

Disclaimer: These are guidelines only and should only be used for treatment guidance. All decisions should be made by the physician caring for the patient

## Xylazine

In the world of emerging drugs of abuse, it is always interesting to see older drugs make a comeback. Xylazine was created in 1962 and found to be a potent central alpha<sub>2</sub> adrenergic blocking agent. The drug causes sedation and anesthesia, respiratory depression, slow heart rate, muscle relaxation and potentiates pain relief. However, in humans, it also causes significant slowing of the heart rate and low blood pressure. Because of this, it was never FDA approved for human use. However, it is a potent veterinary agent, used as an animal “take-down” agent and anesthetic and is known by the trade name Rompun™. In the early 2000s, xylazine became a drug of abuse in Puerto Rico and was added to heroin or included in “speedballs” as an addition to or as a substitute for heroin<sup>1</sup>. Appropriately so, it was called *anesthesia de caballo* (horse anesthesia) on the street. Since it has many of the same effects as opioids, it could be substituted for the opioid or the two together have additive effects. Since then, the drug has shown up intermittently with the National Forensic Lab Information System and between 2006-2018; the Philadelphia Medical Examiners Office recorded increasing incidence of cases. In early 2019, Maryland reported several cases and now we have a confirmed case in Michigan.

Xylazine can be swallowed, inhaled, smoked, snorted, or injected into the muscle or vein. There is no information on vaping. It has rapid onset within minutes and can last 8 hours or longer depending upon the dose, way it was taken, and whether it was mixed with an opioid or other drug. Intoxication mimics clonidine and tizanidine as all share the same mechanism of action. Initially people become sleepy with dry mouth. The heart rate and blood pressure will drop. With increasing dose, they may become comatose with small pupils, their muscles can become floppy and their body temperature can drop. Eventually breathing will decrease and eventually stop. This can look very similar to an opioid overdose.

It is difficult to clinically determine if someone has taken xylazine or an opioid. Xylazine does not bind to the opioid receptor so it will not respond to naloxone. Xylazine should be suspected if someone appears to have an opioid overdose with small pupils, not breathing well, unresponsive but no response to naloxone and has a very low heart rate (30-40s) and low blood pressure. Treatment is supportive. The airway should be secured, and respirations provided. Atropine or low dose epinephrine can be tried to improve the heart rate and blood pressure. The blood pressure usually responds to fluids or if a pressor is needed, norepinephrine (Levophed) is the preferred agent. Xylazine can be picked up in a comprehensive toxicology screen (gas chromatography-mass spectrometry) but will not show on routine drugs of abuse testing.

It is suspected that clinicians in MI have seen xylazine over the past year, but the cases were considered atypical opioid overdoses as their heart rates and blood pressure were lower than expected. Please notify the state drug lab and the Poison Center (313-745-5711) if you suspect xylazine.

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<sup>1</sup> Forensic Sci Int 2014;240:1-8