Clinical Update: April 2022

NOVEL PSYCHOACTIVE SUBSTANCES ADDED TO ORAL FLUID TESTING MENU

In December, Aegis' oral fluid testing menu was expanded to include testing for over 90 novel psychoactive substances (NPS), an option previously available only in the urine testing menu. The new additions to the test menu included designer opioids, designer benzodiazepines, synthetic cannabinoids, synthetic stimulants, and hallucinogens/dissociatives, along with xylazine, tianeptine and phenibut. A summary of drugs detected by class in oral fluid is included below.

Designer Opioids

Designer opioids play a role in overdose deaths, with the most commonly observed drug being illicitly manufactured fentanyl (IMF) and analogs. IMF is analytically similar to prescription fentanyl, but is typically created utilizing different methods, which introduces opportunities for contamination or adulteration. To date, fluorofentanyl is the most detected fentalog, followed by chlorofentanyl, benzyl fentanyl and acryl fentanyl. While IMF and fentalogs have been most prevalent in testing, newer classes of designer opioids are emerging in the global illicit drug supply. One example are the benzimidazoles, or nitazenes, of which Aegis has detected metonitazene and protonitazene in oral fluid testing. A report from the Washington Post described isotonitazene and protonitazene detection in the District of Columbia drug supply.[1]

Designer Benzodiazepines

The first "designer" benzodiazepines widely reported were phenazepam and etizolam, which are/have been legally marketed by pharmaceutical companies in some countries. As countries began to regulate and schedule phenazepam and etizolam as controlled substances, clandestine laboratories began producing and distributing newer designer benzodiazepines such as diclazepam, flubromazepam, pyrazolam, clonazolam, deschloroetizolam, flubromazolam, nifoxipam and meclonazepam; others have continued to emerge. To date, Aegis has detected clonazolam most frequently in oral fluid testing, followed by bromazolam, etizolam and flubromazepam.

Synthetic Cannabinoids

Synthetic cannabinoid receptor agonists (SCRAs) are structurally related to marijuana but may have very different effects. When SCRAs first appeared in the early 2000s, they were sold as legal replacements for cannabis. Since then, they have gained a reputation for having powerful intoxicating effects. Typically, the synthetic material is sprayed onto herbal plant material and smoked. In the spring of 2018, >470 cases of hypocoagulopathy and bleeding were associated with synthetic cannabinoids that were found laced with brodifacoum, a very long-acting anticoagulant commonly used in rat poison. There were at least eight fatalities.[2,3] In oral fluid testing thus far, Aegis has detected 5F-MDMB-PICA and MDMB-4en-PINACA.

Synthetic Stimulants

The most detected class of synthetic stimulants is the synthetic cathinones. They are derivatives of the naturally occurring compound cathinone, which is the primary psychoactive component of khat. They are "euphoric stimulants," meaning they have a short acting duration of physical and psychological effects similar to stimulants like amphetamine. They are often sold as replacements when MDMA, cocaine, heroin, amphetamine, or other stimulants are in short supply.[4] Eutylone and pentylone have been detected in oral fluid samples submitted to date.

Other NPS Classes

In addition to the classes mentioned above, Aegis is pleased to offer testing for other NPS classes, including hallucinogens/dissociatives, along with xylazine, phenibut, and tianeptine. Xylazine is approved as a veterinary tranquilizer and is often identified in overdose death cases along with heroin or fentanyl. Aegis has identified xylazine

and phenibut in oral fluid samples. Phenibut is sold as on over-the-counter supplement in the U.S. and is used for its benzodiazepine-like effects.

Aegis's NPS offerings are developed to allow providers the ability to more completely identify substance use and afford them the opportunity to provide more informed care and minimize the potential for these unregulated substances to contribute to adverse events, including overdose deaths. This timely testing expansion increases the utility of oral fluid as an alternative to urine by allowing testing for NPS, which go undetected in traditional definitive testing.

NOTICE: The information above is intended as a resource for health care providers. Providers should use their independent medical judgment based on the clinical needs of the patient when making determinations of who to test, what medications to test, testing frequency, and the type of testing to conduct.

References:

1. Jamison P. New opioids, more powerful than fentanyl, are discovered in D.C. amid deadly wave of overdoses. Washington Post. November 29, 2021. Accessed December 3, 2021. https://www.washingtonpost.com/local/dc-politics/new-opioids-more-powerful-than-fentanyl-are-discovered-in-dc-amid-deadly-wave-of-overdoses/2021/11/29/680afb2c-4d43-11ec-94ad-bd85017d58dc_story.html

2. CDC COCA Clinical Action: Outbreak Alert Update: Potential life-threatening vitamin K-dependent antagonist coagulopathy associated with synthetic cannabinoids use. 23 April 2018. https://emergency.cdc.gov/newsletters/coca/042318.html.

3. FDA: Statement from FDA warning about significant health risks of contaminated illegal synthetic cannabinoid products that are being encountered by FDA. 19 July 2018. https://www.fda.gov/news-events/press-announcements/statement-fda-warning-about-significant-health-risks-contaminated-illegal-synthetic-cannabinoid

4. European Monitoring Centre for Drugs and Drug Addiction. EU Drug Markets Report 2019 https://www.emcdda.europa.eu/system/files/publications/12078/20192630_TD0319332ENN_PDF.pdf