

## Refractory Seizures in Tramadol Poisoning: A Case Report

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Received: 01.04.2014

Accepted: 06.05.2013

### ABSTRACT

**Background:** Tramadol, an analgesic drug abused by opioid addicts, is also abused accidentally or for suicidal purposes. Tramadol poisoning can induce CNS depression, seizures, coma, and ultimately death.

**Case:** In this report, a 30-year-old male was admitted to the emergency department due to suicidal attempt with ingestion of 14000 mg (140 tablet 100 mg) of tramadol. He had history of suicidal attempts in past years as well as depression in his past medical history, but he had not abused tramadol and other drugs in his history. There was no history of epilepsy or head trauma in. He presented with generalized seizures two hours post ingestion, and, then, he was referred to hospital four hours later. Generalized seizures were poorly controlled by multiple medications. Due to respiratory arrest, endotracheal tube was inserted and he was admitted to the ICU immediately. At admission, he experienced hypovolemic shock, hypoglycemia, coma, apnea, refractory seizures, muscle spasms, acute respiratory distress syndrome, coagulative disorder, rhabdomyolysis, and acute renal failure. Despite medical managements, he died 38 days after ingestion.

**Conclusion:** In this report, despite using inhalational anesthetic drugs, seizures continued and were very poorly controlled. Cause of death in this patient can be seen as the side effects of tramadol poisoning.

**Keywords:** Poisoning, Refractory Seizures, Tramadol.

IJT 2014; 1157-1159

### INTRODUCTION

Tramadol is considered a new synthetic and analgesic opioid in world [1]. This drug has low affinity for opioid receptors. That is it inhibits reuptake of norepinephrine and serotonin [2, 3]. Tramadol is used to treat acute and chronic pain [1]. This medication is also used by opium addicts [4].

Studies have shown the increasing abuse of tramadol in Iran. Moreover, several studies indicate an increase of tramadol poisoning in Loghman Hospital in Tehran [5]. This drug can result in dependency and withdrawal symptoms [1]. Side effects of tramadol poisoning include constipation, drowsiness, convulsions, respiratory distress, renal failure, seizures, and rhabdomyolysis [1,4].

### CASE REPORT

In this report, a 30-year-old male was admitted to the Emergency Department of Ayatollah Taleghani Hospital of Urmia University of Medical Sciences, Urmia, Iran, due to suicidal attempting with ingestion of 14000 mg (140 tablet 100 mg) of tramadol without consumption of other drugs. His medical history indicated depression and history of suicidal attempts, but he had no record of abusing tramadol and other drugs. There were old scars of self-injury on his left forearm. There was no history of epilepsy, yet he had generalized seizures two hours post ingestion, and then he was referred to hospital four hours later. At admission, he experienced coma, apnea, refractory seizures, and muscle spasms.

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Generalized seizures were poorly controlled by diazepam, phenytoin, sodium valproate, propofol, thiopental, and fentanyl. He did not have head trauma in his past medical history. Initial vital signs were at an abnormal range (BP: 80/40, PR: 54, RR: 4 BT: 36.4). On physical examination, slight reactive double midriasis was observed, but the lungs were clear and the heart presented no arrhythmia. Electrocardiogram showed a sinus bradycardia. Episodes of seizure occurred continuously and then stopped temporarily. In para-clinical evaluation, BS (57 mg/dl), WBC (max 24500), PMN (90%), creatinine (max 2.4 mg/dL), AST (417 U/L), ALT (424 U/L), CPK (max 12660 U/L), CKMB (max 140 U/L), LDH (max 2090 U/L) and urine analysis (PH: 5, hematuria, proteinuria, glycosuria, ketonuria), ABG: (respiratory alkalosis), CXR (aspirated pneumonia), brain CT (generalized brain edema and multiple regions of hypoxia) were observed. Other electrolytes were normal. At admission, he received anti-convulsion and inhalational anesthetic drugs, antibiotics, and dopamine-norepinephrine infusion, in addition to routine management. Furthermore, several neurologic consultations were performed. He was considered for dialysis but it was not performed because of severe hypotension. The patient had poor condition and showed many complications (multiple bed sores, coagulative disorders, renal failures, and de-cerebrate position). Finally, the patient deceased due to cardiac arrest 38 days after tramadol poisoning. At all stages of investigation, authors committed to the Helsinki Convention.

