

Novel Opioid Cychlorphine Linked to Non-Fatal Overdose in First Direct Evidence of Patient Exposure

The American College of Medical Toxicology reports the first biologically confirmed non-fatal overdose involving cychlorphine, an emerging synthetic opioid.



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PHOENIX, AZ, UNITED STATES, August 17, 2026 /EINPresswire.com/ -- The American College of Medical Toxicology (ACMT) announced the publication of a case report in the Journal of Medical Toxicology providing the first direct evidence of cychlorphine exposure in a patient experiencing a non-fatal overdose. The case highlights the challenges posed by emerging synthetic opioids that are not detected by routine hospital toxicology testing and may be present in counterfeit pills.

Cychlorphine is a potent synthetic opioid belonging to the "orphine" class of opioids that has emerged in the illicit drug supply and has been detected in fatal overdose cases. Until now, however, there has been limited clinical information about cychlorphine exposure among patients who survive an overdose. This case provides direct evidence of cychlorphine in a biological specimen following a non-fatal overdose, distinguishing it from prior reports based on drug material recovered at the scene.

The case was identified through the Toxicology Investigators Consortium (ToxIC) Fentalog Study, a multicenter prospective surveillance program examining emergency department patients with suspected opioid overdose. A woman presented to the emergency department after reportedly taking alprazolam and developed respiratory depression that improved following naloxone administration. Routine hospital toxicology testing was negative for fentanyl and other opioids. However, advanced toxicological analysis of a blood specimen identified cychlorphine as the only opioid detected.

The findings underscore the limitations of routine toxicology testing in identifying emerging opioids. Cychlorphine is structurally distinct from fentanyl and is not detected by standard hospital toxicology assays, meaning clinicians may not recognize exposure even when a patient presents with a classic opioid toxidrome.

Key Findings Include:

First direct evidence of cychlorphine exposure in a non-fatal overdose: Advanced testing of a patient biological specimen directly identified cychlorphine in association with a non-fatal overdose.

- Routine testing did not detect the opioid: Standard hospital toxicology testing was negative for fentanyl and other opioids despite clinical evidence of opioid toxicity. Identification of cychlorphine required comprehensive toxicological analysis.

- Naloxone was effective: The patient's respiratory depression improved following naloxone administration, underscoring the importance of treating suspected opioid overdose based on clinical presentation even when routine toxicology testing is negative.

- Counterfeit pills may be an important source of exposure: The patient reported taking alprazolam, raising concern for exposure to a counterfeit medication containing cychlorphine rather than the intended drug.

"This case illustrates the growing need for comprehensive drug surveillance and advanced toxicological testing to identify emerging substances that may otherwise remain undetected in patients presenting with overdose." said Rebecca Kusko, MD, lead author.

ACMT recognizes the contributions of the study authors Rebecca Kusko, MD, MS; David Liss, MD; Stacey L. House, MD, PhD; Serena B. House; Alex Krotulski, PhD; and Kim Aldy, DO, MS, MBA, as well as Alex Manini, MD, MS, Principal Investigator of the NIH-funded ToxIC Fentalog Study (Award# 2R01DA048009), and the investigators from the ToxIC Fentalog Study Group. Their collaborative efforts continue to advance national surveillance of emerging drugs and strengthen the clinical understanding of novel synthetic opioids in the illicit drug supply.

The full study is available in the Journal of Medical Toxicology and can be accessed [here](#):

The American College of Medical Toxicology (ACMT) is a professional, nonprofit association of physicians board certified in medical toxicology and other professionals with expertise in this area. ACMT members specialize in the prevention, evaluation, treatment, and monitoring of injury and illness from exposures to drugs and chemicals, as well as biological and radiological agents, and work in clinical, academic, governmental, and public health settings, and provide leadership in poison control centers.

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For additional information or interview requests, please contact the communications team at communications@acmt.net.

For additional information about ACMT, please visit <https://www.acmt.net/media-inquiries/>

You can find a link to the full press release on the ACMT website at:

<https://www.acmt.net/news/novel-opioid-cychlorphine-linked-to-non-fatal-overdose-in-first-direct-evidence-of-patient-exposure/>

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