



K34 Illicit Drugs Surveillance System and Ketamine-Related Fatalities in Taiwan, 2001-2008

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After attending this presentation, attendees will learn about the illicit drug surveillance system in Taiwan and target new trend of the emerging illicit drug ketamine.

This presentation will impact the forensic science community by building on the achievements of the government's tough on drugs initiative and measuring the emerging illicit ketamine by the illicit drug surveillance system.

Ketamine, a dissociative anesthetic agent that has acquired a unique, unpleasant emergence reaction with a cardiovascular stimulant properties since synthesized in 1961 by Calvin Stevens. Recent development of pharmacology and clinical anesthesia evolves concepts of its mechanism of action and advantage of alternative routes of administration, may arise the attention of illicit drug abusers. Epidemiological studies accompanied with illicit drugs surveillance system by using illicit-drug monitor system of illicit drug-related fatalities reveal heroin (35.2%), methamphetamine (19.2%), zolipidem (16.9%), flunitrazepam (15.7%) and ketamine (13.8%) are top five in Taiwan in 2008, and ketamine-related fatalities are only three cases in 2001 with sequential increased from 2002 (11 cases), 2003 (10 cases), 2004 (9 cases), 2005 (11 cases), 2006 (18 cases), 2007 (16 cases) and to 36 cases in 2008. Total 114 ketamine-related fatalities with 75 male (65.8%) and 39 female (34.2%) of 14391 autopsy cases during 2001-2008 are discovered. The manners of deaths of ketamine-related fatalities of accidental, homicidal, suicidal and natural cause of deaths are 57 cases (50.0%), 27 cases (23.7%), 14 cases (12.3%) and 5 cases (4.4%), respectively. Average age of ketamine-related fatalities is 27.3 years old with peak around 15-24 years old range. Increasing the multi- drugs abuse with flunitrazepam, MDMA and methamphetamine can either reduce the unpleasant or increase the risk of ketamine-related toxicity is hypothesized. The total 114 cases with incidence of ketamine taken concomitantly, was 4.4% (5 cases) for flunitrazepam, 7.0% (8 cases) for methamphetamine, and 27.2% (31 cases) for MDMA. The ketamine concentrations (mean±Std. deviation) in blood, urine and gastric content were 2.40 ± 4.84 , 3.56 ± 5.25 and 29.34 ± 70.43 $\mu\text{g/mL}$. The surveillance system of forensic fatalities with illicit drug monitor system can identify the emerging trend of illicit drug. Ketamine is one of the new surveillance drugs of emerging trends since 2001 that the government will continue to monitor as part of their "anti-drug" efforts.

Ketamine, Illicit Drug, Drug Abuse