

Tramadol Overdose

Tramadol is a widely prescribed medication used to treat moderate to severe acute and chronic pain. It is a centrally acting analgesic that is a weak mu opioid receptor agonist and a norepinephrine and serotonin re-uptake inhibitor. Tramadol, first available in the United States in March 1995, is not scheduled (except in a few states) and became popular because of the ease in prescribing. Although it is not scheduled, tolerance, dependence and withdrawal symptoms can develop.

Because of its opioid properties, tramadol can cause euphoric-like effects and is commonly abused by ingesting, snorting or injecting the drug. Rapid absorption leading to high blood levels often results in toxicity. Overdoses also occur as a result of intentional ingestions in adults and unintentional exposures in children. In mild to moderate cases, patients exhibit drowsiness, nausea, vomiting, and possibly constricted pupils. Severe effects such as coma, respiratory depression, tachycardia, hypertension and seizures have been reported. The FDA received reports of 121 seizure events associated with tramadol within the first 16 months it was on the market. In a published case series of tramadol ingestions reported to a poison control system, 13.7% of patients developed seizures. The smallest dose associated with seizures was 200 mg and seizures occurred within 4-10 hours of ingestion. This study also found that unintentional ingestions of tramadol in the pediatric population was well tolerated with sedation being the primary effect. Other effects, such as agitation, tachycardia, erythema, and vomiting were also seen in 8 of the 51 children. The amounts ingested were between a "taste" and 300 mg. (*Ann Pharmacother* 2005; 39:1039-44). There have also been cases of tramadol overdoses with serotonergic symptoms, such as tremors, shivering, agitation, confusion, diaphoresis, and hypertension.

With acute overdoses, activated charcoal may be administered within 1-2 hours of the ingestion. Naloxone will reverse the opioid effects of tramadol (CNS depression, respiratory depression) but not the serotonin or norepinephrine effects (tachycardia, hypertension, seizures). Seizures should be treated with benzodiazepines.

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DID YOU KNOW THAT... standard urine toxicology screens will not detect tramadol?

Most standard urine toxicology immunoassays test for morphine, a metabolite of codeine and heroin, to detect opiates. Because tramadol and many other opioid analgesics (e.g. fentanyl, oxycodone) are not metabolized to morphine, assays will be negative for opiates. However, tramadol might be detected in a more comprehensive toxicology urine analysis. It's important for health care providers who order and assess toxicology screens to know what drugs the immunoassay tests for and to be familiar with the false positives and false negatives that can occur. The poison specialists at the Maryland Poison Center are available 24/7 to help interpret toxicology screen results.



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