medetomidine

what is it & why does it matter

The Basics

- A tranquilizer and alpha-2 agonist similar to xylazine
- First found in the Philly drug supply at the end of April 2024
- Found in 76% of illicit opioid samples tested in PA in the first half of 2025*
- Clinical purposes:
  - induces sedation
  - an analgesic: **causes an inability to feel pain**
  - an anxioltic: **causes a level of sedation associated with extreme relaxation but may not be awake & may not be able to respond**
  - **muscle relaxation**
- **Withdrawal is high risk and hospitalization is required.**

*Data from PAGroundhogs

Similarities to xylazine aka tranq

- Medetomidine is an alpha 2 agonist
- Causes significant sedation
- Causes vasoconstriction
  - Will slow healing of wounds
- Causes respiratory depression
- Causes dry mouth
- Not approved for human use but unlike xylazine, there is a version of medetomidine that is approved for use in humans known as dextromedetomidine

Differences between medetomidine & xylazine aka tranq

- Causes muscle twitches*
- Can cause hallucinations*
- Causes peripheral cyanosis - can turn skin colors, but person isn't truly cyanotic (without oxygen)*
- Medetomidine is **considered to be stronger than xylazine (200x) and has a longer duration of action which means that it lasts longer than xylazine.**
- Medetomidine causes **an increase in urination which leads to dehydration and an increase in overdose risk.**
- There is a form of medetomidine that is approved for use in humans known as dextromedetomidine.

***Symptoms not found with xylazine use**

Developed by: Jen Shinefeld M.S. & Shannon Ashe, MSW, LCSW 06/2024

medetomidine

what is it & why does it matter

Adverse Effects

- Deep state of unconsciousness
- Respiratory depression
- Cardiac & Circulatory depression
- Dry mouth
- Dilated pupils
- Hypothermia-low body temperature
- Muscle spasms
- Low heart rate
- High blood pressure followed by prolonged low blood pressure
- Peripheral vasoconstriction - turns skin blue; can mask actual cyanosis (lack of oxygen within the body)

Withdrawal

Historically, opiate withdrawal is extremely uncomfortable but not life threatening. With high concentrations of medetomidine in the illicit opiate supply becoming the new norm, this is no longer the case. **Withdrawaling from illicit opiates that have alpha-2 agonists in them can be fatal. Therefore, IT IS NECESSARY TO SEEK MEDICAL TREATMENT FOR WITHDRAWAL.**

Responding to an overdose involving medetomidine

- Though medetomidine is not an opioid and will not respond to naloxone, it has been found in combination with fentanyl and therefore, if breathing is not present or is labored including gasping, snoring, shallow breaths etc., **the use of naloxone is still recommended.**
- **Rescue breathing is essential.**
- **Utilize the rescue position.**
- **Management of body temperature**
  - **use of cooling measures like wet paper towels**
- **Encourage hydration to reduce risk of kidney damage.**

Medetomidine: Summary

01 Found in the Philadelphia drug supply in April of 2024. Present in 76% of samples from Jan.-June 2025.

02 Similar to xylazine but has a longer duration of action, meaning it lasts longer.

03 Causes muscle twitches & hallucations which can act as a red flag for the presence of medetomidine in your supply.

04 Hydration & managing body temperature as well as oxygenation are essential.

05 Withdrawal can be fatal, seek medical attention.

Developed by: Jen Shinefeld M.S. &
Shannon Ashe, MSW, LCSW 11/2025