**Objective:** This study is to examine the relationship between the severity of valpromide poisoning and plasma valproic acid concentration.

**Methods:** A retrospective and observational study of valpromide exposures reported to the Angers Poison Control Center (PCC), France, over a sixteen year period and for which a valproic acid quantitation was performed. The severity was assessed according to the Poisoning Severity Score (PSS).

**Results:** A total of 163 cases were included, of which 161 were deliberate overdoses. The median age was 41 years and the sex ratio was 0.73. The median presumed dose intake was 6 g (0.3-63 g). The main signs observed were: somnolence (n = 54), coma (Glasgow Coma Score GCS ≤ 8) (n = 43), hyperammonemia (n = 42), hyponatremia (n = 22), including two cases of circulatory shock, cardiac arrest (n = 6), metabolic acidosis (n = 19), tachycardia ≤140 bpm (n = 17), vomiting (n = 15), and hyperlactatemia (≥5 mmol/L, n = 10). Severe poisoning (PSS 3 and 4) accounted for almost one third of cases (n = 51). Among the 5 fatal cases, valproic acid quantitation was performed post-mortem in 4 cases (concentrations of 179 and 335 mg/L in single exposures and 270 and 820 mg/L in multiple exposures). For 32 patients with at least 2 doses of valproic acid, the maximum concentration was observed at ≥11 hours after ingestion. Severity was correlated with plasma valproic acid concentration (r = 0.67, p < 0.00001). The risk of severe intoxication (PSS 3) was greatly increased when the plasma concentration was greater than 200 mg/L (OR 19 [2.9-239], p = 0.0002).

**Conclusion:** In case of overdose with valpromide, the concentration of valproic acid associated with severe intoxication is much lower than in the case of overdose with valproic acid (200 mg/L versus 850 mg/L) [1].

**Reference**


61. Surgical removal of quetiapine bezoars

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**Objective:** Quetiapine is an atypical antipsychotic drug. In large overdoses, pharmacobezoar formations (mainly seen with sustained-release preparations) can complicate patient management due to delayed onset of severe symptoms and reduced effectiveness of decontamination procedures [1]. Fatalities have been reported after ingestion of more than 10 g. Three cases of slow-release quetiapine overdose are presented where pharmacobezoar formations occurred and different surgical procedures were deemed necessary.

**Case reports:** Case 1. A 57-year-old man presented at the hospital after a multidrug overdose including quetiapine 33 g (110 tablets x 300 mg) and unknown amounts of oxazepam, lamotrigine and alcohol. His level of consciousness declined and an abdominal computerised tomography (CT) scan showed a vast amount of tablets in the ventricle and duodenum. Gastroscopy was initiated, but difficulties in removing the sticky conglomerate (the size of a tennis ball) lead to the decision to execute an acute laparotomy with manual removal of the bezoar followed by whole bowel irrigation (WBI). The patient continued to be circulatory stable and was taken off the ventilator the following day. Case 2. A 50-year-old woman ingested quetiapine 18 g (90 tablets x 200 mg) and an unknown amount of methylphenidate and zopiclone. She showed signs of central nervous system depression, nystagmus, tachycardia and twitching of the extremities. A CT scan revealed a lump of tablets resembling a cauliflower. Gastroscopic removal was time-consuming and technically difficult. A broad basket was the best, but not an optimal tool. Aspiration pneumonia ensued but otherwise the course was uneventful. Case 3. A 36-year-old man presented at the hospital shortly after a massive overdose of 80 g (200 tablets x 400 mg). WBI (2 liter/hour) was initiated but proved to be ineffective. A CT scan showed a conglomerate (8 x 5 cm) in the ventricle, 20 tablets in the duodenum and 10 tablets in the jejunum. The bezoar was impossible to remove with gastroscopic methods, and laparoscopic extraction through the abdominal cavity was initiated. Technical difficulties were evident but most of the bezoar could be removed. The post-operative period was uneventful.

**Conclusion:** Slow-release formulations and the risks of bezoar formation add extra dimensions to patient management after a large overdose. A swift decontamination plan sometimes involving WBI and various surgical procedures can be vital for a good prognosis. Slow-release formulations without the propensity of forming bezoars are to be preferred.

**Reference**

in the numerator. Population estimates by region from Eurostat [1] were used as the denominator.

