

- ### Why Abuse Non-Opioid Prescription Drugs?
- Potentiate effects of opioids
 - “Smooth out” effects of other drugs
 - Substitution or replacement of drug of choice
 - Treat early withdrawal

National Poison Data System, 2006-2014

Generic Code	Intentional Abuse
Benzodiazepines	51275
Dextromethorphan	18182
Amphetamines	13833
Carisoprodol	8633
Atypical Antipsychotics	8556
Other Sedative/Hypnotic/Anxiety/Anti-Psychotic	8150
Diphenhydramine	5927
Other SSRI	5185
Other Antihistamines	5155
Other Anticonvulsant (Excluding Barbiturates)	3931
Methylphenidate	3662
Other Antidepressant	3173
Cyclobenzaprine	2948
Gabapentin	1373
Clonidine	1159

Loperamide

- Antidiarrheal, Rx and OTC
- Intestinal mu agonist
- Poor systemic absorption due to p-glycoprotein
 - BUT often co-used with inhibitors
- Abused alone or in combination with opioids

TOXICOLOGY/CASE REPORT

Loperamide Abuse Associated With Cardiac Dysrhythmia and Death



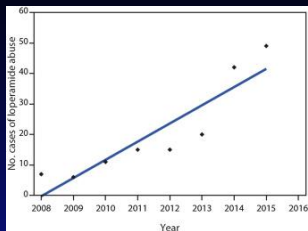
William Eggleston, PharmD¹; Kenneth H. Clark, MD; Jeanna M. Marraffa, PharmD, DABAT
¹Corresponding Author. E-mail: williamd.eggleston@gmail.com, Twitter: @WillieDoesTox.

Loperamide is an over-the-counter antidiarrheal with μ -opioid agonist activity. Central nervous system opioid effects are not observed after therapeutic oral dosing because of poor bioavailability and minimal central nervous system penetration. However, central nervous system opioid effects do occur after supratherapeutic oral doses. Recently, oral loperamide abuse as an opioid substitute has been increasing among patients attempting to self-treat their opioid addiction. Ventricular dysrhythmias and prolongation of the QRS duration and QTc interval have been reported after oral loperamide abuse. We describe 2 fatalities in the setting of significantly elevated loperamide concentrations. [Ann Emerg Med. 2017;69:83-86.]

Loperamide

- National Poison Data System, 2010-2017
 - No significant change in rate of exposures, but behavior and reasons are changing
 - Increased proportion of intentional abuse cases
 - 8% → 34%

Loperamide Abuse



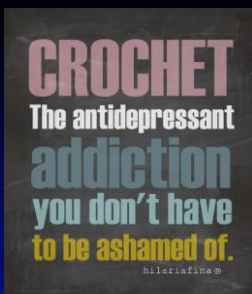
Miller H et al. JGIM 2017; 32(2): 245-250

16



17

17



18

18

Antidepressants

- Reports of abuse of all classes
- May have higher rates with SNRI
 - Stimulant effects due to norepinephrine reuptake inhibition
 - When used with opioids, pharmaceutical "speedball" effect
- Adverse effects include seizures and dysrhythmias

Bupropion

National Poison Data System, 2012-2017

- Increased single substance exposures compared to total mentions
 - Used as a primary drug
- Increased proportion of intentional exposures
- Markedly increased use in teenage population

DR REHAB
Addiction Hotline
866.578.7471

DR DETOX TO REHAB

Antipsychotic

Antipsychotics are a class of drugs used to treat mental health conditions such as schizophrenia, bipolar disorder, and major depressive disorder.

Some side effects may include: drowsiness, muscle rigidity or tremor, and weight gain.

For children, antipsychotic drugs have been associated with an increased risk of sudden death, which has been associated with heart failure.

The most serious problem is that 1 in 10 people die while taking antipsychotics. Always take as directed and follow your doctor's instructions.

866.578.7471 • DETOXTOREHAB.COM

Antipsychotics

- Atypical antipsychotics commonly abused both alone and in combination with other drugs
- Especially popular in incarcerated population
- Quetiapine often drug of choice

22

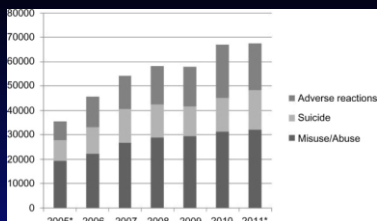
Antipsychotic Abuse

- 429 patients from detox and rehab units
- 73 (17%) abuse atypical antipsychotics with:
 - Alcohol, opioids, cocaine/crack, methamphetamine, cannabis
- Quetiapine most common (84.9%)
 - Olanzapine (17.8%)
 - Risperidone (24.7%)
 - Aripiprazole (20.5%)
 - Ziprasidone (8.1%)
 - Asenapine (2.9%)
- Goals: "getting mellow", "slowing down", or enhancing effects of other drugs

American Academy of Addiction Psychiatry (AAAP) 24th Annual Meeting & Symposium


23

Quetiapine DAWN ED visits



Mattson et al. Subst Abuse. 2015 May 24;9:39-46. doi: 10.4137/SART.S22233. eCollection 2015.

24



XANAX
ADDICTION AND TREATMENT

Xanax is a brand of the drug alprazolam, which is a sedative mainly used to treat anxiety and panic disorders. It belongs to the group of drugs called benzodiazepines.

TreehouseRehab.org

• 25

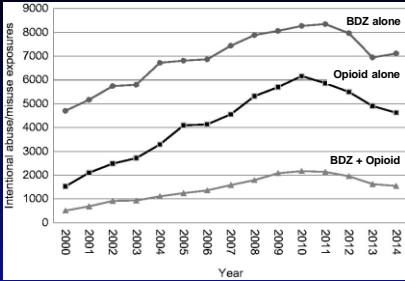
Benzodiazepines

- GABA-A agonists
- Single agent and polysubstance exposures
- CNS depression
 - Synergistic with EtOH and opioids
- Respiratory depression rare with *isolated* oral exposure BUT also synergistic

• 26

Benzodiazepines / Opioids

National Poison Data System, 2000-2014



Year	BDZ alone	Opioid alone	BDZ + Opioid
2000	4500	1500	500
2001	5500	2000	800
2002	6000	2500	1000
2003	6500	3000	1200
2004	7000	4000	1500
2005	7000	4000	1500
2006	7000	4500	1800
2007	7500	5000	2000
2008	8000	5500	2200
2009	8000	6000	2500
2010	8500	6500	2800
2011	8500	6000	2500
2012	7500	5500	2200
2013	7000	5000	2000
2014	7500	4500	1800

• Calcaterra S et al, <https://doi.org/10.1080/15563650.2018.1457792> • 27

Cyclobenzaprine

- Few studies of misuse/abuse
- Anticholinergic effects
- Structural similarity to tricyclic antidepressants
- Synergistic CNS and respiratory depression with opioids
- Increasing rates in poison centers

34

Finding the perfect treatment is only one phone call away!



What's New

Carisoprodol Abuse

EDITED BY Amanda Lueder, BS

REVIEWED BY Patrick Costello, MD, MAC



Table of Contents

- Carisoprodol Abuse: Key Facts
- Signs and Symptoms of Abuse
- Effects of Abuse
- Abuse Treatment
- Teen Carisoprodol Abuse
- Additional Resources

35

Summary

- Nonopioid pharmaceutical drug abuse is increasing
- Many likely to be co-abused with opioids
- Synergistic CNS and respiratory depression most common interaction
- Need methods for surveillance and early warning

36

Questions?

Richard.Dart@mpdc.org

• 37
