III Jornada DE ANTÍDOTOS

MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

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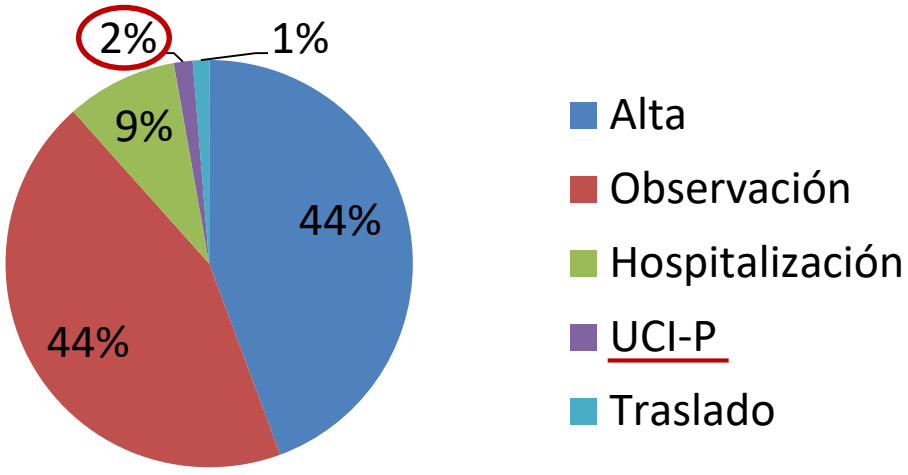
Intoxicaciones pediátricas

- Observatorio toxicológico de SEUP

  Oct 2008- dic 2017

  N = 1751 episodios sospecha intoxicación

  54% no recibió ningún tratamiento



Intoxicaciones pediátricas

Clinical Toxicology (2012), **50,** 872–874

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DOI: 10.3109/15563650.2012.752494

informa
healthcare

COMMENTARY

2011 Pediatric fatality review of the National Poison Center Database

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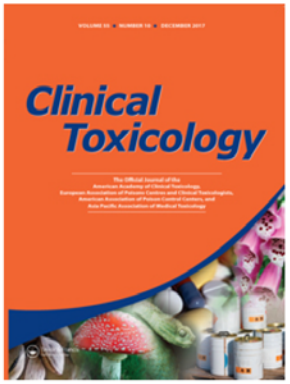

Clinical Toxicology

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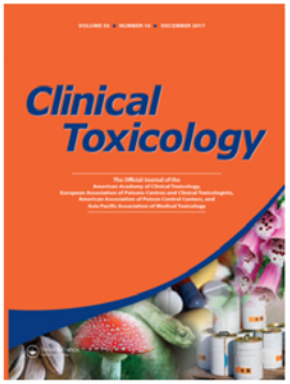
ISSN: 1556-3650 (Print) 1556-9519 (Online) Journal homepage: http://www.tandfonline.com/loi/ictx20

Table 17(E). Substance categories most frequently involved in pediatric (≤ 5 years) deaths[a]

Substance (major generic category)	All substances	%[b]	Single substance exposures	%[c]
Fumes/gases/vapors	12	18.18	8	21.62
Analgesics	11	16.67	9	24.32
Cardiovascular drugs	7	10.61	1	2.70
Antidepressants	6	9.09	1	2.70
Antihistamines	5	7.58	3	8.11
Batteries	4	6.06	4	10.81
Unknown drug	4	6.06	4	10.81
Stimulants and street drugs	3	4.55	1	2.70
Chemicals	2	3.03	0	0.00
Pesticides	2	3.03	1	2.70
Plants	2	3.03	2	5.41
Sedative/hypnotics/antipsychotics	2	3.03	0	0.00
Alcohols	1	1.52	1	2.70
Antimicrobials	1	1.52	0	0.00
Cosmetics/personal care products	1	1.52	1	2.70
Dietary supplements/herbals/homeopathic	1	1.52	1	2.70
Diuretics	1	1.52	0	0.00
Hormones and hormone antagonists	1	1.52	0	0.00
Total	66	100.00	37	100.00

[a]Includes all children with actual or estimated ages ≤5 years old. Results do not include "unknown child" or "unknown age". Includes death and death, indirect regardless of RCF.
[b]Percentages are based on the total number of substances reported in pediatric fatalities ($N = 66$).
[c]Percentages are based on the total number of single substance pediatric fatalities ($N = 37$).



Clinical Toxicology

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Plants	2	3.03	2	5.41
Sedative/hypnotics/antipsychotics	2	3.03	0	0.00
Alcohols	1	1.52	1	2.70
Antimicrobials	1	1.52	0	0.00
Cosmetics/personal care products	1	1.52	1	2.70
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[b]Percentages are based on the total number of substances reported in pediatric fatalities ($N = 66$).
[c]Percentages are based on the total number of single substance pediatric fatalities ($N = 37$).

Algunos casos clínicos...

- Lactante de 8 meses encontrado, por su niñera, cianótico en su hamaquita
- Los Servicios de Emergencias Médicas constatan rigidez generalizada compatible con rigor mortis e inician reanimación cardiopulmonar sin respuesta
- Se declaró éxitus al llegar al hospital
- La niñera admitió haberle administrado **1 comprimido de difenhidramina 50mg** por estar «muy agitado»

- Necropsia: Intoxicación por difenhidramina

1 comprimido de difenhidramina 50mg...

Algunos casos clínicos...

- Niña de 5 años que ingirió **1 comprimido de buprenorfina/naloxona sublingual** perteneciente a su cuidadora (tía)
- 1 h más tarde estaba somnolienta y nauseosa. Fue hallada por su tía sin respuesta estirada en la cama
- Se declaró éxitus en la escena
- Necropsia: Intoxicación por buprenorfina

1 comprimido de buprenorfina/naloxona...