**Results:** In France, Paris had the highest rate of intentional exposures involving benzodiazepines and exposures involving prescription opioids per 100,000 population (Table 1). Meurthe-et-Moselle had the highest rate of intentional exposures involving GABA analogs, and Haute-Marne had the highest rate per population for Z-drugs. In Italy, Varese had the highest rate of intentional exposures for all drug groups.

**Conclusion:** There is substantial regional variation in intentional exposures involving prescription medications. Considering regional rates per population is important in developing targeted interventions. Results are limited by population coverage and medications comprising drug groups vary between countries.

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### 63. Button battery exposures in Australian children: a prospective observational study highlighting the role of poisons information centres

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**Objective:** Button battery ingestion is a worldwide problem, with evidence of increasing harm and deaths in recent decades. In the last 5 years, two Australian children have died following ingestion of button batteries. In the 2015 coronial inquest into one case, a number of health system problems were identified, and the coroner recommended that Australian Poisons Information Centres (PICs) are the first point of contact following button battery exposures. Australian PIC experience includes cases of treatment delay due to lack of healthcare professional recognition of risks, and/or lack of local resources. Consequently, New South Wales PIC (NSWPIC) introduced a protocol for button battery exposures, whereby PIC staff call ahead to the hospital a child is to present at. The PIC i) confirms the hospital's ability to perform an X-ray (if not, callers are diverted to another hospital to minimise delay), and ii) discusses the risk of severe injury to ensure the child is given priority for X-ray. This study aims to characterise Australian button battery exposures, focusing on exposure circumstances and preventable health system shortcomings.

**Methods:** A prospective observational study of button battery exposure calls to NSWPIC. November 2015-May 2017, using a follow-up survey to obtain outcome data and additional details. Survey data was combined with nationwide PIC data over the same period.

**Results:** Australian PICs were consulted on 578 exposures over the 19-month study period, including 506 paediatric cases. The median (IQR) age for the pediatric cases was 23 months (14-36 months). Where the source was identified, batteries came from toys in 26% of cases, with hearing aids, watches, and remote controls being other common sources. Children in outer regional, remote and very remote areas were overrepresented, and 15 cases were referred to a different hospital due to X-ray facilities being unavailable at their nearest hospital. We identified inconsistent triage from a range of first responders, and knowledge gaps regarding button battery dangers amongst some healthcare professionals.

**Conclusion:** Button battery exposures are a common call to Australian PICs. This study highlights a potential role of education campaigns, professional guidelines, and child-resistant battery compartments in toys and household devices. PICs calling ahead to ensure X-ray availability/diversion to a different hospital likely reduced delays for this time-critical exposure. Data collected by PICs can provide useful information for public health and product safety initiatives. A PIC-led protocol to direct initial medical management of button battery exposures could reduce delays and improve outcomes.

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### 64. Review of enquiries to the UK National Poisons Information Service (NPIS) Birmingham Unit originating from NHS 111, NHS 24 and NHS Direct advice services

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**Objective:** Button battery ingestion is a worldwide problem, with evidence of increasing harm and deaths in recent decades. In the last 5 years, two Australian children have died following ingestion of button batteries. In the 2015 coronial inquest into one case, a number of health system problems were identified, and the coroner recommended that Australian Poisons Information Centres (PICs) are the first point of contact following button battery exposures. Australian PIC experience includes cases of treatment delay due to lack of healthcare professional recognition of risks, and/or lack of local resources. Consequently, New South Wales PIC (NSWPIC) introduced a protocol for button battery exposures, whereby PIC staff call ahead to the hospital a child is to present at. The PIC i) confirms the hospital's ability to perform an X-ray (if not, callers are diverted to another hospital to minimise delay), and ii) discusses the risk of severe injury to ensure the child is given priority for X-ray. This study aims to characterise Australian button battery exposures, focusing on exposure circumstances and preventable health system shortcomings.

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**Conclusion:** Button battery exposures are a common call to Australian PICs. This study highlights a potential role of education campaigns, professional guidelines, and child-resistant battery compartments in toys and household devices. PICs calling ahead to ensure X-ray availability/diversion to a different hospital likely reduced delays for this time-critical exposure. Data collected by PICs can provide useful information for public health and product safety initiatives. A PIC-led protocol to direct initial medical management of button battery exposures could reduce delays and improve outcomes.