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Unintentional Ketamine Overdose Via Telehealth

TO THE EDITOR: The use of ketamine in psychiatry has expanded to at-home ketamine-assisted therapy (KAT) via telemedicine (1). We report a case of massive unintentional ketamine overdose during at-home KAT resulting in hypoxemic respiratory failure, successfully treated with atropine.

A 35-year-old female with posttraumatic stress disorder (PTSD) presented to the emergency department following ketamine overdose. Several weeks prior, the patient initiated at-home KAT for PTSD via telehealth. She was instructed to allow 1,200 mg (20.6 mg/kg) of ketamine sublingual tablets to dissolve for 7 minutes, before spitting out her saliva (Figure 1). The day of presentation, she was instead instructed to swallow her saliva. The patient's husband heard these instructions, left the room, and returned to find his wife unresponsive, salivating, and

FIGURE 1. Ketamine prescription for at-home ketamine-assisted therapy.



moaning. An ambulance transported the patient to the emergency department, where she was noted to be unresponsive with temperature 36.6°C, pulse 90, respiratory rate 18, blood pressure 155/92, and oxygen saturation (SpO₂) 80% on room air. Examination revealed Glasgow Coma Score 10; midrange, reactive pupils; vertical and horizontal nystagmus; excessive lacrimation and copious oral secretions; and diffuse rhonchi.

Supplemental oxygen was administered via non-rebreather mask without effect. Suspecting bronchorrhea as the etiology for refractory hypoxemia, the emergency department physician administered 0.5 mg of intravenous (IV) atropine with rapid clinical improvement: lung sounds cleared and SpO₂ increased to 98% on non-rebreather mask. Electrocardiogram and laboratory analyses were unremarkable. The patient was monitored for 8 hours, gradually returning to normal mentation and weaning to room air. She was discharged home without apparent sequelae.

The patient's blood concentration of ketamine was 4,400 ng/mL. Ketamine concentrations for general anesthesia average 2,200 ng/mL (2).

Current ketamine prescribing extrapolates weight-based sublingual dosages from oral pharmacokinetic data and off-label IV infusion protocols (1). Prescribers may advise administration of sublingual ketamine and spitting out secretions up to 7 minutes later to circumvent erratic absorption seen in oral administration. It is unknown why this patient was instructed to swallow her secretions following sublingual ketamine administration, contradicting the written prescription. While a pharmacy compounding error cannot be excluded, the ingested amount was equivalent to IV administration of 4 mg/kg ketamine (3), a dose reserved for induction of anesthesia with effects consistent with the patient's presentation.

While expanded access to at-home ketamine therapy may benefit individuals with refractory psychiatric conditions, the current lack of regulation poses significant safety risks and raises health equity concerns. When administered by trained providers with appropriate monitoring, ketamine is a safe medication. Compared to established treatments such as

selective serotonin reuptake inhibitors with a broad therapeutic range, ketamine carries an increased risk of serious adverse effects. Providers must be cognizant of the potential for inadvertent or intentional ketamine overdose (4, 5). Additionally, lack of regulation may foster predatory (for-profit companies targeting a vulnerable population with psychiatric comorbidities) or inequitable (ketamine therapy being available only to those who can pay out of pocket) business practices. It is imperative to develop guidelines regarding best practices for the prescribing and monitoring of ketamine therapy to ensure safe, equitable access to this promising treatment modality.

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