H33 Infant and Child Deaths Associated With Drug Intoxication: A Series of Six Cases Over 15 Years in Eastern Virginia

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The goals of this presentation are to: (1) review pharmaceutical drugs, both prescription and over-the-counter, associated with infant and child deaths in medicolegal death investigations; (2) discuss manner-of-death determination in difficult cases associated with infant and child drug overdose deaths; and, (3) assess the role of non-lethal levels of drugs in infant and child deaths.

This presentation will impact the forensic science community by increasing awareness for clinicians and investigators of the presentation of infant and child deaths associated with pharmaceutical drugs, reviewing manner-of-death determinations, and discussing possible preventative measures.

Fatal drug overdose (prescription or over-the-counter drugs) is rare in infants and children. In the past 15 years, only six cases have occurred in the Tidewater district of Virginia's Office of the Chief Medical Examiner (OCME). The office serves a population of more than one million and routinely examines approximately 60 infants and children below 11 years of age each year, representing about 10% of all autopsy cases.

The ages of the decedents ranged in age from six weeks to eight years. Four cases involved prescription drugs and two involved over-the-counter drugs. No case was deemed a homicide. In three cases, diphenhydramine was intentionally administered by caretakers, but all the pharmaceutical drugs were either ingested accidentally, administered as part of medically supervised therapy, or the method of administration could not be determined. No case was associated with illegal drugs. An in-depth review of the following cases is offered for consideration.

A six-week-old male infant died in a warm room, positioned belly down, and covered with a blanket. He had fresh and healing rib fractures and dural hemosiderin without acute blunt force injury. Although homicide was suspected, the manner of death was eventually deemed undetermined due to the lack of acute fatal injury. Postmortem blood toxicology showed 0.1mg/L diphenhydramine with less than 5.0mg/L acetaminophen. Diphenhydramine should not be administered to neonates or infants. It likely played a role in death despite its low postmortem level, according to the pediatric forensic consultant.

A four-month-old child born with Prune Belly (Eagle-Barrett) Syndrome died from an accidental overdose of clonidine, due to mistakes made by the caretaker. The responsible parent transported her child by private vehicle to the hospital after he displayed lethargy. The child died after several days of hospital treatment with no admission blood available for analysis. Death was attributed to clonidine overdose based on history, medical records, and autopsy findings including centrilobular liver necrosis and infarcts of the liver, small bowel, and stomach, and hypoxic-ischemic brain histology. The manner was deemed accident.

A one-year-five-month-old boy was discovered unresponsive in his crib five hours after being laid down for a nap. Autopsy showed a respiratory tract infection not responsible for death. Postmortem toxicology showed an elevated but below the toxic range level of diphenhydramine and a fatal level of methadone. It was never determined how the child ingested the methadone. The manner remained undetermined after all investigation.

A two-year-old girl was found unresponsive the day after she was brought to the hospital with concern for possible ingestion of prescription medication. After a three-hour period of emergency room observation, she was sent home. The next day, after she was given acetaminophen and diphenhydramine for a fever, she was found unresponsive. Autopsy identified back and upper arm scars of concern for possible child abuse and a fatal overdose of the components of a buprenorphine-naloxone combination prescribed a family member for opiate maintenance. The family felt the fatal overdose must have occurred prior to the emergency room visit, which was deemed not possible by the forensic pathologist. The manner was undetermined.

A six-year-old boy with a complex psychological and medical history had been prescribed quetiapine and clonidine. He was sleepy the day before death. Investigation suggested quetiapine overdose based on toxicology, pill counts with missing tablets, history, and negative autopsy. The manner was undetermined.

An eight-year-old girl underwent a dental procedure and stopped breathing during treatment. An initial lethal level of chloral hydrate was not confirmed on re-testing; hydroxyzine in blood, bile, and liver presented a confusing picture. Death was thought in the end to be due to complications of dental sedation using chloral hydrate, hydroxyzine, and nitrous oxide. The manner was deemed accident.

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Fatal drug overdose in infants and young children are not common. Prevention of accidental ingestion should be geared toward educating parents and caregivers of proper drug-dosing instructions, educating parents and caregivers of when certain medication can and cannot be given to infants and young children (e.g., diphenhydramine should not be given to infants), and placing all medications out of reach of young children.

Clonidine, Pediatric Overdose Deaths, Infant Drug Deaths