# ToxTidbits

Maryland Poison Center
UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY

December 2019 | Poison Center Hotline: 1-800-222-1222

**The Maryland Poison Center's Monthly Update: News, Advances, Information**


## Pediatric Vilazodone Ingestions: A Medical Emergency

A 3-year-old female patient presents to the hospital after ingestion of an unknown quantity of her mother's vilazodone. Mom reports this occurred about an hour ago and the patient has vomited twice while in the emergency department. A quick review of the mechanism of action identifies that vilazodone is an antidepressant that is part selective serotonin reuptake inhibitor (SSRI) and a partial serotonin agonist. While published cases and studies show that SSRIs are usually well tolerated, vilazodone is not *(Clin Toxicol 2012;50(5):418-423)*.

Vilazodone (Viibryd®) is an infrequently prescribed antidepressant available as 10, 20, and 40 mg tablets. In 2016, there were approximately 1.5 million prescriptions for vilazodone ranking it the 278th most prescribed drug and the 12th most prescribed antidepressant (ClinCalc). In contrast, there were almost 24 million prescriptions for fluoxetine, which was the 6th most common antidepressant.

Several case reports have described the acute toxicity of vilazodone in unintentional ingestions in pediatrics. Reported symptoms include vomiting, hallucinations, coma, seizures including status epilepticus, and serotonin syndrome *(Ped Emerg Care 2018;34(12):e226-e228; Ped Emerg Care 2018;34(3):e51-e54; BMC Clin Pathol* 2019;19(2):1-9; *J Emerg Med 2015;49(3):284-286; Clin Toxicol 2017;55(9):1004-1007; Clin Toxicol 2015;53(3):188-188).* Based on the available case reports, most children exhibit symptoms within 1.5 to 3 hours after ingestion. Frequently, the first symptoms noted are vomiting followed by CNS depression and then seizures in rapid succession. In a large study using poison center data, the lowest dose reported to cause seizures was 1 mg/kg (just one of the lowest strength tablets for a 10 kg child), but the median dose was 4 mg/kg. Additionally, the lowest dose associated with coma was 0.6 mg/kg. Serotonin syndrome, a toxidrome uncommonly seen in single-substance exposures, has been reported in doses as low as 5.4 mg/kg (*Ann Emerg Med 2012;60(6):819-820)*.

When comparing vilazodone to classic SSRIs, the relative toxicity is astounding. The odds ratio of a major effect (potentially life-threatening and required intervention) was 61.5 (95% CI: 25.2 to 140.3). All toxic effects were more frequent with vilazodone versus other SSRIs including concerning effects like coma, muscle rigidity, seizures, and hyperthermia *(Clin Toxicol 2017;55(5):352-356).*

Treatment is entirely supportive including management of the airway, control of agitation with GABA-A agonists such as benzodiazepines, and maintaining adequate circulation. A review of cases showed that most patients responded well to administration of benzodiazepines to treat seizures and serotonin syndrome, although some patients required barbiturates to stop seizures. Cyproheptadine was administered in at least one case for serotonin syndrome (*Clin Toxicol 2017;55 (9):1004-1007).* In general, the duration of effects is less than 24 hours, with many of the cases describing a 24-hour admission; this was also shown in a large poison center study *(Clin Toxicol 2017;56(2):113-119).*

## Did you know?

**Severe poisoning has been reported in adults as well as young children.**

There are fewer published case reports of vilazodone overdose in adults compared to children, but a recent systematic review discovered cases of serotonin syndrome with as little as 5 times the therapeutic dose (200 mg). The authors recommend observing adults for 6-8 hours because in two published cases of adults who were asymptomatic on presentation, the signs and symptoms of poisoning were noted at 3 and 4 hours after the ingestion *(Baumgartner. Clin Toxicol, published online 28 Nov 2019).*


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