Algunos casos clínicos...

- Niño de 2 años que fue encontrado por su madre con un bote de pastillas de nifedipino retard 90mg. Como máximo podría haber ingerido 5 comprimidos.

- Asintomático a la llegada a Urgencias. Se administró C.A y se canalizó vía. Se trasladó a UCI-P para monitorización.

Algunos casos clínicos...

- A la mañana siguiente seguía asintomático. Sólo destacaba taquicardia 170x’ y glucosa 201mg/dl.
- Por la tarde (24h tras la ingesta) presentó bradicardia súbita que evolucionó rápidamente a fibrilación ventricular. Pese a las maniobras de RCP, fue éxitus.
- Niveles elevados de nifedipino en necropsia.

Algunos casos clínicos...

- Niña sana de 13 meses que inició convulsión generalizada.
- El Servicio de Emergencias Médicas la encontró convulsionando y cianótica, bradipneica. La trasladó con ventilación asistida.
- Su hermana gemela se encontraba ingresada en UCI-P por convulsión generalizada seguida de parada cardiorespiratoria 2 días antes.
- A la llegada a Urgencias se administró lorazepam con lo que cedió la convulsión. Apareció bradicardia con QRS ancho y ausencia de pulso. Pese a maniobras de RCP avanzada no pudo revertirse el paro.

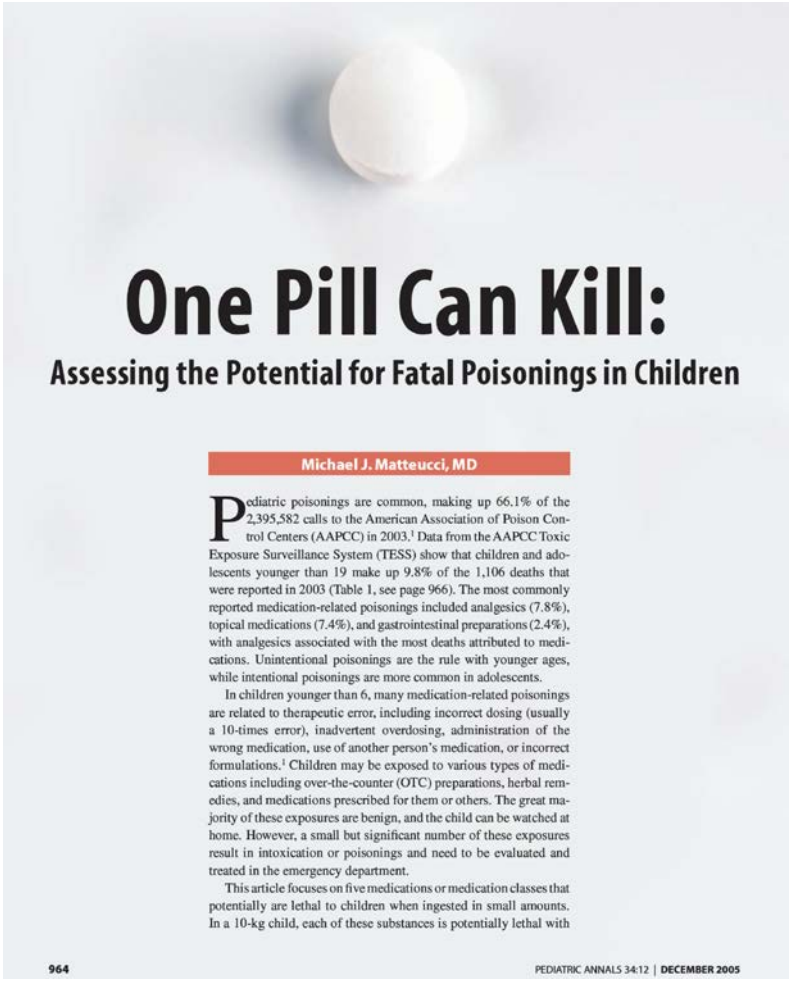
Algunos casos clínicos...

- La policía encontró una botella vacía de lidocaína al 2% en solución viscosa en la mesita de café del salón. Había sido prescrita a las gemelas 3 meses antes para tratar el dolor de dentición. El hermano de 16 años la había estado administrando por error dentro del biberón.

- Hermana en UCI-P: niveles muy altos de lidocaína en orina
- Necropsia: Intoxicación por lidocaína

1 comprimido puede ser letal

One Pill Can Kill: Assessing the Potential for Fatal Poisonings in Children
Matteucci, Michael J, MD
Pediatric Annals; Dec 2005; 34, 12; Health & Medical Collection



One Pill Can Kill:

Assessing the Potential for Fatal Poisonings in Children

Michael J. Matteucci, MD

Pediatric poisonings are common, making up 66.1% of the 2,395,582 calls to the American Association of Poison Control Centers (AAPCC) in 2003.[1] Data from the AAPCC Toxic Exposure Surveillance System (TESS) show that children and adolescents younger than 19 make up 9.8% of the 1,106 deaths that were reported in 2003 (Table 1, see page 966). The most commonly reported medication-related poisonings included analgesics (7.8%), topical medications (7.4%), and gastrointestinal preparations (2.4%), with analgesics associated with the most deaths attributed to medications. Unintentional poisonings are the rule with younger ages, while intentional poisonings are more common in adolescents.

In children younger than 6, many medication-related poisonings are related to therapeutic error, including incorrect dosing (usually a 10-times error), inadvertent overdosing, administration of the wrong medication, use of another person's medication, or incorrect formulations.[1] Children may be exposed to various types of medications including over-the-counter (OTC) preparations, herbal remedies, and medications prescribed for them or others. The great majority of these exposures are benign, and the child can be watched at home. However, a small but significant number of these exposures result in intoxication or poisonings and need to be evaluated and treated in the emergency department.

