RADARS® SYSTEM

Title:	Characterization of prescription stimulant exposures using RADARS® System poison center program data
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Abstract:

Background: Stimulant prescriptions for the treatment of attention-deficit/hyperactivity disorder have increased in recent years. Consequently, stimulant misuse and abuse is now a recognized problem in all ages. We describe stimulant exposures and associated medical outcomes as reported to the RADARS System Poison Center (PC) Program and compare to prescription opioid exposures.

Methods: The PC Program captures weekly acute drug exposure data from 48 of 60 US PCs. These PCs cover 44 states (84% of US population). PCs use a standard electronic system to record calls from the public and the coordinating center performs quality control checks to verify coding accuracy. Stimulant (prescription amphetamine and methylphenidate) and opioid (buprenorphine, fentanyl, hydrocodone, hydromorphone, morphine, oxycodone, oxymorphone, tramadol) exposures from third quarter 2007 through third quarter 2009 were analyzed.

Results: Thirty four thousand five hundred and forty (17 cases per 100,000 population) stimulant exposures (53% amphetamine; 47% methylphenidate) were reported over the study period. Mean age was 16.5 years (SD 13.5) and 57% were male. Site of ingestion was at own residence in most exposures (91%). The median number of substances ingested was one (range 2–26) while 31% (n = 10,379) involved two or more substances. Of known associated outcomes, 57% were no, minor or moderate effects, 2% (n = 524) were major effects and 0.06% (n = 21) were deaths. 119,475 opioid exposures (59 cases per 100,000 population) were reported over the study period; 5% (n = 5,878) were major effects and 0.5% (n = 572) were deaths. Thirty-two percent of stimulant exposures were intentional, compared with 57% of opioid exposures. Thirty-nine percent of stimulant exposures were therapeutic errors, compared with 22% of opioid exposures.

Conclusion: Although fewer stimulant exposures were reported and were associated with fewer poor outcomes compared to opioid exposures, stimulant exposures still resulted in a significant number of poor outcomes. In addition, more therapeutic errors occurred with stimulants, reflecting the use of these drugs and associated dosing errors in young children. Our conclusions are limited to cases reported to PCs, which often under represent exposures.