

# UPSTATE NEW YORK POISON CENTER

February 2024

## Toxicity Talk: Expert Insights for Healthcare Professionals



### IN THIS ISSUE

## Happy 2024!

2023 was a busy year for the Upstate New York Poison Center. We managed nearly 50,000 incoming calls from both the public and health care professionals. Nearly 25% of our incoming calls came from a health care facility. As in previous years,

analgesics (including acetaminophen and salicylates) were the top pharmaceutical substances involved in our cases. Rounding out the top five pharmaceuticals were antidepressants, antihistamines (e.g.: diphenhydramine), sedatives/hypnotics (benzodiazepines, ethanol), and cardiovascular drugs. **For a full summary of our year, please take a look at our [annual report](#).**

A reminder, this is the second edition of our new toxicology newsletter geared towards health care professionals. This will be a quarterly newsletter highlighting emerging trends.

**Please share this with your colleagues and do not hesitate to contact us with any potential topics to include in upcoming newsletters.**

Clinical Director

Jeanna Marraffa, PharmD, MPH, DABAT, FAACT

*Jeanna Marraffa*

## EMERGING TRENDS

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# Tianeptine

Recently, mainstream media have been reporting on a new trend called 'gas station heroin.' These stories discuss the use and potential toxicity of tianeptine.

Tianeptine is an approved pharmaceutical in more than 60 countries worldwide; however, it is an unapproved drug in the United States. Tianeptine is structurally similar to tricyclic antidepressants and is used as an anxiolytic and antidepressant due to its ability to increase serotonin in the synapse. At higher doses, it is an opioid receptor 1 agonist (mu-opioid receptor) agonist. Due to its effect on the opioid receptors and an increase in dopamine concentrations in the brain, it has been used as an alternative to opioids and to mitigate opioid withdrawal symptoms.

Tianeptine calls to poison centers have increased in the past several years (Rushton et al.) Symptoms include CNS and respiratory depression with several patients requiring naloxone. In addition to acute toxicity, patients may also exhibit withdrawal from tianeptine which is like opioid withdrawal.

The New Jersey Poison Center recently reported a cluster of cases published in the CDC's MMWR. [The full report is linked here.](#)

If you have a patient with suspected toxicity or withdrawal from tianeptine, please call the poison center at [1-800-222-1222](tel:1-800-222-1222).

*References:*

*Marraffa JM et al. Poison Control Center experience with tianeptine: an unregulated pharmaceutical product with potential for abuse. Clin Tox 2018; 56(1): 1155-1158.*

*Rushton W et al. Characteristics of tianeptine effects reported to a poison control center: a growing threat to public health. Clin Tox 2021; 59(2): 152-157*



## **Beware: Acetaminophen Reporting Units Change**

Acetaminophen [APAP] poisoning is the leading cause of drug-induced hepatic failure and one of the most commonly ingested substances reported to poison centers each year. The Rumack-Matthew nomogram provides a tool to risk assess patients based on at least a 4-hour post-ingestion acetaminophen level. For those of us in the United States, an acetaminophen level of 150 mg/L or greater at 4 hours

post-ingestion is a potentially toxic concentration and is an indication to initiate treatment with the antidote, N-Acetylcysteine.

The most used units to report APAP are mg/L or mcg/ml. Recently, some laboratories have begun reporting APAP units in mg/dl. This can result in missing a TOXIC APAP concentration.

For example, an APAP concentration of 50 mg/dL is equivalent to an APAP concentration of 500 mg/L, which is extremely toxic.

What can you do to help prevent an error:

- Check the units.
- Check the reference range. If the reference range reports a level  $< 2$ , then you know the units are in mg/dL.

\*If this change has happened at your institution, talk with your lab director to see if this can be changed. This is a patient safety concern!





## Physostigmine is back! Kind of....

Physostigmine, an antidote for anticholinergic poisoning, is an effective agent to reverse anticholinergic delirium in a subset of patients. Physostigmine has a bit of a checkered past. It was first used as an antidote in the mid-1800s to treat severe atropine poisoning. Over time, its use has varied. While it successfully reverses the delirium from antimuscarinic agents, serious adverse events are reported. In patients with tricyclic antidepressant poisoning, asystole occurred after the administration of physostigmine. Because of the potential risk, physostigmine is recommended in patients with anticholinergic symptoms without evidence of QRS prolongation.

Physostigmine experienced a national shortage in late 2022. Despite many of us waiting anxiously, it never came back.

[The FDA announced on October 31, 2023, that a temporary importation of physostigmine was available.](#) So, what does that mean? Your hospital pharmacy may have decided to order physostigmine from the one manufacturer in Germany. Check with your pharmacy to see if they have physostigmine.

If you believe you have a patient who might benefit from physostigmine therapy, please contact the poison center to discuss further.

## Why Call Our Poison Center?

Watch this short video & see how WE help YOU!



## National Poison Prevention Week: March 17th-23rd

Find out how you can help support National Poison Prevention Week with [our online toolkit!](#)

# UPSTATE NEW YORK POISON CENTER



## #NPPW24

[Learn More](#)

July 17 **UPCOMING EVENTS**

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## Toxicology ECHO Sessions

**In collaboration with Upstate Medical University, we are hosting Toxicology ECHO sessions on various topics.**

NEXT ECHO: March 12th, 2024, at 12:00 p.m. on "Taking Care of Patients with Opioid Use Disorder."

[Learn More](#)

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