

220. The effect of holidays on acute poisoning enquiries to the Danish Poison Information Centre

Tonny S. Petersen, Kasper M. Petersen, Mikkel Christensen and Søren Bøgevig

Department of Clinical Pharmacology, University Hospital Bispebjerg, Copenhagen, Denmark

Objective: Previous reports have shown that the number of contacts to the emergency departments due to poisonings declines during holidays.^[1,2] However, this has not been examined from the perspective of poison centres which are usually the first point of contact. The aim of the study was to characterize the effects of holidays on enquiries to the Danish Poison Information Centre.

Methods: We extracted all enquiries concerning acute poisonings from the Danish Poison Information Centre Database from 2008 to October 2015. The mean number of calls was calculated for school holidays, bank holidays, school days and weekends stratified for age, risk assessment, time of day, type of poisoning, and place. School days were used as the reference for comparisons.

Results: We identified 107,838 enquiries regarding acute poisoning over the study period. During holidays, the number of calls per day increased by 9.7% from 36.6 to 40.1 enquiries/day. The increase was only seen during school holidays with a 12.5% increase while a 7.8% decrease was seen during bank holidays. Enquiries about children aged 0–4 years old predominantly contributed to the increase during school holidays with a 33.7% increase. The main increase in enquiries was during the time period from 9 am to 3 pm. The proportion of potentially life-threatening poisonings decreased slightly during school holidays from 5.4% to 5.0% of all calls. In the elderly (over 65 years of age), an increase in calls concerning medication errors was noted during bank holidays accounting for 41.7% of the calls compared to 27.8% of the calls during school days. **Conclusion:** In contrast to previous reports, we saw an increase in the number of calls during school holidays, mainly concerning younger children (below 5 years of age).^[1,2] A possible explanation could be that the daytime child care for the vast majority of pre-school children in Denmark are daytime nursery or nursery schools which has a lower risk of accidental poisoning.

References

- [1] Hughes K, McHale P, Wyke S, et al. Child injury: using national emergency department monitoring systems to identify temporal and demographic risk factors. *Inj Prev.* 2014;20:74–80.
- [2] Chien C, Marriott JL, Ashby K, et al. Unintentional ingestion of over the counter medications in children less than 5 years old. *J Paediatr Child Health.* 2003;39:264–269.

221. Tracking the trends over time of unintentional pediatric exposures to benzodiazepines and opioids reported to poison centres in the Global Toxicsurveillance Network

Darcey J. G. Johnson^a, Gillian Cooper^b, Franca Davanzo^c, Martin Ebbecke^d, Michael Eddleston^e, Robert Garnier^f,

Zachary R. Margolin^a, Bruno Mégarbane^{g,h}, Andreas Schaper^d, Fabrizio Sesana^c, Simon H. L. Thomas^e, John P. Thompson^e, J. Allister Vale^e and Jody Green^a

^aRocky Mountain Poison & Drug Center, Denver, USA; ^bNational Poisons Information Center, Cardiff, UK; ^cPoison Control Centre of Milan, Milan, Italy; ^dGIZ-Nord Poisons Centre, University Medical Center, Göttingen, Germany; ^eNational Poisons Information Service, Edinburgh, UK; ^fCentre Antipoison et de Toxicovigilance de Paris, Paris, France; ^gDepartment of Medical and Toxicological Critical Care, Lariboisière Hospital, Paris-Diderot University, Paris, France; ^hINSERM U1144, Paris-Descartes University, Paris, France

Objective: To determine if population rates of unintentional pediatric human exposures for benzodiazepines are experiencing similar trends as those of opioid exposures as reported to poison centres (PCs) in France, Germany, Italy, the UK, and the US.

Methods: Unintentional pediatric exposures to benzodiazepines (alprazolam, diazepam, etizolam, flunitrazepam, lorazepam, lormetazepam, nitrazepam, oxazepam, phenazepam, temazepam) and opioids (buprenorphine, fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone, pethidine, tramadol) reported to Global Toxicsurveillance Network (GTNet) PCs were examined to observe trend similarities. Unintentional pediatric (<6 years) exposures occurring from 2012–2014 were obtained from PCs in Paris (France), Göttingen (Germany), Milan (Italy), the UK (4 sites), and the US. UK PCs provide medical management assistance to healthcare providers only, while services in all other countries are also available to the public. Defined regions of call coverage exist in the Paris, Göttingen, UK, and US sites, while Milan handles 65–70% of calls in Italy. Rates are expressed as the number of unintentional pediatric exposures per 100,000 population. Poisson regression was used to determine differences in rate changes between benzodiazepine and opioid exposures with both discrete and continuous covariates. An analysis of covariance test determined differences between the overall rates changes over time for benzodiazepine and opioid exposures. **Results:** For unintentional pediatric exposures, benzodiazepine exposure rates were higher than opioid exposures in Germany, Italy, and the US, while opioid exposure rates were consistently higher than benzodiazepines in the UK. Benzodiazepine exposure rates decreased in all countries (statistically significant decreases only in the US [$p=0.0038$]). Similar decreases over time in opioid exposure rates were observed in Germany and the US. The negative slopes for benzodiazepine and opioid exposures within these two countries did not significantly differ. In contrast, France, Italy, and the UK experienced overall increases of opioid exposures. An analysis of covariates identified a statistically significant difference between the negative slope of exposure rates for benzodiazepines and the positive slope of opioid exposures in France ($p=0.0455$), though variability exists across quarters. **Conclusion:** Decreases over time in unintentional pediatric exposure rates for both benzodiazepines and opioids were observed in Germany and the US only. Benzodiazepine and opioid exposure rates have not experienced similar directional trends in France, Italy, or the UK. Despite decreases over time, further research is warranted to elaborate on the identification that unintentional pediatric exposure rates of benzodiazepines are often higher than those of opioids.