

## **Tramadol Induced Seizures, a case series Report**

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### **I. Introduction**

Tramadol hydrochloride is a centrally acting analgesic that has moderate affinity to mu receptor. They inhibit reuptake of Serotonin and noradrenaline (2). It has become increasingly popular for a variety of reasons because of production of analgesia by Tramadol without depression of ventilation and low potential for development of tolerance, dependence and abuse potential.

There are few tramadol induced seizures reported around the world (5). We are reporting 3 cases who developed generalized tonic clonic seizure after i.v. injection of tramadol given as pre medication for anaesthesia and analgesia

#### **Case 1**

A fifty year female, weight 70 kg with history of hypertension was scheduled for elective surgery under general anesthesia. Her BP was controlled with Tab Amlpress AT (Atenolol 50mg + Amlodipine 5mg). In the operation theater multiparameter monitor was attached, her BP was 150/90. The patient was premedicated with injection Glycopyrolate 0.2 mg, Ondansetron 4 mg and Tramadol 150 mg. Within five minutes of administration an episode of generalized tonic clonic seizure occurred. Injection Midazolam 8 mg was given immediately, patient was intubated and ventilated with Bain Circuit. Patient was extubated after 30 minutes when she became conscious and had spontaneous respiration, and adequate muscle power. She was further ventilated in HDU for 2 hours.

#### **Case 2**

A 25 year male of weight 45 kg was scheduled for elective surgery under spinal anesthesia, he had past history of seizure 5 years back, but was not taking any anticonvulsant. During surgery he developed moderate pain, injection Tramadol 100 mg was given, within 3 minutes he developed tonic clonic seizure, injection midazolam 4 mg was given. Guedel's airway was inserted to prevent tongue bite and oxygenated with Bain Circuit his respiration was smooth (RR 15/min) BP was 120/80 and heart rate was 130/min, thereafter surgery was completed and was uneventful.

#### **Case 3**

A 56 years female was suffering from ureteric colic due to ureteric calculus for last three days and needed repeated intramuscular diclofenac. At night she developed severe ureteric colic, pain was not relieved by diclofenac so intravenous tramadol 150 mg was given, following which she developed generalized tonic clonic seizures. This episode occurred at doctor's resident hence exact sequence of events could be noted. As patient had consumed dinner just half an hour before, she had one episode of vomiting which she aspirated. She was intubated at home without any relaxant and patient was having spontaneous respiration, but intubation was delayed as some time was lost in arranging the intubation kit. Patient was shifted to emergency section of our hospital within fifteen minutes and was connected to Bain Circuit. Immediately on arrival she had cardiac arrest, cardiac monitor showed asystole. Patient was revived after five minutes of CPR with sinus rhythm and was put on inotropic support with noradrenaline and was shifted to ICU. Post resuscitation there was no spontaneous respiration and pupils were dilated and fixed. Patient remained in same condition in ICU for next twenty four hours and then had cardiac arrest from which she could not be revived.

### **II. Discussion**

Tramadol is a centrally acting analgesic indicated for moderate to severe pain (1) it stimulates opioid receptors, and inhibits noradrenaline and serotonin reuptake. Seizure and serotonin syndrome are amongst the more commonly reported adverse reactions (2). Seizures can occur with tramadol, particularly if high doses are used or there is concomitant use of medicines can increase the risk of serotonin syndrome. But we were using Tramadol dose 2mg/kg instead of that it caused seizure. To reduce the likelihood of these serious reactions occurring, use the lowest effective doses of tramadol and avoid its use in patients with history of seizure disorders,

Mehrpour (3) reported two cases of intravenous tramadol – induced seizures and noticed that this epileptogenicity is increased in i.v. dose and associated with agitation, tachycardia, and hypertension as like our 1 case, suggesting a possible mild serotonin syndrome.

Some studies were conducted to assess that pre-existing lowered seizure threshold increases the risk of tramadol – induced seizures (4)

In one study, it was observed that all tramadol induced tonic –clonic seizures occurred within 12 hours after tramadol intake and 4.7% of subjects had a history of febrile seizures in childhood (5), in our case 2, he had a history of seizures.

### **III. Conclusion**

Thus we concluded that i.v. tramadol can induce seizures even in the recommended dose 2-3 mg/kg, and this potential life – threatening adverse reaction should be considered if tramadol is being given to epileptic patients. Tramadol should not be administered to patients receiving SSRIs, TCAs and antipsychotics.

### **References**

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