From: Ron Kirschner, MD, Medical Director

To: ALL HEALTH CARE PROFESSIONALS

Subject: Bupropion overdose

Date: 4/1/25

* Bupropion is the drug most frequently associated with seizure in overdose.
* It’s available in three formulations, immediate, sustained, and extended release, with the latter two accounting for about 95% of bupropion exposures reported to our center.
* Therefore, seizures are often delayed until several hours after initial exposure.
* In early-presenting patients, consider activated charcoal if alert enough to drink it.
* Although the initial seizure could be delayed up to 24 hours this is rare, and it typically occurs within 8-12 hours of exposure.
* Patients who seize following bupropion exposure are almost always tachycardic and frequently have altered mental status.
* Patients with a history of intentional bupropion exposure who have normal vital signs and mentation after 12 hours of observation may be candidates for medical clearance.
* QRS widening can be seen in bupropion toxicity, but the mechanism is different than in cyclic antidepressant poisoning, and it typically does not respond to sodium bicarbonate.

References

1. Offerman S. Bupropion associated seizures following acute overdose: who develops late seizures. *Clin Toxicol* 2020; 58:1306-1312,
2. Idowu D. The predictive value of heart rate in determining clinical course after a bupropion overdose, *Clin Toxicol* 2024; 62:296-302.
3. Simpson M. Sodium bicarbonate treatment for QRS widening in bupropion overdoses. *Clin Toxicol* 2023; 61:436-444.

There are Registered Nurses and Pharmacist available 24/7/365. Consultation with a medical toxicologist is available by request.