

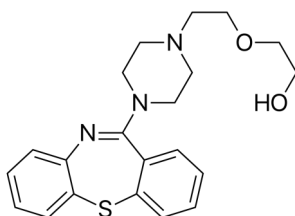


Toxic Adulterant Alert

Substance abuse treatment providers, clinicians, outreach workers, and public health clinics should be aware of the following information. Quetiapine (Seroquel®) has been identified in the illicit drug supply as a cutting agent for fentanyl, cocaine, and heroin. Quetiapine as an adulterant has been reported in Uruguay from 2019 to 2022 and Colombia in 2021 and 2022. Quetiapine has also been identified in seized drug samples collected from West Virginia (6), Indiana (5), and Ohio (1). Use of quetiapine to enhance the effects of opioids has been reported. Fentanyl and quetiapine co-positivity in toxicology samples collected in the United States has increased from 2018 to Q1 2023. Quetiapine may increase the risk of fatal drug poisoning by enhancing sedation, respiratory depression, hypotension, and QTc prolongation.

Background: Quetiapine is an atypical antipsychotic agent that is FDA approved for the treatment of schizophrenia, acute manic episodes, and major depressive disorder. The drug also has several off-label indications, such as generalized anxiety disorder, insomnia, and chronic PTSD. Daily doses in adults usually range from 150 to 800 mg, but higher doses are utilized with QT interval monitoring. Somnolence, dizziness, and orthostatic hypotension are common adverse effects. QTc interval prolongation is associated with torsade de pointes, a potentially lethal dysrhythmia.

Quetiapine



Recommendations for Clinicians

- Be aware that illicit drugs such as fentanyl, cocaine, and heroin may contain **quetiapine**, which can complicate the clinical presentation.
- Be familiar with the signs and symptoms associated with **quetiapine** toxicity.
- Know the range of toxicity of **quetiapine** overdose is highly variable and influenced by drug co-ingestions and underlying medical illnesses such as long QTc.

Indicators of Toxicity

- Sedation particularly when combined with alcohol, benzodiazepines, and opioids.
- Dizziness
- Delirium/confusion
- Orthostatic hypotension
- Cardiac dysrhythmia
- QTc prolongation
- Hyperglycemia
- Respiratory depression with concurrent severe underlying disease or taken in overdose amounts
- Rare effects: seizures including late onset and neuroleptic malignant syndrome

Recommendations for MEs & Coroners

- Consider testing for quetiapine when analysis of seized drug evidence shows its presence and/or the case is suspicious for overdose with fentanyl, cocaine, or heroin.

Recommendations for Forensic and Clinical Laboratories

- Consider testing for **quetiapine** when case history supports quetiapine was used as an adulterating agent.
- Consider laboratory analysis of seized drug samples taken from suspected drug overdose investigations.
- Share data on adulterants in drug seizures in your jurisdiction with local health departments, medical examiners and coroners.

Health Impacts:

Quetiapine, like the other atypical antipsychotics, carries an extremely low risk of dystonic reaction and extrapyramidal effects. This safer profile makes this class a more attractive treatment option than older antipsychotics. Misuse of pharmaceuticals occurs frequently with medications that produce euphoria or other desirable effects such as relaxation or alertness. As such, quetiapine can be used to enhance the effects of illicit drugs and this use can contribute to an adverse or lethal outcome.

Analysis of seized drug exhibits (n=918) showed that quetiapine was identified as an adulterant in 11 samples (1.2%); one sample contained only quetiapine (Table 1). Most notably, toxicology data show an upward trend of quetiapine and fentanyl co-positivity. Serious adverse health effects and deaths due to prescribed quetiapine have been reported. *In utero* drug exposure data obtained by analysis of umbilical cord tissue shows that adulterants (e.g., levamisole) and drugs such as quetiapine are found in combination with each other in cocaine and opiate subgroups. Toxicology testing, by itself, will not determine if the quetiapine was legitimately prescribed for therapeutic use or if its presence is due to illicit drug adulteration. As such, when quetiapine is identified through analytical testing a careful review of a patient's medical record is warranted. Testing of seized drug evidence is another option although it may not be available in all circumstances.



Health Impacts Continued:

<p>Table 1: Drug and adulterant combinations in 11 seized drug testing samples from the United States that contained quetiapine.</p>	<p>Cocaine Hydroxyzine Mirtazapine Phenacetin Quetiapine</p>	<p>Diphenhydramine Fentanyl Quetiapine Quinidine/Quinine</p>	<p>Diphenhydramine Fentanyl Noscapine Quetiapine Quinidine/Quinine</p>	<p>3/4-chloro PCP 6-MAM Clonazolam Fentanyl Heroin Metonitazene Phenethyl 4-ANPP Quetiapine Quinidine/Quinine</p>	<p>Cocaine Diphenhydramine Fentanyl Norfentanyl Phenethyl 4-ANPP Quetiapine Xylazine</p>
<p>Cocaine Fentanyl Phenethyl 4-ANPP Quetiapine Trazodone Xylazine</p>	<p>Acetaminophen Buprenorphine Cocaine Fentanyl Gabapentin Phenethyl 4-ANPP Quetiapine Trazodone Xylazine</p>	<p>Fentanyl Norfentanyl Phenethyl 4-ANPP Quetiapine Xylazine</p>	<p>Fentanyl Phenethyl 4-ANPP Norfentanyl Quetiapine Xylazine</p>	<p>6-MAM Acetaminophen Cocaine Diphenhydramine Fentanyl Ketamine Melatonin Norfentanyl Quetiapine Quinidine/Quinine</p>	<p>4-ANPP 6-MAM Fentanyl Heroin Morphine Noscapine Papaverine Quetiapine</p>

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