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ORIGINAL ARTICLE

Therapeutic psychotropic drugs: Most common cause of unintentional poisoning in children☆

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KEYWORDS
Poisoning;
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Abstract
Introduction: The aim of this article is to determine the most common substances involved in unintentional poisoning in children attending Pediatric Emergency Departments (PED) in Spain.
Methods: A descriptive study was conducted based on a prospective registry of the poisonings registered in the 57 PED participating in the Toxicology Surveillance System of the Spanish Society of Pediatric Emergencies between October 2008 and September 2013.
Results: A total of 639 poisoning were registered during the study period, 459 of them (71.8%) were unintentional. The most commonly involved substances were drugs (253, 55.1%) followed by household products (137, 29.8%). The drug groups most involved were psychotropic drugs (62, 24.5%), which included benzodiazepines (54), anti-catarrhal (41, 16.2%), and antipyretics (39, 15.4%).
Conclusions: The most common reason for consulting Spanish PEDs is the unintentional ingestion of psychotropic drugs, mainly benzodiazepines.

PALABRAS CLAVE
Intoxicación;
Niño;
Urgencias;
No intencionada;
Psicofármaco

Ingesta de psicofármacos: causa más frecuente de intoxicaciones pediátricas no intencionadas en España

Resumen
Introducción: El objetivo es conocer cuáles son los agentes más habitualmente implicados en las intoxicaciones medicamentosas no intencionadas que consultan en los Servicios de Urgencias Pediátricos (SUP) en España.

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[1] The members of the Intoxications Working Group of the SEUP are detailed in Appendix 1.

Material y métodos: Estudio descriptivo basado en un registro prospectivo de las intoxicaciones registradas en los 57 SUP participantes del Observatorio Toxicológico de la Sociedad Española de Urgencias de Pediatría entre octubre de 2008 y septiembre de 2013.
Resultados: En el periodo estudiado se registraron 639 intoxicaciones, de ellas 459 (71.8%) ingestas no intencionadas. Los agentes principales implicados fueron los fármacos (253, 55,1%), seguidos de los productos del hogar (137, 29,8%). Los grupos de fármacos más involucrados fueron los psicofármacos (62, 24,5%); de estos, 54 benzodiacepinas, anticatarrales (41, 16,2%) y antitérmicos (39, 15,4%).
Conclusiones: La causa más importante de consulta por una intoxicación no intencionada en la infancia en los SUP españoles es la ingesta de psicofármacos, sobre todo benzodiacepinas.

Introduction

Poisonings account for approximately 0.3%[1] of the visits to paediatric emergency departments (PEDs) in Spain, and they most frequently occur by unintentional ingestion in children less than 5 or 6 years of age.[1–3] This is the most common means of intoxication, far more frequent than dosing errors.

Most of these poisonings involve drugs, and paracetamol is the most frequently involved substance, accounting for nearly 20% of unintentional poisonings in children younger than 5 years in Spanish PEDs in the 2001–2002 period.[3] Changes in the most commonly used formulation of this drug have been associated with a decrease in the unintentional poisonings by paracetamol,[1] although dosing errors by parents increased at the same time.[4]

The aim of this study was to learn which drugs are most commonly involved in unintentional drug poisonings leading to PED visits in Spain, and to analyse the characteristics of these poisonings.

Materials and methods

We conducted a study based in a prospective registry of the poisonings registered in the 57 Spanish PEDs that participate in the Toxicology Surveillance System of the Spanish Society of Pediatric Emergencies (Sociedad Española de Urgencias de Pediatría [SEUP]) between October 2008 and September 2013. This Surveillance System collects data on all the poisoning cases seen at participating PEDs on one day each month; the methodology of this registry has been explained in a previous article in this journal.[1]

The hospitals that participate in the Surveillance System are listed in Appendix 1.

Results

During the period under study, a total of 214 168 visits to the participating PEDs were documented, of which 639 (0.29%; 95% CI, 0.27–0.31%) corresponded to cases of poisoning. Of all these cases, 459 (71.8%) corresponded to unintentional ingestions, which were most frequent in males (254; 55.3%) and children younger than 5 years (418 [91%]).

The main substances involved in unintentional poisonings by ingestion were drugs (253 [55.1%]), followed by household products (137 [29.8%]).

The most commonly involved group of drugs were psychotropic agents (62 [24.5%] of all unintentional drug poisonings); cold and cough preparations (41 [16.2%]) and antipyretics (39 [15.4%]), and benzodiazepines were the most commonly recorded psychotherapeutic drugs (54 [85.7%]) (Table 1).

Psychotropic drug poisonings, like unintentional poisonings from other drugs, occurred most frequently at the family home. However, there were some differences in these poisonings: they took place in the parents' bedroom more often (15 [25.4%] vs 16 [8.8%]; $P = .002$), patients were transported to the hospital in an ambulance more frequently (8 [12.9%] vs 6 [3.2%]; $P = .007$), and more cases presented with symptoms, especially neurologic manifestations (35 [57.4%] vs 25 [13.2%]; $P < .001$) and had abnormal findings in the physical examination (23 [37.1%] vs 13 [6.8%]; $P < .001$). Furthermore, a greater number of diagnostic tests were performed in these patients (40 [64.5%] vs 80 [42.5%]; $P = .002$) and a greater proportion of them were admitted to the

Table 1 Benzodiazepines involved in unintentional psychotropic drug poisonings.

Lorazepam	13
Diazepam	8
Lormetazepam	7
Bromazepam	4
Alprazolam	4
Tetrazepam	4
Clonazepam	3
Clotiazepam	2
Citalopram	1
Midazolam	1
Zolpidem	1
Unspecified benzodiazepine	8