This article focuses on five medications or medication classes that potentially are lethal to children when ingested in small amounts. In a 10-kg child, each of these substances is potentially lethal with

1 comprimido o cucharita pueden ser letales

ORIGINAL RESEARCH ARTICLE

Pediatr Drugs 2004; 6 (2): 123-126
1174-5878/04/0002-0123/$31.00/0

Medications That Can Be Fatal For a Toddler with One Tablet or Teaspoonful

A 2004 Update

Benjamin Bar-Oz,[1,2] *Zina Levichek*[1] and *Gideon Koren*[1]

1 The Motherisk Program, Division of Clinical Pharmacology, The Hospital for Sick Children and The University of Toronto, Toronto, Ontario, Canada
2 Department of Neonatology, Hadassah Medical Center and The Hebrew University, Jerusalem, Israel

1 comprimido o cucharita pueden ser letales

Table I. Medicinal preparations that can be fatal for a 10kg toddler upon ingestion of a one dose unit

Drug	Minimal potential fatal dose (mg/kg)	Maximal dose unit available (mg unless otherwise stated)	No. of tablets that can cause fatality
Tricyclic antidepressants			
amitriptyline	15	100	1–2
imipramine	15	150	1
desipramine	15	75	1–2
Antipsychotics			
loxapine	30–70	50	1–2
thioridazine	15	200	1
chlorpromazine	25	200	1–2
Antimalarials			
chloroquine	20	500	1
hydroxychloroquine	20	200	1
quinine	80	650	1–2
Anti-arrhythmics			
quinidine	15	324	1
disopyramide	15	150	1
procainamide	70	1000	1
flecainide	25	150	1–2
Calcium channel blockers			
nifedipine	15	90	1–2
verapamil	15	360	1
diltiazem	15	360	1
Camphor	100	1 g/5mL	1 tsp
Methyl salicylate	200	1.4 g/mL	<1 tsp
Theophylline	8.4	500	1
Narcotics			
codeine	7–14	60	1–2
hydrocodone	1.5	60 mg/5mL	<1 tsp
methadone	1–2	40	1
morphine		200	1
Oral hypoglycemics			
chlorpropamide	5	25	1
glibenclamide	0.1	2.5	1
glipizide	0.1	5	1
Podophyllin 25%	15–20	1.25 g/5mL	1mL

tsp = teaspoon.

MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

- Objetivos:
  - ➢ Actualizar la lista de medicamentos altamente tóxicos en pediatría
  - ➢ Adaptarla a nuestro medio

- ➢ Elaboración de un listado de fármacos y productos sanitarios comercializados en España que pueden provocar intoxicaciones pediátricas graves o letales
- ➢ Elaboración de un listado de «One pill killers»

MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

- Métodos:

I- Búsqueda de casos de intoxicaciones pediátricas fatales o graves

Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS) 2000-2016

- Casos mortales de intoxicaciones tras ingesta de fármacos o productos sanitarios en pacientes ≤ 7 años
- Único tóxico implicado
- Indudable-probablemente responsable de la muerte

MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

- Métodos:

I- Búsqueda de casos de intoxicaciones pediátricas fatales o graves

Pubmed
2000-2018
Key words: “severe” ”poisoning” “child” “pediatric” “toxicological emergency”

- Casos de intoxicaciones por fármacos o productos sanitarios en pacientes ≤ 7 años
- PSS 3 (grave) o 4 (fatal)
- Casos clasificados en estudios previos como graves (síntomas amenazantes para la vida o secuelas)

ORGAN	NONE	MINOR	MODERATE	SEVERE	FATAL
	0	1	2	3	4
	No symptoms or signs	Mild, transient and spontaneously resolving symptoms or signs	Pronounced or prolonged symptoms or signs	Severe or life-threatening symptoms or signs	Death
GI-tract		• Vomiting, diarrhoea, pain • Irritation, 1st degree burns, minimal ulcerations in the mouth • Endoscopy: erythema, oedema	• Pronounced or prolonged vomiting, diarrhoea, pain, ileus • 1st degree burns of critical localization or 2nd and 3rd degree burns in restricted areas • Dysphagia • Endoscopy: ulcerative transmucosal lesions	• Massive haemorrhage, perforation • More widespread 2nd and 3rd degree burns • Severe dysphagia • Endoscopy: ulcerative transmural lesions, circumferential lesions, perforation	
Respiratory system		• Irritation, coughing, breathlessness, mild dyspnoea, mild bronchospasm • Chest X-ray: abnormal with minor or no symptoms	• Prolonged coughing, bronchospasm, dyspnoea, stridor, hypoxemia requiring extra oxygen • Chest X-ray: abnormal with moderate symptoms	• Manifest respiratory insufficiency (due to e.g. severe bronchospasm, airway obstruction, glottal oedema, pulmonary oedema, ARDS, pneumonitis, pneumonia, pneumothorax) • Chest X-ray: abnormal with severe symptoms	
Nervous system		• Drowsiness, vertigo, tinnitus, ataxia • Restlessness • Mild extrapyramidal symptoms • Mild cholinergic/anticholinergic symptoms • Paraesthesia • Mild visual or auditory disturbances	• Unconsciousness with appropriate response to pain • Brief apnoea, bradypnoea • Confusion, agitation, hallucinations, delirium • Infrequent, generalized or local seizures • Pronounced extrapyramidal symptoms • Pronounced cholinergic/anticholinergic symptoms • Localized paralysis not affecting vital functions • Visual and auditory disturbances	• Deep coma with inappropriate response to pain or unresponsive to pain • Respiratory depression with insufficiency • Extreme agitation • Frequent, generalized seizures, status epilepticus, opisthotonus • Generalized paralysis or paralysis affecting vital functions • Blindness, deafness	

MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

- Métodos:

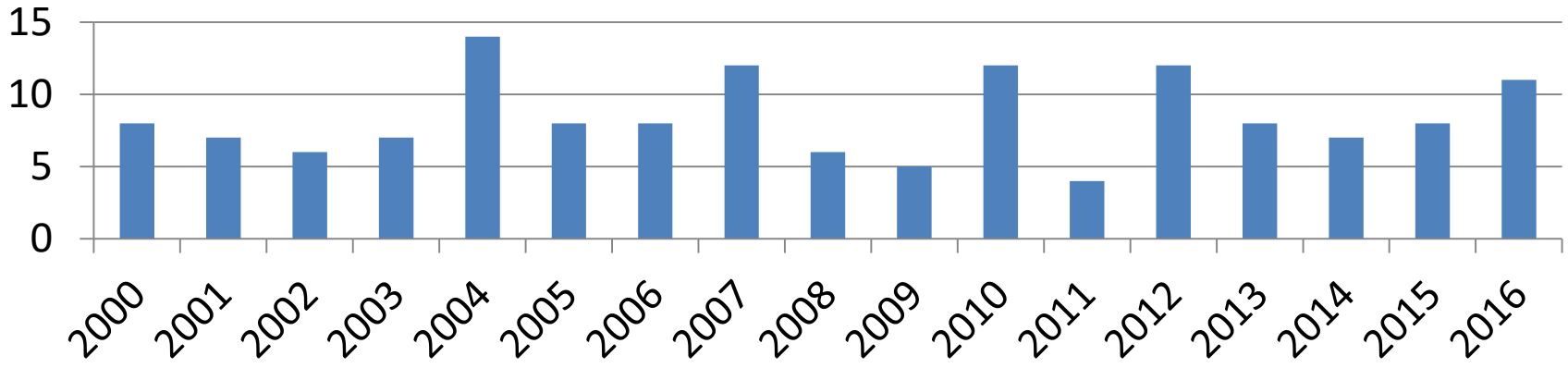
II- Búsqueda de dosis tóxicas y letales en edad pediátrica (Poisindex)

III- Comprobación de la comercialización en España:
CIMA: Centro de Información On-line de Medicamentos de la AEMPS

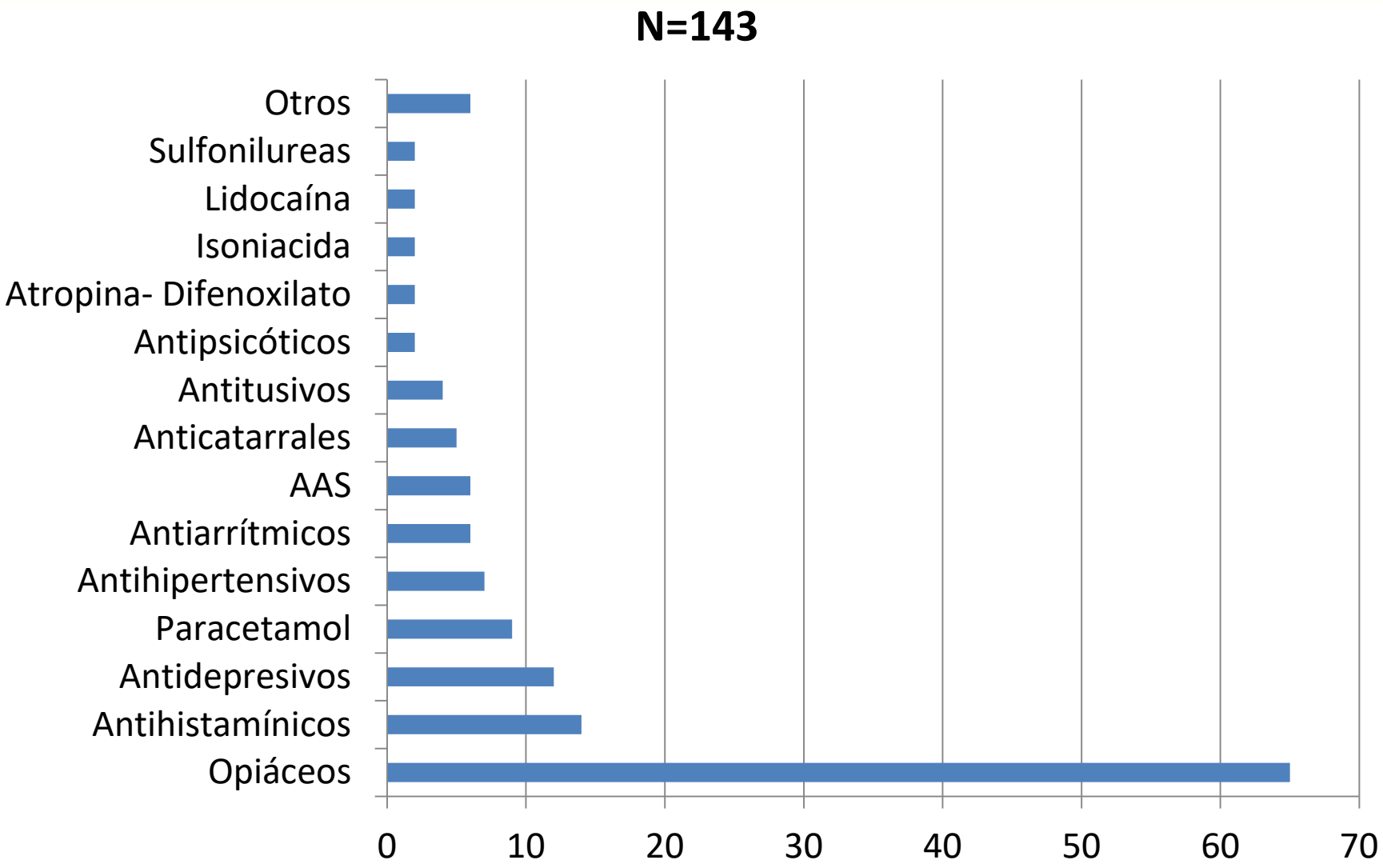
MEDICAMENTOS ALTAMENTE TÓXICOS EN LA EDAD PEDIÁTRICA

Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS)

