

POISON PEARLS



Toxicology Topics for the Healthcare Team of a Poisoned Patient

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Xylazine Toxicity

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Background

Xylazine is a non-opioid veterinary tranquilizer used for procedural sedation. It is sometimes referred to as “tranq” and is not approved for human use. The first reports of misuse as an injectable in humans began in the 1970s. ([Carruthers et al., 1979](#)).

Xylazine has been increasingly detected as an adulterant in illicit drug supplies. It is commonly mixed with CNS depressants such as heroin and illicit fentanyl, but has also been detected in stimulant drugs like cocaine. It poses significant toxicity risks when used outside of veterinary medicine.

Ohio and several other states have classified xylazine as a Schedule III controlled substance, but it remains unscheduled at the federal level. ([Governorohio.gov, 2023](#)). It has been declared an emerging threat by the White House Office of National Drug Control Policy.

Mechanism

Originally developed as an antihypertensive, xylazine is a partial alpha-2 adrenergic agonist that inhibits norepinephrine and dopamine release. It interacts with multiple receptor systems including the cholinergic, serotonergic, dopaminergic, alpha-1 and 2 adrenergic, histaminergic, and opioid receptors ([DEA, 2022](#)).

Clinical Presentation

In overdose xylazine is associated with prolonged sedation, hypotension, bradycardia, and respiratory depression.

Its misuse has been linked to skin and soft tissue infections, often resulting in necrotic wounds, even without direct injection exposure ([HHRC, 2023](#)). The underlying mechanism of necrosis is theorized to involve xylazine’s cytotoxic and vasoconstrictive properties ([Lutz et al., 2024](#)). Muscle injuries due to prolonged immobility have also been reported.

Management

Xylazine is not detected on standard urine drug screens and since it is not an opioid is not reversed by naloxone. However, in cases of suspected opioid co-ingestion, naloxone administration remains essential for reversal of opioid-induced respiratory depression. It is important to recognize that in cases of illicit drug supply adulteration several substances may be involved.

The primary approach to managing xylazine toxicity is supportive care, with a focus on hemodynamic stabilization and respiratory support. Due to the risk of necrotic skin and soft tissue injury, a thorough skin examination is crucial for early identification and appropriate wound management.

Xylazine Test Strips

Positive Result T C XYL

Negative Result T C XYL

Invalid Result T C XYL

Key Points:

- Treatment:
 - Administer naloxone if opioid coingestion is suspected
 - Manage airway with supplemental oxygen or ventilation as needed
 - For hypotension use IV fluids and if needed vasopressors
- Wound Care:
 - Xylazine-associated wounds often develop on extremities, with necrotic tissue and drainage
 - Severe cases may require surgical debridement or amputation
 - Consider MRSA and Group A strep antibiotic coverage
 - Use daily layered dressing changes; topical ointments may help in milder cases
- Harm Reduction:
 - Xylazine and fentanyl test strips are available through harm reduction programs and online retailers
 - Patients with intentional xylazine misuse history should be encouraged to seek recovery support services

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For non-urgent questions or to submit topic ideas please contact:

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