Amphetamine-like stimulants hit the headlines

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Drug abuse is a worldwide health issue and a global cause of premature mortality and morbidity. A substantial proportion of young adults have used an illicit drug at some time in their lives. In 2011, the UN Office on Drugs and Crime reported that 149–271 million people aged 15–64 were estimated to have used an illicit drug at least once in 2009. Of these, between 14 million and 56 million were estimated to have used an amphetamine-type stimulant (corresponding to 0.3–1.3 % of the population) (UNODC, World Drug Report 2011). Therefore, I am very happy to see a very nice well-written and well comprehensive review entitled “Toxicity of Amphetamine: An Update” contributed by Carvalho et al. (2012).

Stimulants, including amphetamine derivatives, are among the most widely abused illegal substances. Over the last five decades, their popularity has paralleled with cultural literary, cinematographic and musical movements. In fact, there are indicators that both consumption and manufacture of amphetamines have increased. Data from surveys of college students also show that illicit use of stimulants is still growing (Ciccarone 2011).

The detrimental health consequences of stimulant abuse are accompanied by relevant economic and societal costs. Mental disorders, road-traffic accidents, suicides and violence seem to be increased in amphetamine users. However, causal associations remain unclear due to several confounding variables and poor quantification of risk. According to a survey in 2006, one in three of all drug-related

emergency visits in the United States involved cocaine. Methamphetamine and amphetamine were associated with 5 and 2 % of these visits, respectively, representing a total number of 107,575 visits. MDMA alone accounted for 16,749 visits (Substance Abuse and Mental Health Services Administration 2008).

Acute clinical features include intoxication and overdose. Chronic use is associated with psychological and behavioral disturbances. Cognitive impairment and psychotic symptoms such as paranoia, delusions and hallucinations may persist for years following abstinence from use. Bloodborne bacterial and viral infections are also worrisome due to risks of unsafe injection (Schep et al. 2011; Degenhardt and Hall 2012).

The high prevalence of stimulant abuse and its harmful consequences make the screening, diagnosis and treatment of persons with stimulant abuse a top concern for primary care providers. Having a working knowledge of use patterns, clinical features and target-organ effects is therefore essential.

The review “Toxicity of amphetamines: an update”, published in the current issue of Archives of Toxicology (Carvalho et al. 2012), addresses the pharmacokinetics; toxicity mechanisms; target-organ toxicity; individual predisposition (genetic polymorphisms); and relevant drug interactions of the classical amphetamines: amphetamine itself, as well as methamphetamine and 3,4-methylenedioxymethamphetamine (MDMA, ecstasy). All issues covered are of utmost importance for increased awareness of danger and for management and treatment of the intoxicated patients.

Recently, a new class of “designer drugs” has emerged on the drug market, known as “legal highs” or “herbal highs” “bath salt”. They include a wide range of products, from natural plant-originated substances to synthetic

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compounds. These drugs mimic the psychoactive effects of illicit drugs of abuse but are legal to sell, possess and use and can be purchased both online and from street retailers. As the mentioned review refers, there is the misconception that these compounds are “safe” for not being controlled, but the literature is being overflowed with numerous case reports of toxicity similar to those seen with classical amphetamines. Intelligent responses to overcome drug abuse problems rely on evidence-informed drug policies that are much needed especially for these newly emerging drugs for which information is much scarcer (Degenhardt and Hall 2012). Hopefully, the toxicological data now presented in this review may be useful to improvident abusers by showing the possible toxicological outcomes and help health professionals in the never-ending task of risk management. I strongly recommended for anyone interested in the field of toxicology of psychostimulants.

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