N= 143



Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS)



Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS)

Opiáceos	Nº casos
Metadona	**33**
Oxicodona	15
Morfina	9
Buprenorfina	5
Parche fentanilo	2
Hidromorfona	1

Otros analgésicos	Nº casos
Paracetamol	9
Aspirina	6

Anestésicos tópicos	Nº casos
Lidocaína 2%	2

Antitusígenos	Nº casos
Dextrometorfano	5
Benzonatato	2

Antihistamínicos	Nº casos
Difenhidramina	12
Prometazina	1
Doxilamina	1
Anticatarrales	
Clorfeniramina-hidrocodona	3
Difenhidramina-bromfeniramina	1

Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS)

Antidepresivos	Nº casos
Bupropion	5
Imipramina	3
Desipramina	1
Imipramina	1
Sertralina	1
Antipsicóticos	
Haloperidol	1
Clorpromazina	1

Sulfonilureas	Nº casos
Metformina	1
Glibencamida	1

Antihipertensivos	Nº casos
Nifedipino	3
Diltiazem	2
Clonidina	1

Antiarrítmicos	Nº casos
Flecainida	5
Propafenona	1
Digoxina	1

Otros	Nº casos
Atropina-difenoxilato	2
Isoniacida	2
Carbamazepina	1
Hidroxicloroquina	1
Colchicina	1
Bicarbonato sódico	1
Hidrato de cloral	1

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

Original article

Severe and fatal pharmaceutical poisoning in young children in the UK

Mark Anderson,[1,2] Leonard Hawkins,[2] Michael Eddleston,[3,4] John P Thompson,[5] J Allister Vale,[6] Simon H L Thomas[2,7]

[1]Great North Children's Hospital, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, UK
[2]Newcastle Unit, National Poisons Information Service, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, UK
[3]Edinburgh Unit, National Poisons Information Service, Royal Infirmary of Edinburgh, Edinburgh, UK
[4]Department of Pharmacology, Toxicology and Therapeutics, University/BHF Centre for Cardiovascular Science, University of Edinburgh, Edinburgh, UK
[5]Cardiff Unit, National Poisons Information Service, University Hospital Llandough, Penarth, Vale of Glamorgan, UK

ABSTRACT

Objective Accidental poisoning in young children is common, but severe or fatal events are rare. This study was performed to identify the number of such events occurring in the UK and the medications that were most commonly responsible.

Design Analysis of national data sets containing information relating to severe and fatal poisoning in children in the UK.

Data sources Office of National Statistics mortality data for fatal poisoning; Paediatric Intensive Care Audit Network admissions database and the National Poisons Information Service for severe non-fatal poisoning; Hospital Episode Statistics for admission data for implicated agents.

Results Between 2001 and 2013, there were 28 children aged 4 years and under with a death registered as due to accidental poisoning by a pharmaceutical product in England and Wales. Methadone was the responsible drug in 16 (57%) cases. In the UK, 201

Table 1 Medications resulting in death or severe symptoms of poisoning in children

Data	Deaths n (%)	PICU admissions n (% of identified substances)	Hospital admissions n	'Severe' NPIS enquiries n (%)
Region	England and Wales	UK	England	UK
Study period	2001–2013	2002–2012	1998/1999–2013/2014	2008–2014
Age range (years)	<5	<5	<14	<5
Source	ONS	PICANet	HES	UKPID
Benzodiazepines	0	22 (19%)	3156	0
Methadone	16 (57%)	20 (17%)	536	6 (9%)
Other opioids	1 (4%)	19 (17%)	3265	1 (1%)
Tricyclic and tetracyclic antidepressants	3 (11%)	13 (11%)	3376	3 (4%)
Iron and its compounds	1 (4%)	13 (11%)	2013	13 (19%)
Anticonvulsants (except benzodiazepines)	1 (4%)	6 (5%)	3984	8 (12%)
Heroin	2 (7%)	–	96	0
Others/unspecified	4 (14%)	108	–	38 (55%)
Total	28	201	–	69

HES, Hospital Episode Statistics; NPIS, National Poisons Information Service; ONS, Office of National Statistics; PICANet, Paediatric Intensive Care Audit Network; PICU, paediatric intensive care units; UKPID, UK Poisons Information Database.

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

PEDIATRICS/ORIGINAL RESEARCH

Pediatric Fatalities Associated With Over the Counter (Nonprescription) Cough and Cold Medications

Richard C. Dart, MD, PhD
Ian M. Paul, MD, MSc
G. Randall Bond, MD
David C. Winston, MD, PhD
Anthony S. Manoguerra, PharmD
Robert B. Palmer, PhD
Ralph E. Kauffman, MD
William Banner, MD, PhD
Jody L. Green, PhD
Barry H. Rumack, MD

From the Rocky Mountain Poison and Drug Center, Denver Health and Hospital Authority, Denver, CO (Dart, Palmer, Green, Rumack); the University of Colorado School of Medicine, Aurora, CO (Dart, Rumack); Penn State College of Medicine, Hershey, PA (Paul); Cincinnati Drug and Poison Information Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH (Bond); the Pima County Forensic Science Center, Tucson, AZ (Winston); the Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California–San Diego, La Jolla, CA (Manoguerra); the University of Missouri–Kansas City School of Medicine, Kansas City, MO (Kauffman); and the Oklahoma Poison Control Center, The Children's Hospital at Saint Francis, Department of Pediatrics, Oklahoma University College of Medicine, Tulsa, OK (Banner).