## DISCUSSION

In this case report, seizures were very poorly controlled. In one study performed on 401 patients with a history of tramadol poisoning from March 2008 to March 2009, 121 patients (30.2%) had seizure. Onsets of seizures were 20 minutes to 12 hours after tramadol poisoning. The majority of the patients (84.3%) had single seizures and 15.7% had multiple seizures. Overall, 15% of the patients had previous history of seizure; most of whom had a history of

previous tramadol poisoning and only 1.5% reported a family history of seizures. In most of the cases, seizures responded to treatment with diazepam [6-9].

In another study, a 19-year-old male with successful suicidal attempting with tramadol (10000mg) was admitted to hospital. Upon admission, the patient showed frequent seizures, loss of consciousness, and respiratory distress. Then he was intubated immediately. Seizures responded to diazepam [10].

## CONCLUSION

The patient had no history of seizures, trauma, diabetes, renal failure, infection, and any physical and familial diseases in his past medical history. Patient's examination of history of tramadol ingestion, refractory seizures, and normal electrolytes suggested tramadol poisoning and ruled out other causes of seizure.

Despite using many different medications, seizures continued and were very poorly controlled. This case report is rare because patients in most studies either had single seizures that did require treatment or had multiple seizures that responded to the routine treatment.

## ACKNOWLEDGEMENTS

The authors would like to express their gratitude to Ayatollah Taleghani Hospital, Urmia for supporting this study. This article was written after obtaining informed consent from the patient and his family, so the authors would like to extend their gratitude to them.

## REFERENCES

1. Radbruch L, Grond S, Lehmann KA. A risk-benefit assessment of tramadol in the management of pain. *Drug safety*. 1996;15(1):8-29.
2. Tarkkila P, Tuominen M, Lindgren L. Comparison of respiratory effects of tramadol and pethidine. *European journal of anaesthesiology*. 1998;15(1):64-8.
3. Stacey BR, Dworkin RH, Murphy K, Sharma U, Emir B, Griesing T. Pregabalin in the Treatment of Refractory Neuropathic Pain: Results of a 15-Month Open-Label Trial. *Pain Medicine*. 2008;9(8):1202-8.

4. Afshari R, Ghooshkhanehee H. Tramadol overdose induced seizure, dramatic rise of CPK and acute renal failure. *J Pak Med Assoc.* 2009;59(3):178-9.
5. Sarjami S, Pajoumand A. One year epidemiological study of acute adult and adolescent poisoning admitted to Loghman Hospital, Tehran, 2004-2005. *Scientific journal of forensic medicine.* 2008;13(48):235-40.
6. Taghaddosinejad F, Mehrpour O, Afshari R, Seghatoleslami A, Abdollahi M, Dart RC. Factors related to seizure in tramadol poisoning and its blood concentration. *Journal of medical toxicology.* 2011;7(3):183-8.
7. Mehrpour M. Intravenous tramadol-induced seizure: two case reports. *Iran J Pharmacol Ther.* 2005;4(2):146-7.
8. Epstein DH, Preston KL, Jasinski DR. Abuse liability, behavioral pharmacology, and physical-dependence potential of opioids in humans and laboratory animals: lessons from tramadol. *Biological psychology.* 2006;73(1):90-9.
9. Kroenke K, Krebs EE, Bair MJ. Pharmacotherapy of chronic pain: a synthesis of recommendations from systematic reviews. *General hospital psychiatry.* 2009;31(3):206-19.
10. Gheshlaghi F, Eizadi-Mood M, Fazel K, Behjati M. An unexpected sudden death by oral tramadol intoxication: a case not reported earlier. *Iranian Journal of Toxicology.* 2009;2(4):292-4.