The Explosion of a New Designer Drug – Flakka
Implications for Practice

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Introduction

- Synthetic cathinones have become popular drugs of abuse.
- A second generation cathinone (x-pyrrolidinopentiophenone, x-PVP; flakka, $5 insanity, or gravel) is an extremely potent stimulant.
- Synthetic cathinones also include bath salts and ecstasy.
- The largest producer of Flakka is China followed by Pakistan and India.

Disclosures

The speakers have no conflicts of interest to disclose the information.

Synthetic Cathinone History

- Known as bath salts
- Human made drugs chemically related to cathinone
- Cathinone is a stimulant found in the khat plant.

Learning Objectives

1. Define the new increase use of synthetic designer drugs and its implication for healthcare professionals.
2. Identify signs and symptoms of Flakka use.
3. Utilize the information about Flakka to ensure the safety of patients and healthcare workers and proper management of patients who have ingested Flakka.

Synthetic Cathinone

- Khat is a shrub grown in East Africa and Arabian Peninsula (Kalix & Braenden, 1985)
- Chewing of khat leaves dates back many centuries, and continues in some countries.
- Fresh leaves are used for chewing because the cathinone breaks down after leaves are harvested.
- This decomposition may be the reason why chewing of the leaves is limited to specific areas (Caprilli, 2013)
Synthetic Cathinone

Flakka is the street name for Synthetic cathinone \(\text{x-pyrrolidinopentiophenone (x-PVP)}\).

This drug was developed by Boehringer Ingelheim as a CNS stimulant and pressor agent in the 60’s (Katselou, et al. 2016)

Cathinones are structurally related to amphetamines and have the ability to modulate serotonin (Kalix, 1992).

Origins of Flakka

- Right now, the largest producer of Flakka is China followed by Pakistan and India.
- It may be purchased at head shops, gas stations, convenient stores and various Internet websites.

How is Flakka used?

- Although the drug is labeled "not for human consumption", this agent may be ingested, smoked, vaped, or injected.
- An added risk is the unknown substances that are mixed with Flakka, such as cocaine, heroin, and methamphetamine.

Common Names of Synthetic Cathinones

- Bloom
- Cloud Nine
- Vanilla Sky
- Flakka
- Scarface

Origins of Flakka

- Often clandestine chemists produce a type of synthetic cathinones (bath salts) which are made illegally.
- However, the producers of these agents change the chemical structure slightly so a new drug is made that technically is not illegal.
Physiological Effects of Flakka

- One of the side effects with dangerous consequences is that Flakka has been known to cause hyperthermia.
- Temperatures up to 106°F
- Clients may remove their clothes and display naked delusional like behavior (Califano, 2015).

Physiological Effects of Flakka

- Dehydration
- Rhabdomyolysis
- Renal failure
- Seizures
- Death

Physiological Effects of Flakka

- When clients are experiencing “excited delirium” they demonstrate incredible strength because of the adrenaline surge.
- Clients may be aggressive while under the influence of Flakka and could be dangerous to themselves and others.
- When clients become extremely agitated, this may lead to “excited delirium syndrome” which constitutes a medical emergency.

Physiological Effects of Flakka

- It can take up to four to five police officers to subdue one person high on FLAKKA.
- Almost always cause psychosis.
- Tasers often didn’t work.
- Talking down doesn’t work.
- Officers stated force was the only way to get the users to the hospital. (Frank, 2014)

Epidemiology

- Recent data shows that men show up the ED 4 times more than females.
- Common among the 20-50 year olds.
- Broward county is the epicenter for FLAKKA ED visits. (Atrubin, Bowden, & Hamilton, 2015)
- Also seen in Texas and Ohio.
- It isn’t illegal in many states and comes under so many names that it is hard for the user to know which drug they are using.
- Difficult for law enforcement and health care professionals to stay ahead of the synthetic drug market.
- Has become popular because of the price in recent times. (James, 2015)
Epidemiology

- Can buy a kilogram of Flakka for $1500 online and delivered to your door
- Worth $50,000 on the street
- China was main source

Chinese officials agreed to ban flakka production in late 2015, which has caused a recent reprieve.

(Worth, 2016)

Health Related Complications

- Arrhythmias
- Hypothermia
- Seizures
- Metabolic complications
- Physical harm to self and others
- Addiction

Treatment Strategies

- Laboratory testing for synthetic cathinone’s is of limited value during the acute management phase.
- Synthetic cathinone’s can be identified in blood, urine, and other bodily fluids using gas chromatography with mass spectrometry (GC-MS).
- These tests are rather expensive and often the effects of the drug has diminished before the test results are available.
- No specific antidote exists for cathinone exposure. (Kavoussi, Papoutisis, Nikolaou, Spiliopoulou & Athanaselis, 2016).

Patient and Staff Safety

- As stated before, call law enforcement
- Place patient in a room with very limited stimulation.
- Make sure there is nothing the patient can use to hurt themselves or others.
- Have a alert system so all are aware of the possibly dangerous situation.
- Make sure to remove people around the patient.

Patient and Staff Safety

- Suicide precautions
- Make sure to be ready for multi-organ failure and hyperthermia treatments.
- Be prepared to give benzodiazepines for short-term management and anti-psychotics after autonomic symptoms have been resolved.

(Worth, 2013)
Treatment Strategies

- If the client is violent or aggressive, restraints and involvement of law enforcement may be necessary.
- Clients often have superhuman strength.
- Want to try to avoid struggling, which may cause dehydration.
- Management must be based on the client symptoms.

Implications for Healthcare Providers

- Safety of patient, staff, and the public
- Necessary to know that many people may be involved to restrain the person and calling law enforcement is paramount
- Difficult to screen for because there are many formulations and it isn’t routinely screened for in EDs
- If FLAKKA use is suspected, ensure safety and test for confirmation
- Measures to lower body temperature is also very important

Patient and Staff Safety

Main priority

Be prepared for the unexpected

Restrain with caution

Case Report

A 40 year old male presents to the ED at midnight. Patient runs into the hospital screaming, sweating, and starts taking off his clothes. When asked to calm down and explain what is going on, he becomes combative and states, “They are after me, I need to find safety.” He becomes aggressive and the ED staff are unable to take vital signs on him.

Case Report

- Police are called and it takes 4 police officers to subdue him.
- His temperature is 104.9, heart rate is 130, blood pressure is 160/100. Pupils are constricted, incoherent speech.
- What should we do now?
Practice Pearls

- Don't try to subdue the patient yourself.
- Call the police.
- Run a drug screen for flakka when possible.
- Ensure your safety and the patients' safety around you.
- Ensure the victim's safety.
- Tasers don't work. [Frank, 2016]
- Psychosis is often present. [Frank, 2016]

Summary

- New designer drugs are continuously hitting the market.
- Healthcare professionals must play a key role in the prevention, education and detection and removal of these dangerous agents in order to avoid abuse and serious side effects including death.
- Patient and staff safety is paramount!

References


