

A concerning trend of synthetic cathinone abuse in Hong Kong

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To the Editor—Synthetic cathinones constitute a class of new psychoactive substances that are derivatives of cathinone, a naturally occurring compound in the khat plant with stimulant properties.¹ Historically, our laboratory has encountered a limited number of synthetic cathinone cases. From 2009 to 2017, we identified only seven instances.² Subsequently, an additional six cases were recorded between 2018 and 2022 (unpublished data, 2022). However, in the first half of 2023 alone, we have identified eight additional cases, seven of which involved intoxication with *N,N*-dimethylpentylone.

Since its identification in toxicology samples in the United States in 2021, the abuse of *N,N*-dimethylpentylone has become increasingly prevalent.³ This substance has also been detected in New Zealand and Spain through on-site pill testing, analysis of seized materials, and wastewater-based epidemiological investigations.⁴ The use and abuse of synthetic cathinones can result in a sympathomimetic toxidrome characterised by agitation, tachycardia, hyperthermia, convulsions, rhabdomyolysis, cardiovascular collapse, and ventricular arrhythmias. *N,N*-dimethylpentylone has been identified in at least 18 post-mortem forensic toxicology cases.⁵

N,N-dimethylpentylone has been sold as 3,4-methylenedioxymethamphetamine (MDMA; commonly known as ecstasy). In our experience, co-ingestion of *N,N*-dimethylpentylone and MDMA is common. Considering the potential morbidity and mortality associated with *N,N*-dimethylpentylone, the medical profession must remain vigilant in monitoring and describing the toxicological profile of the compound. Importantly, traditional toxicology analyses are often unable to detect new psychoactive substances; specific detection methods are required. When clinicians encounter a suspicious clinical history or unfamiliar/unusually severe clinical toxidromes, they are encouraged to utilise the services provided by our laboratory, including target analyses by liquid chromatography–tandem mass

spectrometry.

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References

- Paillet-Loilier M, Cesbron A, Le Boisselier R, Bourguine J, Debruyne D. Emerging drugs of abuse: current perspectives on substituted cathinones. *Subst Abuse Rehabil* 2014;5:37-52.
- Tang MH, Hung LY, Lai CK, Ching CK, Mak TW. 9-year review of new psychoactive substance use in Hong Kong: a clinical laboratory perspective. *HK J Emerg Med* 2019;26:179-85.
- Walton S, Fogarty M, Papsun D, Lamb M, Logan B, Krotulski A. *N,N*-dimethylpentylone—an emerging NPS stimulant of concern in the United States. *Toxicol Anal et Clin* 2022;34:S67-8.
- Rousis N, Bade R, Romero-Sánchez I, et al. Festivals following the easing of COVID-19 restrictions: prevalence of new psychoactive substances and illicit drugs. *Environ Int* 2023;178:108075.
- Fogarty ME, Krotulski AJ, Papsun DM, et al. *N,N*-dimethylpentylone (dipentylone)—a new synthetic cathinone identified in a postmortem forensic toxicology case series. *J Anal Toxicol* 2023;47:753-61.