

214. Unintentional pediatric exposures to prescription medications in Europe as reported to the RADARS® System Global Toxicsurveillance Network

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Objective: To determine drug products most commonly mentioned in unintentional, pediatric exposures within France, Germany, Italy, and the UK as reported to the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS®) System Global Toxicsurveillance Network (GTNet).

Methods: GTNet was established in 2011 as a means of collaboration between countries to provide information about prescription drugs involved in acute health events as reported to participating poison centres worldwide, including intentional and unintentional exposures. Data collected on prescription opioids, stimulants, sedatives, benzodiazepines, and GABA analogues from participating poison centres in GTNet were analyzed from 2012 through 2016. Unintentional exposures involving children 5 years of age and younger reported to participating poison centres in Italy (Milan), the United Kingdom (Birmingham, Cardiff, Edinburgh, Newcastle), Germany (Göttingen), and France (Paris) are presented. The UK provides medical management advice to healthcare providers only, while the other poison centres also offer services to the public.

Results: In France, there were 372 pediatric exposures to prescription drugs of interest reported between 2012 and 2016. Codeine was the most common substance mentioned ($n = 66$, 17.7%) followed by alprazolam ($n = 63$, 16.9%), zolpidem ($n = 48$, 12.9%), and tramadol ($n = 36$, 9.7%). In Germany, there were 382 pediatric exposures to prescription drugs of interest reported between 2012 and 2016. Methylphenidate ($n = 68$, 17.8%) was the most common substance mentioned followed by codeine ($n = 61$, 16.0%), lorazepam ($n = 44$, 11.5%), diazepam ($n = 24$, 6.3%), and tramadol ($n = 24$, 6.3%). In Italy, there were 709 pediatric exposures to prescription drugs of interest reported between 2012 and 2016. Alprazolam ($n = 200$, 28.2%) was the most common substance mentioned followed by lorazepam ($n = 193$, 27.2%), diazepam ($n = 71$, 10.1%), and lormetazepam ($n = 68$, 9.6%). In the UK, there were 489 pediatric exposures to prescription drugs of interest reported between 2012 and 2016. Codeine ($n = 105$, 20.5%) was the most common substance mentioned followed by tramadol ($n = 97$, 19.0%), diazepam ($n = 39$, 7.6%), gabapentin ($n = 38$, 7.4%), and morphine ($n = 38$, 7.4%).

Conclusion: Between 2012 and 2016, there is variation in the most common drug products mentioned in pediatric exposures reported to poison centres across France, Germany, Italy, and the UK.

216. Cholinergic crisis in a toddler after accidental pyridostigmine intoxication

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Objective: Pyridostigmine is a carbamate cholinesterase inhibitor in clinical use for the treatment of myasthenia gravis. Inhibition of cholinesterase increases the concentration of acetylcholine in the synaptic cleft stimulating both muscarinic and nicotinic transmission. This can cause devastating cholinergic toxicity in insecticide or nerve gas poisoning. Pyridostigmine has a short half-life (0.5–3 hours), however, and this may explain why very few cases of overdoses have been reported. We present a case of pyridostigmine intoxication in a child causing a life-threatening cholinergic toxidrome.

Case report: A 2.5-year-old, previously healthy, boy accidentally ingested his mother's pyridostigmine, which she was taking for myasthenia gravis. At the time of detection, 19 tablets (60 mg tablets = 1140 mg) were missing and the boy admitted intake. Thirty to sixty minutes after the suspected ingestion, the boy's condition deteriorated. He vomited and lost his muscular tonus. When presenting at the hospital (1–2 hours after ingestion) he was awake but tetraplegic. He was drooling, had increased bronchial secretions and miosis but intact respiratory muscle function and was circulatory stable with heart rate of 90 beats per minute. He was promptly administered two consecutive doses of 0.2 mg of atropine. The airway secretions rapidly cleared and no respiratory support was needed. Seven hours after ingestion, his limb motor function had returned but some dysphagia persisted. Twelve hours after ingestion, he was discharged, completely recovered.

Conclusion: To our knowledge, the only previously described pyridostigmine overdoses are in a case series in adult patients with mild symptoms [1]. Here, we report a case with severe intoxication causing tetraplegia in a pediatric patient. Even though the symptoms were dramatic on admission, the patient only needed a few doses of atropine and no respiratory support. The rapid resolution of symptoms is probably due to the fast elimination and to the fact that >40% of cholinesterase needs to be inhibited for symptoms to emerge [2]. However, the case illustrates that without proper supportive therapy, pyridostigmine poisoning may be life-threatening in the pediatric population.

References

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217. Pronounced hyperchloremic acidosis after salt dough ingestion in a toddler

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Objective: Home-made salt dough is commonly used as plaything for children in homes and preschools. Recipes for dough can easily be found on the Internet and one gram of such dough