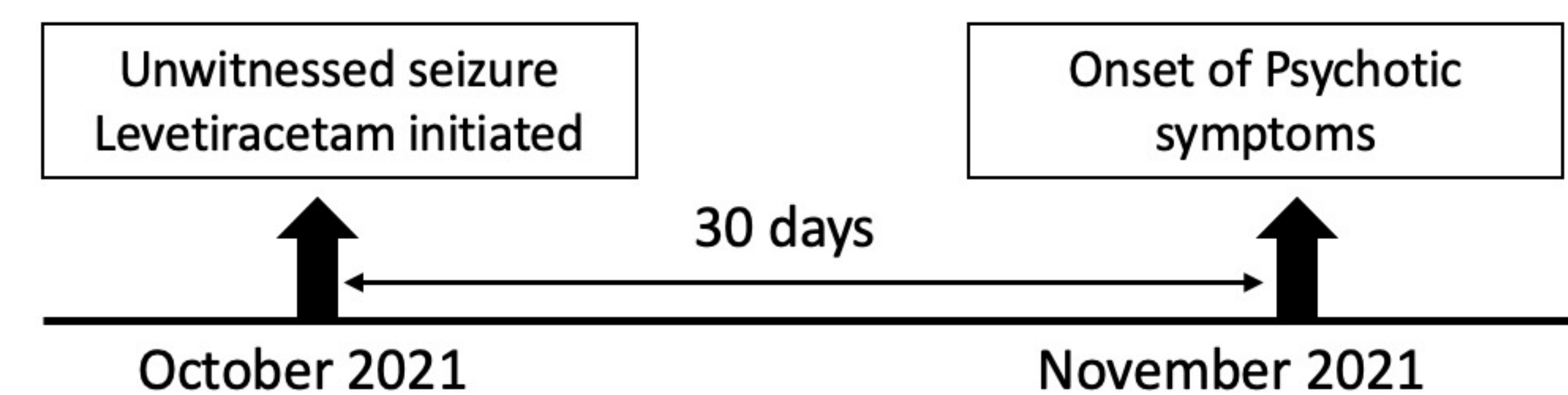
Amongst all adverse effects, the rate of psychosis is very low and ranges from less than 1% to 1.4%. A retrospective study showed that this rate is higher in older patients than in the younger population.

Although the current literature provides cases of levetiracetam-induced psychosis, the onset of psychotic symptoms is one-week post drug administration. Little to no data exists on the onset of psychosis post levetiracetam induction.

Management of psychosis can be done with dose reduction or discontinuation of the medication.

## Case Presentation

A 67-year-old male with no psychiatric history presented to the hospital for auditory hallucinations and paranoid ideations that a microchip was implanted in his ear and that he was being tracked by the government. He had heard voices telling him “he has brain cancer”. The auditory hallucinations and paranoid ideations started two weeks prior. The patient denied suicidal and homicidal ideations. Upon further investigation, the following hospital course and timeline were established.



The patient denied any recent changes to his medication except starting levetiracetam 750mg.

**Diagnosis:** Diagnostic workup included a complete blood cell count, metabolic panel, thyroid function tests, blood alcohol level, urine analysis, urine drug screen, computed tomography scan and magnetic resonance imaging of the head, electroencephalography; which were unremarkable. A prolonged video-EEG monitoring was normal with no paroxysmal activity, subclinical or clinical seizures. Based on history, physical examination, diagnostic tests, and the onset of symptoms post medication change, a diagnosis of levetiracetam-induced psychosis was made.

**Patient outcome:** Levetiracetam was switched to valproate for seizure prophylaxis. The patient’s psychosis was managed with haloperidol 2 mg once daily with an eventual increase to twice daily. The patient recovered over next 48 hours and was discharged from the hospital.

## Discussion

Few days after stopping levetiracetam, the psychotic symptoms resolved which further proved that the symptoms were drug induced. Levetiracetam induced psychosis is mainly reported in patients who have predisposing factors, such as history of psychiatric illness or epilepsy, but our patient lacked both. Additionally, most reported cases of Levetiracetam induced psychosis occurred within a week of starting the medication, but in our case, the onset of psychosis was delayed to a month after medication induction. Furthermore, the current literature notes that levetiracetam induced psychosis, although rare, is seen in patients on concurrent use of other anti-epileptic medications.

## Conclusion

Levetiracetam is found to be a safer option amongst all the available anti-epileptic medication. This profile may facilitate the clinical management of patients with epilepsy by providing a safer and less-complicated therapeutic strategy which is preferable option to prevent polypharmacy in elders. However, as shown in the case report, Levetiracetam-induced psychosis should be kept in mind regardless of the time of onset, predisposing factors, and the severity of the symptoms. When observed, physician should stop the medication and switch to other classes of anti-epileptic medications, such as valproic acid which could result in complete remission of side effects. This case highlights that it is essential for psychiatrists to consider drug induced psychosis even when the onset of symptoms is not acutely after drug administration.

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