[Ann Emerg Med. 2009;53:411-417.]

Pseudoefedrina, difenhidramina, dextrometorfano, clorfeniramina, bromfeniramina, doxilamina, fenilefrina

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

REVIEW ARTICLE

Drug Safety 2005; 28 (11): 1029-1044
0114-5916/05/0011-1029/$34.95/0

Antipsychotic Poisoning in Young Children

A Systematic Review

Geoffrey K. Isbister,[1,2] *Corrine R. Balit*[2] and *Henry A. Kilham*[3]

1 Tropical Toxinology Unit, Menzies School for Health Research, Sydney, Australia
2 NSW Poisons Information Centre, The Children's Hospital at Westmead, Sydney, Australia
3 Division of Academic and General Medicine, The Children's Hospital at Westmead, Sydney, Australia

Casos fatales: clorpromazina
Casos graves: tioridazina, haloperidol, clozapina, olanzapina

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

CLINICAL TOXICOLOGY, 2017
VOL. 55, NO. 1, 40–45
http://dx.doi.org/10.1080/15563650.2016.1233342

Taylor & Francis
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POISON CENTRE RESEARCH

Comparison of pediatric atypical antipsychotic exposures reported to U.S. poison centers

Gina Stassinos and Wendy Klein-Schwartz

Maryland Poison Center, Department of Pharmacy Practice and Science, University of Maryland School of Pharmacy, Baltimore, MD, USA

Table 3. Comparison of management site and medical outcome.

	Aripiprazole # (%)	Olanzapine # (%)	Quetiapine # (%)	Risperidone # (%)	Ziprasidone # (%)
Management site					
Non-HCF	1185 (23.6)	327 (18.8)	1154 (29.6)	1810 (37.9)	267 (17.8)
Emergency Department	2832 (47.5)	805 (46.4)	2188 (56.0)	2100 (44.0)	714 (47.6)
Admit critical care	547 (10.9)	308 (17.8)	192 (4.9)	279 (5.8)	279 (18.6)
Admit non-critical care	791 (15.8)	264 (15.2)	276 (7.1)	390 (8.2)	202 (13.5)
Other/unknown	113 (2.2)	31 (1.8)	94 (2.4)	199 (4.2)	38 (2.5)
Medical outcome					
No effect	2032 (40.5)	730 (42.1)	2760 (70.7)	2860 (59.9)	651 (43.4)
Minor	2159 (43.0)	673 (38.8)	935 (23.9)	1398 (29.2)	540 (36.0)
Moderate	787 (15.7)	300 (17.3)	198 (5.1)	488 (10.2)	268 (17.9)
Major	40 (0.8)	32 (1.8)	11 (0.3)	32 (0.7)	41 (2.7)

HCF: health care facility.

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

CLINICAL TOXICOLOGY, 2017
https://doi.org/10.1080/15563650.2017.1370096

REVIEW

Acute lamotrigine overdose: a systematic review of published adult and pediatric cases

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Table 4. Cases of lamotrigine-only overdose.

Author	Year	Age	Indication for LTG	Seizure: S/M/status	Dose g (mg/kg)	Serum concentration mg/L	HPI	ECG	Outcome
Chavez et al. [37]	2015	36 y	Bipolar	Status	13.5	78	2	QRS = 128	Survived to rehab
Nogar et al. [45]	2011	48 y	Depression	Status	7.5	74.7	1.5	WCT	Death
Hajiali and Nassiri-Asl [59]	2015	26 y	Bipolar	S	40	73	Day 2	Sinus tachycardia	Survived
Miller and Levsky [25]	2008	23 y	Bipolar	None	N/A	63.9	4-h post-admission	N/A	Survived
Hernandez et al. [22]	2010	40 y	Seizure	None	6	49.5	NA	Un-remarkable	Survived
Kornhall and Nielsen [42]	2014	N/A	Bipolar	S	N/A	49	N/A	N/A	Survived
Dinnerstein et al. [39]	2007	42 y	Seizure (P)	Status	4.1	47.4	2 days	N/A	Survived
French et al. [40]	2011	19 y	Bipolar	M	4	35.7	19	Wide QRS then CHB	Death
Willis et al. [56]	2007	12 d	Child abuse	M	N/A	35	N/A	Normal	Survived
Lapoint et al [24]	2010	13 mo	Accidental	M	0.8	31	3	Normal	Survived
Abesamis et al. [15]	2010	20 mo	Accidental	M	1.5	30.5	11-h post-admission	Normal	Survived
Chiew et al. [17]	2013	18 mo	Accidental	None	N/A	30.3	N/A	N/A	Survived
Waring [54]	2009	42 y	Alcohol withdrawal Seizure	S	N/A	30	1.3	Normal	Survived
Castanares-Zapatero et al. [36]	2012	50 y	Bipolar	None	3.5	29.7	6	QRS =160	Survived
Grosso et al. [58]	2016	3 y	Accidental	Status	1.6	28.4	N/A	Sinus tachycardia, RBBB	Survived
Moore et al. [14]	2013	2 y	Seizure	S	0.5 (38.9)	26	3	N/A	Survived
Algahtani et al. [32]	2014	46 y	Bipolar	Status	6	25.6	N/A	N/A	Survived
Zidd and Hack [57]	2004	3 y	Seizure	None	1.2	25.3	1.5	NA	Survived
Bartecka-Mino et al. [29]	2017	2 y	N/A	S	(6.5)	25.3	N/A	N/A	Survived
Thundiyil et al. [52]	2007	19 mo	Accidental	M	N/A	20.3	1	NA	Survived
Dlugopolski et al. [18]	2007	4 y	Accidental	None	0.6-1	18.8	25	NA	Survived
Moore et al. [14]	2013	1 y	Accidental	None	N/A	18	8	N/A	Survived
Buckley et al. [35]	1993	26 y	Temporal lobe epilepsy	None	1.4	17.4	3	QRS =112	Survived
Veerapandiyan et al. [61]	2011	25 y	Seizure	None	1.6 (23.5)	16.5	N/A	NA	Survived
Briassoulis et al. [34]	1998	2 y	Accidental	Status	0.8 (61.6)	3.8	2	No dysrhythmia	Survived

