Acute toxicity related to psychoactive substance abuse and the impact of emergency department interventions on drug-related reattendance (BDF190053)

Executive summary

Methamphetamine, cocaine and cannabis are popular recreational drugs in Hong Kong. However, there is a lack of local studies on the trends, patterns, harms and burden of their abuse in the emergency department (ED) setting.

This study was conducted to characterise the trends and patterns of acute toxicity related to methamphetamine, cocaine and cannabis in drug abusers presenting to EDs in Hong Kong. In particular, we looked at the factors that were associated with a poor clinical outcome and drug-related ED reattendance after discharge from the hospital.

We reviewed 1 629 episodes of acute toxicity related to the recreational use of methamphetamine, cocaine, cannabis and novel psychoactive substances (NPSs) that involved 1 348 patients reported to the Hong Kong Poison Information Centre (HKPIC) from 2010 to 2019. Overall, a rising trend of acute toxicity related to the misuse of these drugs was not observed. Polysubstance abuse predominated, with methamphetamine, cocaine and cannabis involved in 1 225, 328 and 172 episodes, respectively. Nineteen NPSs were identified in 23 episodes.

At the time of ED presentation, many patients had a history of drug abuse and drug-induced psychosis, but only a few had received detoxification, social worker and NGO anti-drug services. Most patients were triaged as urgent in the ED with prominently neurological and cardiovascular symptoms. Many of them had a low potassium level, breakdown of muscle tissue and kidney damage. A signficant proportion had disorganised behaviours, including extraordinary self-harm acts such as jumping from a building and self-amputation of genitalia, as well as family violence. The majority were treated and discharged from the ED. Psychiatric ward admission, urgent psychiatric consultation and referral to psychiatric services upon discharge were more frequently needed for methamphetamine abusers.

In total, 18 patients died of acute drug toxicity and 96 required intensive care. Patients with a triage temperature > 39°C, a heart rate >120 beats per minute, profused sweating, agitation, sluggish or non-reactive pupils, a triage ranking of a higher acuity, concurrent use of cough mixture/pills or other medications and associated injury were more likely to develop severe complications. Predictors of poor outcome varied in episodes that involved methamphetamine, cocaine and cannabis.

Over half of the patients reattended ED for drug-related problems, especially among the methamphetamine abusers, and over half reattended with psychotic symptoms. Methamphetamine abuse (as compared with cocaine and cannabis abuse) and the need for urgent psychiatric consultation were significantly associated with a higher risk of ED reattendance, whereas a major effect of acute toxicity was associated with a lower risk of future drug-related ED revisits.

This study extended our current understanding of methamphetamine, cocaine and cannabis abuse in Hong Kong. Methamphetamine remains a major public health burden and threat to

physical and mental health. In addition to our current anti-drug work to prevent the abuse of other prevalent drugs such as opioids and ketamine, more resources should continue to be channelled to educate young people about the harms of methamphetamine and to prevent its use. Although most cases of acute methamphetamine, cocaine and cannabis toxicity can be managed in the ED, end-organ toxicities are frequently encountered and their risk factors should be actively looked for early in the clinical course. While the optimal ED care model for methamphetamine, cocaine and cannabis drug abusers remains unknown, there is a need to enhance collaboration with other agencies providing anti-drug services in order to deliver the most appropriate services to address the needs of the patients while they are still in hospital and to ensure maximum engagement and assistance so as to motivate behavioural change, with the aim to help the abusers quit drugs.