Tramadol Overdose

Tramadol is a commonly used pain medication in veterinary medicine acting as a µ-opioid receptor agonist, serotonin reuptake inhibitor, and noradrenaline reuptake inhibitor. Overdose with tramadol can cause serotonin toxicity by stimulating serotonin release and inhibiting serotonin reuptake.

This article reviewed the first case report of serotonin syndrome from tramadol toxicity in a cat. A 19-year-old domestic short-haired cat was accidentally administered 2 doses of 80 mg/kg tramadol in 1 day. The cat presented 36 hours after the first dose with dehydration, hypertension, and altered mentation. The cat was treated with IV fluids and acepromazine but continued to deteriorate and was transferred to an emergency facility. At the facility, the cat presented obtunded, laterally recumbent, tachycardic, normotensive, normothermic, and had severe abdominal pain and abdominal distension. The bloodwork results were unremarkable for a 19-year-old cat. Based on history, a presumptive diagnosis of serotonin toxicity from tramadol overdose was made. The emergency facility treated the cat with IV fluids, buprenorphine, a microenema, and cyproheptadine.

Cyproheptadine is a 5-HT2 antagonist recommended in the treatment of serotonin toxicity. While hospitalized, the cat had intermittent periods of tachycardia and hypertension, which resolved after 4 days. It was 7 days before the cat had normal mentation and was able to walk a few steps without assistance. Fourteen days after tramadol ingestion, the cat was continuing to improve and had no permanent consequences from the tramadol toxicity.

Global Commentary
Tramadol is commonly used in veterinary medicine because of its wide margin of safety, availability (eg, oral formulation), and opioid-like analgesic properties. In geriatric cats or those with renal insufficiency, tramadol provides a safer alternative than NSAIDs. While tramadol generally has a wide margin of safety, caution should be used when dispensing (eg, advising owners of the appropriate dose and frequency for administration) to prevent accidental tramadol toxicosis. Rarely, even at therapeutic doses, signs of serotonin syndrome can be seen. With discontinuation of the drug, fluid therapy, serotonin antagonists (eg, cyproheptadine), sedatives (eg, acepromazine, chlorpromazine), and symptomatic supportive care, the prognosis for tramadol toxicosis even with accidental overdose is excellent.—Justine A. Lee, DVM, DACVECC, DABT

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