LTG: lamotrigine, S: single seizure episode, M: multiple seizure episodes, N/A: not available, HPI: hours post-ingestion when concentration was measured, P: partial, WCT: wide complex tachycardia, CHB: complete heart block, y: year, mo: month, d: day.

Pubmed (2000-2018)
PSS 3 (grave) o 4 (fatal)

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Selected Topics: Toxicology

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TRANSIENT CARDIAC EFFECTS SYNDROME DUE T

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□ **Abstract—Background: We report a case of rivastigmine poisoning resulting in a full cholinergic syndrome with nicotinic, muscarinic, and central effects requiring supportive or intensive care in a pediatric patient. Case Report: A 3-year-old girl was admitted to the Emergency Department suspected of having ingested one or two pills of rivastigmine. The child was hyporeactive, with symptoms of altered mental status, sialorrhea, sweating, and diarrhea. Subsequently, she started showing signs of respiratory failure, severe tracheobronchial involvement, and gastric and abdominal distension. An electrocardiogram recorded frequent monomorphic ventricular ectopic beats with bigeminy and trigeminy. Long-term follow-up showed a transient dysrhythmia. Conclusion: Poisoning with rivastigmine can be a life-threatening condition. Timely identification and appropriate management of the toxic effects of this drug are essential and often life-saving. This is particularly true in cases of cholinergic syndrome subsequent to drug poisoning. Patients with cholinergic syndrome should also be assessed for possible cardiac complications such as dysrhythmias. The main factors predisposing to the development of such complications are autonomic disorder, hypoxemia, acidosis, and electrolyte imbalance.** © **2014 Elsevier Inc.**

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Selected Topics: Toxicology

ARE ONE OR TWO DANGEROUS? LIDOCAINE AND TOPICAL ANESTHETIC EXPOSURES IN CHILDREN

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ILLUSTRATIVE CASE

Severe Central Nervous System and Cardiovascular Toxicity in a Pediatric Patient After Ingestion of an Over-the-Counter Local Anesthetic

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informa
healthcare

ARTICLE

Ingestions of benzydamine-containing vaginal preparations

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Objective. Benzydamine is a non-steroidal antiinflammatory drug used as vaginal lavage for non-specific vaginitis. Data on overdoses are scarce despite its wide availability. *Methods*. Retrospective analyses of single ingestions of benzydamine vaginal irrigation products from January 1991 to December 2003 reported to the Spanish Poison Control Centre. *Results*. 724 cases met the inclusion criteria; 86.2% of the patients were over age 14 years. Gender was not a factor in young children but 80.9% of patients older than 14 years were female. In 85.9% of cases, benzydamine was ingested when it was mistaken for an oral preparation or for an oral antiseptic. The rest were unintentional exposures in children (13.8%) or suicidal attempts (0.3%). Clinical signs or symptoms, when present, were mainly gastrointestinal (48% of symptomatic patients) followed by neurological (31%) or both (21%). The most common symptom was nausea (32.8% of symptomatic patients) followed by vomiting (27.9%), dizziness (20.1%), hallucinations (15.3%), abdominal pain (13.4%), and esophageal irritation and agitation (10.5%, each). Six of 68 children (mean age 6.2, range 3–11 years) had hallucinations. A severe case was that of a 4-year-old child who had convulsions caused by the unintentional ingestion of benzydamine. *Conclusion*. This is the largest report of benzydamine ingestions. The outstanding feature was the high percentage of neurological manifestations in children and adults, mainly hallucinations, following the ingestion of an over-the-counter product.

Intoxicaciones pediátricas graves
POISINDEX

Range of Toxicity:

A) TOXICITY: Six deaths were reported following complications secondary to misuse of **loperamide** in infants less than 6.5 months of age. ADULTS: Two fatalities have been reported after **loperamide** abuse. Both patients had significantly high **loperamide** concentrations (77 ng/mL and 140 ng/mL, respectively). Even in therapeutic doses, patients may experience mild to more severe toxicity, including paralytic ileus. Repeated low doses (0.12 mg/kg for 3 doses in an infant, 0.27 mg/kg/day in a neonate) have caused CNS and respiratory depression. Cardiac dysrhythmias (eg, prolonged QRS and QT intervals, monomorphic and polymorphic [torsades de pointes] ventricular dysrhythmias) developed in 5 patients with a history of **loperamide** abuse (doses: 70 mg to 792 mg daily). All patients recovered following supportive care.

