K13 Case Report: Death Due to Snorting of Crushed Sustained-Release Morphine Tablets

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After attending this presentation, attendees will learn about potentially fatal low blood morphine concentrations that are not heroin-related can exist, especially if the route of administration and drug formulation administered are unusual.

This presentation will impact the forensic community and/or humanity by providing a case report of a death due to snorting of a sustained-release morphine formulation, especially one where heroin is not a potential confound. This case report will therefore address this specific absence in the literature.

MS-Contin® is a sustained-release morphine formulation that is administered orally to treat moderate to severe pain. MS-Contin® is available in tablets containing 15, 30, 60, 100 and 200 mg of morphine sulfate. Within four hours of the administration of 30 or 60 mg tablets of MS-Contin®, the reported peak plasma morphine concentrations are 10 and 30 ng/mL, respectively. Therapeutic plasma morphine concentrations persist for about 12 hours thereafter.

This report documents a morphine-related death in a male prisoner known to be an intravenous drug user who reportedly snorted three crushed 100 mg tablets of MS-Contin® in his jail cell. The prisoner died 8 hours later. Prior to death this individual exhibited symptoms of profound sedation and laboured breathing that progressed to apnea. At autopsy the pathologist observed pulmonary edema. In addition, two condoms were found in his rectum, one containing three 100 mg tablets of MS-Contin®, the other containing plant material suspected of being marijuana. Absorption of morphine from the condom was ruled out based on a visual assessment of condom integrity and the condition of the tablets. Toxicological examinations of post-mortem blood and urine samples were conducted to determine whether death was related to the presence of illicit substances or pharmaceutical preparations often encountered in death investigations. Analysis for heroin was not performed as there was no investigative information to suggest its use. The analytical procedures consisted of immunoassays and gas chromatographic methods, utilizing flame ionization, nitrogen-phosphorus, and mass spectrometric detection. A concentration of 103 ng/mL of free morphine was detected in the femoral blood, and cannabinoid metabolites were indicated by an immunoassay in heart blood. No alcohol, or other substances of toxicological significance were detected.

The reported symptoms, autopsy findings, and the results of the toxicology examination point to a fatal morphine overdose. In the experience of this laboratory, this is the first known death associated with the snorting of a crushed sustained-release morphine tablet.

Morphine, Snorting, Fatal

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