

# Tramadol use and seizure: A case report

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## Abstract

Opioids are commonly used and abused substance worldwide. Tramadol hydrochloride is a synthetic, centrally acting, opiate-like analgesic. Seizure is a rare side effect of tramadol. Tramadol-related seizures are short, tonic-clonic seizures that, like other drug-related seizures, are self-limiting. This epileptogenic effect of tramadol occurs at both low and high doses. We,

herein, report the development of seizures after the use of tramadol with increasing dose.

We report a 19-year-old man who had opioid dependence syndrome with regular use resulting into multiple episodes of seizures diagnosed as epilepsy for which Sodium valproate had been started.

## INTRODUCTION

Opioids are commonly used and abused substance worldwide. Tramadol hydrochloride is a synthetic, centrally acting, opiate-like analgesic. Standard therapeutic doses of Tramadol are 50 mg orally, 50–100 mg parenterally and 100 mg rectally. Its maximum recommended dose is 400 mg/day.<sup>1,2</sup> Tramadol-related seizures are short, tonic-clonic seizures that, like other drug-related seizures, are self-limiting. This epileptogenic effect of tramadol occurs at both low and high doses.<sup>3,4</sup> The risk of seizure will be increased in patient with epilepsy or history of seizures.<sup>5</sup> Here, the case is reported to highlight the role of tramadol for recurrent seizure, though rare. Such a case highlights the possibility of being misdiagnosed as Epilepsy.

## CASE PRESENTATION

A 19 year old Hindu unmarried male; belonging to middle socioeconomic status, with no history of mental illness in close family members; with apparently well adjusted premorbid personality; presented with history of consumption of Capsule Spasmoproxyvon (Dicyclomine 10 mg + PCM 325 mg + Tramadol 50 mg) from the age of 15 years, and subsequent craving, tolerance and withdrawal features. Patient used to consume combination capsule (Spasmoproxyvon) mostly and sometime capsule tramadol only. Maximum amount consumed was 8 capsules (Tramadol 400 mg). There was history of seizure episodes (3-4 episodes occurred over 1 year period as once in 3-4 months initially and later once in 1 month for 6 months). Each episode occurred when the dose was increased to 3-4

capsules from previous usual dose (e.g. at first when dose was increased from 8 to 10 capsule - Tramadol 500 mg, then from 12 capsule to 15 capsule- Tramadol 750 mg). Initially patient was diagnosed at other center as Opioid Dependence Syndrome with Seizure Disorder and prescribed with Tab Sodium Valproate 600 mg/day. Later he was admitted in Psychiatry ward of BPKIHS. There were no abnormal finding on neurological examination. MSE showed euthymic affect and no formal thought disorder. Sensorium and judgment were intact and insight about the illness was present. Blood Sugar, LFT, Creatinine, electrolytes were within normal limits." Is enough. CT scan of head showed a normal scan.

EEG finding was slow wave complex suggestive of genetic generalized epilepsy probably Lenox Gastaut Syndrome. After detailed workup, Sodium Valproate was removed and patient was kept for observation. Along with the strategies of motivation enhancement for substance abstinence and relapse prevention and needful treatment with symptom control and vitamin supplementation, patient was discharged after 15 days of hospital stay. He remained seizure free during 3 months of follow up.

## DISCUSSION

Seizure can occur due to various underlying etiologies like metabolic causes, uremia, infectious disease, brain tumor, trauma, withdrawal from drugs etc. It can also occur as a part of epilepsy syndrome. Tramadol is a synthetic analogue of codeine and acts as a pure opioid agonist. Tramadol is commonly seen to be prescribed instead of other potent opioid analgesics in the management of moderate to moderately severe pain associated with osteo-

arthritis, rheumatoid arthritis, low back pain and neuropathic conditions. There are controversies about the seizure-inducing effect of tramadol. Studies had been carried out across the world and also attempted to assess tramadol induced seizures. According to an Australia based study, between 2003-2004 a total of 97 patient's sourcing to established tramadol induced seizure was analyzed. Seizure occurred within 24-48 hours after the first intake of 500 to 750 mg/day tramadol, and between 2 to 365 days after the first intake in subjects consuming tramadol at a therapeutic range (50 to 300mg/day).<sup>6</sup> One study reported that all tonic-clonic seizures induced by tramadol occurred within 12 hours from tramadol intake and 4.7% of subjects had the history of febrile seizures in childhood.<sup>7</sup>

In our patient, through investigations, neuroimaging and EEG, we could not find other causes for seizure. There was also no history of past medical seizures. The case had history of- chronic consumption of opiate- Tramadol. Each seizure episode occurred within 24 hrs after the dose (single or in combination) increment to 3-4 capsules from previous usual dose (i.e 100 to 150mg of tramadol) and seizure was also reported to be generalized tonic-clonic in nature. Patient had no features of paracetamol toxicity (nausea, pain abdomen and derranged liver function test) and Dicyclomine toxicity (nausea, headache, difficulty swallowing). So, the etiology of seizure was decided as increasing the dose of opioid.

## CONCLUSION

Increasing even small dose of Opioid from usual dose can lead to seizure. For patients who have had a Tramadol induced seizure, the likelihood of recurrent seizures and the need for emergent anticonvulsant prophylaxis is unknown. However, treatment of patients with anticonvulsants prophylactically may cause adverse effects. Hence, detail pattern of substance use helps in prevention of administration of antiepileptic drugs. So we should screen for substance abuse in all cases of seizures.

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