Medicamentos y otros productos sanitarios (comercializados en España) altamente tóxicos en la edad pediátrica

ANALGÉSICOS
- Opiáceos
- Paracetamol
- Ácido acetilsalicílico

ANTICATARRALES, ANTITUSÍGENOS, ANTIHISTAMÍNICOS Y ANTIASMÁTICOS	
- Antitusígenos opiáceos	Codeína Dextrometorfano
- Antihistamínicos	
- Descongestivos simpaticomiméticos	
- Imidazolinas descongestivas	
- Teofilina	

Medicamentos y otros productos sanitarios altamente tóxicos en la edad pediátrica

PSICOFÁRMACOS Y FÁRMACOS NEUROMUSCULARES	
- Antidepresivos	
- Antipsicóticos clásicos	
- Antipsicóticos atípicos	
- Antiepilépticos	Carbamazepina Lamotrigina Tiagabina Valproico
- Baclofeno	
- Rivastigmina	

FÁRMACOS ANTIMICROBIANOS	
- Antimaláricos	Cloroquina Hidroxicloroquina
- Isoniacida	
- Dapsona	

Medicamentos y otros productos sanitarios altamente tóxicos en la edad pediátrica

FÁRMACOS CARDIOVASCULARES
- Antagonistas de los canales del calcio
- Beta-bloqueantes
- Clonidina
- Digoxina
- Flecainida
- Propafenona

ANTIDIABÉTICOS, ANTIGOTOSOS, ANTIDIARREICOS Y SUPLEMENTOS MINERALES
- Sulfonilureas
- Colchicina
- Loperamida
- Hierro

Medicamentos y otros productos sanitarios altamente tóxicos en la edad pediátrica

PREPARADOS TÓPICOS		
- Anestésicos locales	Benzocaína	Dentispray 50 mg/ml solución dental 5 mL Hurricaine 200 mg/g gel bucal 50 mL Hemoal forte 60 mg/g 60 g Callívoro Marthand apósito impregnado (80,08 mg)
	Cincocaína	Ruscus Llorens 30 g pomada (5 mg/g cincocaína)
	Lidocaína	Versatis 5% parche (700 mg lidocaína) Lambdalina 40 mg/g crema 30g Emla 25 mg/g de lidocaina + 25mg/g prilocaina Xylonor spray 15% 60 mL
- Alcanfor		Vaporub 50 mg/g pomada 50 g Inhalvicks barra nasal (396,7 mg) Reflex gel 30 mg/g 50 g Alcohol alcanforado 10g/100mL solución cutánea
- Bencidamina		Tantun 50 mg/g pomada tópico 60 g Rosalgin 500 mg granulado para solución vaginal
- Minoxidil		Minoxidil EGF 50 mg/mL solución cutánea 180 mL
- Podofilina		Wartec 0,5% 3 ml solución Wartec 1,5 mg/g crema 5 g
- Permetrina		Sarcop 50 mg/g 70 g crema
- Nicotina		Nicotinell 21 mg parche Nicorette bucomist 1mg/pulsación pulverizador bucal
- Salicilato de metilo		Aceite de Gaulteria Reflex gel 100 mg/g 50 g

ONE PILL KILLERS COMERCIALIZADOS EN ESPAÑA

Principio activo	Dosis mínima potencialmente letal (mg/kg)	Dosis letal absoluta (mg)	Dosis máxima comercializada (mg)	Nº unidades potencialmente letales
Buprenorfina-naloxona		8	8	1
Metadona	1 o 2	10 a 20	40	1
Morfina	12	120	200	1
Oxicodona		30	80	1
Tapentadol		50	250	1
Tramadol	38	380	400	1

ONE PILL KILLERS COMERCIALIZADOS EN ESPAÑA

Principio activo	Dosis mínima potencialmente letal (mg/kg)	Dosis letal absoluta (mg)	Dosis máxima comercializada (mg)	Nº unidades potencialmente letales
Verapamilo	15	150	240	1
Diltiazem	15	150	300	1
Propafenona	15	150	300	1
Teofilina	8,4	84	300	1
Glibenclamida	0,1	1	5	1
Glipizida	0,1	1	5	1
Dapsona		100	100	1
Hidroxicloroquina	20	200	200	1
Ziprasidona		40	80	1

«2-3 PILL KILLERS» COMERCIALIZADOS EN ESPAÑA

Principio activo	Dosis mínima potencialmente letal (mg/kg)	Dosis letal absoluta (mg)	Dosis máxima comercializada (mg)	Nº unidades potencialmente letales
Bupropion	48	480	300	2
Amitriptilina	15	150	75	2
Cloroquina	20	300	155	2
Clozapina	35	350	200	2
Clorpromazina	20	200	100	2
Nifedipino	15	150	60	3
Flecainida	25	250	100	3
Lamotrigina		>= 525 mg	200	3
Olanzapina	4,2	42	20	3
Codeina	7 a 14	70 a 140	30	3
Isoniazida	80 a 150	800	300	3
Hidromorfona	7,2	72	32	3

¿Por qué una pequeña ingesta puede ser letal para un niño?

Alta toxicidad

Alta dosis

Accesibilidad

Falta de anticipación

¿Por qué una pequeña ingesta puede ser letal para un niño?

Alta toxicidad

Alta dosis

Accesibilidad ✗

Falta de anticipación ✗

DIFUSIÓN PREVENCIÓN

DIFUSIÓN ANTICIPACIÓN

CONCLUSIONES

1. Existen medicamentos y productos sanitarios altamente tóxicos para los niños
2. En nuestro entorno están disponibles presentaciones potencialmente letales con pocas unidades
3. La difusión entre los profesionales sanitarios y el desarrollo de medidas preventivas pueden reducir el riesgo

Y AHORA ¿QUÉ?

CAMPAÑAS DE PREVENCIÓN

Pediatras, enfermeras, médicos de familia

Salas de espera de centros sanitarios

Farmacéuticos

GRACIAS POR SU ATENCIÓN

PEQUEÑAS DOSIS … GRAN INTOXICACIÓN

RECUERDA…